



## A preliminary overview of the Brazilian Apioninae (Coleoptera: Brentidae) with an illustrated key for genera, and a checklist with distribution information

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**Abstract:** Here we examine the taxonomic diversity of the Brazilian Apioninae (Coleoptera: Brentidae) and provide an update based on the literature and through examination of material in primary Brazilian collections. Ten genera and 89 species are valid and we include 30 (25 genera, 5 species) new distribution records. *Chrysapion* Kissinger, 1968 is first reported in Brazil, restricted to the northeast. Ranges now include the Amazon (three genera and one subgenus) and Atlantic (four genera and one subgenus) forests, the Pantanal (five genera) and Cerrado (three genera). The ranges of several genera now include more than one new biome. An identification key (including images of adults and illustrations of male genitalia) also includes the 10 Brazilian genera of Apioninae for the first time.

**Keywords:** *Curculionoidea, Neotropical Region, taxonomy, systematic.*

### Uma visão geral preliminar dos Apioninae (Coleoptera: Brentidae) brasileiros: chave ilustrada para identificação de gêneros, lista de espécies e registros de distribuição

**Resumo:** O conhecimento sobre a diversidade taxonômica da fauna de Apioninae (Coleoptera: Brentidae) do Brasil é atualizado com base na literatura disponível e exame de material depositado nas principais coleções públicas do país. Dez gêneros e de 89 espécies válidas foram incluídas em 30 novos registros de distribuição (25 gêneros e cinco espécies). *Chrysapion* Kissinger, 1968 é registrado pela primeira para o Brasil, restrito aos biomas do Nordeste do Brasil. A distribuição geográfica inclui Amazônia (três gêneros e um subgênero) e Mata Atlântica (quatro gêneros e um subgênero), o Pantanal (cinco gêneros) e Cerrado (três gêneros). A distribuição de vários gêneros é atualizada para mais de um bioma. Uma chave de identificação (com imagens dos adultos e desenhos da genitália masculina) é apresentada pela primeira vez para os 10 gêneros de Apioninae que ocorrem no Brasil.

**Palavras-chave:** *Curculionoidea, Região Neotropical, sistemática, taxonomia.*

## Introduction

The subfamily Apioninae (Brentidae *sensu lato*) comprises a monophyletic group (Alonso-Zarazaga & Wanat 2014; Marvaldi et al. 2002; Kuschel 1995; Wanat 2001) of very small beetles (0.75-13.00 mm in length, >95% < 3 mm). This subfamily differs from the other Curculionoidea by the following: a markedly convex to globose, pear-shaped (*Apion* is Greek for 'small pear') body (except Antliarhinitae); straight antennae with a compact club that appear geniculate in some Rhadinocybini; short, two-segmented, palps; nine-striate elytra (Apionini) with some genera having remainders of a tenth; brentid-type abdomen; two large, usually convex, first ventrites, the second almost vertical at apex; the last three ventrites small, forming a valve-like structure that opens to extrude genitalia; usually long, cylindrical trochanters but which may be short in several basal lineages; tegmen with fully developed and diverse parameral plate (Alonso-Zarazaga & Wanat 2014; Anderson & Kissinger 2002; Jones et al. 2012; Kissinger 2005a; Ptaszynska et al. 2012).

Adults feed on living plant tissues, including all green parts as well as fruit. Larvae are usually endophagous and also feed on different plant parts, including stems, roots, inflorescences, fruit, seeds and tissues forming gall-like structures. In contrast to Arctic fauna of both the Old and New Worlds, the fauna of the Neotropical Region is very poorly known (Alonso-Zarazaga & Wanat 2014). While some few basal lineages of the Apioninae are associated with gymnosperms (Kissinger 1968; Alonso-Zarazaga and Wanat 2014), most basal groups are associated with plants in the clade Magnoliid as hosts (Alonso-Zarazaga & Wanat 2014). More apical apionines (Apionitae: Apionini) have at least 23 families in 15 orders of dicot angiosperms (Adoxaceae, Apiaceae, Asteraceae, Polygonaceae, Caprifoliaceae, Ebenaceae, Euphorbiaceae, Fabaceae, Lamiaceae, Malvaceae, Melastomataceae, Proteaceae, Rhamnaceae, Rutaceae, Salicaceae and Verbenaceae; Alonso-Zarazaga & Wanat 2014; Anderson & Kissinger 2002; Badenes-Perez & Jhonson 2007; Lima et al. 2008; Maia 2012). However, host associations of the Apioninae in South America are largely unknown (Alonso-Zarazaga & Wanat 2014).

More than 2,200 species of Apioninae have been described (Alonso-Zarazaga & Wanat, 2014), where they are found from high altitudes to sea level throughout the region (Alonso-Zarazaga 2004; Anderson & Kissinger 2002; Oberprieler et al. 2007; Alonso-Zarazaga & Wanat 2014) and where the species comprise about 205 genera and subgenera (Alonso-Zarazaga & Wanat 2014), seven supertribes and nine tribes (Bouchard et al. 2011; Alonso-Zarazaga 1990).

Kissinger (1968) pioneered the study of the genera and subgenera of *Apion* while focusing on the fauna of North and Central America, where he described an extraordinary diversity of forms and demonstrated that the tegmen of male genitalia provides important characters to determine their taxonomy. In South America, the Apioninae comprise 190 species (Wibmer & O'Brien 1986) in 19 genera, 10 of which were thought to be endemic (Kissinger 1968, 2002, 2003, 2005a, b). Among other South American countries, Brazil also has no recent studies of the Apioninae and the little taxonomic information available can be found in 17 published studies that include 86 species (summarized and listed under the genus *Apion* Herbst, 1797 in the catalog of Wibmer and O'Brien 1986).

Some subgenera of *Apion* were elevated to genera after Kissinger (1968) and Wibmer and O'Brien (1986) laid the groundwork (Alonso-Zarazaga 1990; Kissinger 1992). Subsequently, new genera

and subgenera were proposed (Alonso-Zarazaga 1990; Kissinger 1990, 1991, 1998, 1999b, 2002, 2005a). In the catalog of the families and genera of Curculionoidea (Alonso-Zarazaga & Lyal 1999), only five genera in the Apioninae were reported in Brazil, each of which only included the type species: *Neapion* Alonso-Zarazaga, 1990 (Ixapiini), *Apionion* Kissinger, 1998, *Bothryoapteron* Wagner, 1912a, *Coelopterapion* Wagner 1912a and *Stenapion* Wagner 1912a.

Currently, the only classification for suprageneric and generic Apioninae taxa is based on Palearctic fauna (Alonso-Zarazaga 1990, Ptaszynska et al. 2012, Winter et al. 2017). The Alonso-Zarazaga classification scheme does not include many North and Central American and most South American taxa, nor do the molecular studies of Ptaszynska et al. (2012) and Winter et al. (2017) include North, Central and South American taxa. Consequently, the basis for identification of the Apioninae of South America continues to be Kissinger (1968), even though obsolete. The genus *Apion* is now considered to be a monophyletic genus of 16 species that is restricted to the Palearctic (Alonso-Zarazaga 1990) and so many species listed by Kissinger (1968) remain in incorrect genera.

Today, hundreds of specimens have accumulated in collections in South American institutions under the genus *Apion*. This material is very important for taxonomic and systematic understanding of the Apioninae. Thus, we present a first step in understanding the Apioninae of Brazil by providing a checklist of genera and species, with their geographic distributions, host plants, citations of the relevant literature, and a key for the genera including photographs and illustrations.

## Material and Methods

Specimens of the Apioninae were examined between August 2016 and March 2017 at the following institutions: Coleção Entomológica Pe. J. S. Moure, Departamento de Zoologia, Universidade Federal do Paraná, Curitiba (DZUP); Coleção Entomológica do Instituto de Biociências, Universidade Federal de Mato Grosso, Cuiabá (UFMT); Instituto Nacional de Pesquisas da Amazônia, Manaus (INPA); Laboratório de Ecologia e Taxonomia de Artrópodes Terrestres, Universidade Federal de Mato Grosso, Cuiabá (LETA); Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro (MNRJ); Museu de Zoologia, Universidade de São Paulo, São Paulo (MZSP).

Taxa identification, development of the dichotomous key and the species checklist of Brazilian Apioninae were based on Wagner (1910, 1912a, b, c, 1914, 1915), Kissinger (1968, 1998, 2002, 2003, 2005a, b), O'Brien & Wibmer (1982), Wibmer & O'Brien (1986) and Alonso-Zarazaga & Lyal (1999). We adapted and modified the genera identification key from Alonso-Zarazaga (2004). We based the identification key on male characteristics because they are relevant for specific, generic and suprageneric classifications and diagnoses (Anderson & Kissinger 2002; Wanat et al. 2001). To better examine the sexes and genitalia morphology, dried specimens were softened in lukewarm water with detergent for 24 hours. Genitalia extraction methods follow Alonso-Zarazaga (1989) and terminology for external morphology follows Alonso-Zarazaga & Wanat (2014).

We examined the type material of the following 13 species: *Apion cydoniae* Bondar, 1950 and *A. zikani* Heller, 1922 (Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil - MNRJ); *Apion argentinum* Béguin-Billecocq 1909, *A. contrarium*

Béguin-Billecocq, 1909, *A. desbordesi* Béguin-Billecocq, 1911, *A. ingratum* Béguin-Billecocq, 1909, *A. lativentre* Béguin-Billecocq, 1909, *A. salpingoides* Béguin-Billecocq, 1909, *A. simplex* Béguin-Billecocq, 1909, *A. rufonigrum* Béguin-Billecocq, 1911 and *A. tucumanense* Béguin-Billecocq, 1909 (Museu Argentino de Ciencias Naturales “Bernardino Rivadavia”, Buenos Aires, Argentina - MACN); *Neapion (Neotropion) diringsi* De Sousa & Ribeiro-Costa, 2018 (MZSP) and *Neapion (Neotropion) marquesae* De Sousa & Ribeiro-Costa, 2018 (DZUP).

We examined photographic images of the type material of the following species: *Apion areolatum* Kirsch, 1874, *A. luteipes* Kirsch, 1874 and *A. opacum* Kirsch, 1874 deposited in the Staatliches Museum für Tierkunde, Dresden (SMTD); *A. novaeteutoniae* Voss, 1959b, *A. phaseoli* Voss, 1958 and *A. sesbaniae* Voss, 1958 (Zoological Museum, Hamburg); *Apion clarki* Kissinger, 1990 (Smithsonian National Museum of Natural History, Washington, USA - USMN); *Apion hibisci* Fall, 1918, *A. neolentum* Kissinger, 1968, *A. umboniferum* Fall, 1898, *A. xanthoxyli* Fall, 1898 (Database of Zoological Collections - CVZBASE of the Museum of Comparative Zoology - Harvard University, <http://mczbase.mcz.harvard.edu/name/Apion>). We also examined photographic images and redescrptions in Kissinger (1968) of the following species: *Apion americanum* Wagner, 1908, *Apion aurichalceum* Wagner, 1912b, *Apion bryanti* Wagner, 1914, *Apion constricticollae* Sharp, 1890, *Apion chiriquense* Sharp, 1890, *Apion crassum* Fall, 1898, *Apion grallarum* Sharp, 1891a, *A. peculiare* Wagner, 1909, *A. spinitarse* Wagner, 1912a and *A. spretissimum* Sharp, 1890. We examined photographic images of material named *Chrysapion auctum* (Sharp, 1890) and *Chrysapion tantillum* (Sharp, 1890) from Arizona State University Hasbrouck Insect Collection (<http://symbiota4.acis.ufl.edu/scan/portal/>). Some species are very conspicuous, well-illustrated or labeled in such a way as to make examination of the type material unnecessary (e.g. *Apion binodosum* Wagner, 1912a, *A. cionoides* Wagner, 1912a, *A. testaceum* Wagner, 1912a., *A. luteirostre* Gerstaecker, 1854, *A. brevicorne* Gerstaecker 1854, *A. ensirostre* Gerstaecker, 1854, *A. periscelis* Gyllenhal, 1839, *A. pseudampullula* Voss, 1940, *A. undulipenne* Wagner, 1912a).

We indicate new records in the geographic distribution of the checklist by placing them in parentheses. Geographical records from the literature were complemented by the examination of the labels of the specimens deposited in the Brazilian public institution collections.

Classification for the suprageneric taxa is in alphabetical order in the checklist, following Bouchard *et al.* (2011). Genera and species determined to be *Incertae sedis* are placed in a special section at the end of the checklist.

Suprageneric group names are typed in bold capital letters, while genera, subgenera and species group names are both in italic and bold capitals, followed by author, date and page of publication preceded by a colon (:). All genera and subgenera include: type-species, synonyms, distribution in bold type face, country in parentheses, host plants, references and page of publication preceded by an colon (:), remarks explaining how the taxa was recognized. Genera are left-justified while subgenera are indented and in parentheses. The most current species name is followed by author, date and page of publication in parentheses. We include synonyms in chronological order, followed by comments (if needed, in parentheses) and references between square brackets; distribution in bold type faces and states between in parentheses, references and page of publication, remarks about the species and material examined when studied.

Photographic images were taken using a Leica MZ16 stereomicroscope, Leica DFC 500 camera, Leica 3D viewer module and version montage 4.7 (software). Drawings and images were edited in Photoshop CS6. Schematics of the male genitalia were drawn using a stereomicroscope or a microscope with a light camera coupled system or image capture system.

## Results

From ca 230 specimens in collections in Brazil, we identified 10 genera and two subgenera of Apioninae in a total of 43 species. We identify 25 Brazilian species, 15 of which are placed in “*Apion*” in the broadest sense. Thirty new records are included, one for Brazil: *Chrysapion* Kissinger, 1968. Another 24 records are new for Brazil: the geographic distribution of *Neapion* Alonso-Zarazaga, 1990, subgenus *Neotropion* Alonso-Zarazaga, 1990 is extended to include Amazon (Acre and Pará) and Atlantic (São Paulo and Paraná) forests; *Coelocephalopion* Wagner, 1914 is extended to the Pantanal (Mato Grosso and Mato Grosso do Sul); *Apionion* Kissinger, 1998 now includes the Pantanal (Mato Grosso) and Atlantic Forest (Rio de Janeiro); *Bothryopteron* Wagner, 1912 is extended to the Amazon (Maranhão), Pantanal (Mato Grosso), Cerrado (Tocantins and Goiás) and Atlantic Forest (Santa Catarina); *Coelopterapion* Wagner, 1912 to the Pantanal (Mato Grosso), Cerrado and Atlantic Forest (Minas Gerais, São Paulo and Paraná); *Mythapion* Kissinger, 2005 now includes the Amazon (Amazonas); *Stenapion* Wagner, 1912 is also extended to include Amazon Forest (Pará), the Pantanal (Mato Grosso and Mato Grosso do Sul), Cerrado and Atlantic Forest (Minas Gerais and Santa Catarina). *Apionion samson* is reported for the first time from Brazil (Minas Gerais), two species of *Coelopterapion*, *C. cionoides* (Wagner 1912a) and *C. testaceum* (Wagner 1912a) are first records from the state of São Paulo; *Trichapion lativentre* (Béguin-Billecocq, 1909) is a first record for Paraná; one species of *Apion* in the broadest sense, *A. ensirostre* Gerstaecker, 1854, is a first record for the state of Mato Grosso do Sul.

### Key to the genera of Brazilian Apioninae (males)

1. Middle coxae contiguous, not separated by junction of meso- and metaventral processes (Fig.1) ..... *Chrysapion* Kissinger, 1968
  - Middle coxae separated by junction of meso- and metaventral processes (Fig. 2) ..... 2
2. Elytra expanded and nodose apically; apical prominences in the intervals 2 + 3 and 8 interrupted by large deep pit (Fig. 6); if elytra not nodose apically, the apex of intervals 2 + 3 and 8 interrupted by punctures; pronotum conical to subconical and without basal flange when in dorsal view ..... *Bothryopteron* Wagner, 1912a
  - Elytra not expanded and nodose apically; apex at intervals 2 + 3, and 8 not interrupted by large deep pit or punctures; pronotum cylindrical, conical or campaniform to subturbinate or tripartite, with or without basal flange in dorsal view ..... 3
3. Rostrum straight in side view (Fig. 8), stout and cylindrical pronotum subcylindrical (Fig. 7) to tripartite (Fig. 7) ..... *Stenapion* Wagner, 1912a

- Rostrum more or less distinctly curved or tapering towards apex in side view; pronotum conical or campaniform to subtrubinate ..... 4
- 4. Elytra with fasciate pattern formed by light and/or dark scales (Fig.9); first protarsomere at most isodiametric, second clearly transverse; mesocoxae widely separated (0.25-0.30 times middle coxae diameter) *Neapion* Alonso-Zarazaga, 1990 ..... 5
- Elytra without fasciate pattern; first protarsomere distinctly longer than wide; distance between mesocoxae usually not separated by more than 0.25 mesocoxal diameter (Fig. 2) ..... 6
- 5. Pronotum subconical, sides in basal two-thirds straight (Fig. 9); body robust; elytra convex to strongly convex, with or without raised areas in intervals (Fig. 10). On Rutaceae ..... Subgenus *Neotropion* Alonso-Zarazaga, 1999
- Pronotum subcylindrical, sides rounded; elongated body; elytra never convex to strongly convex, without raised areas in intervals. On Caprifoliaceae ..... Subgenus *Neapion* Alonso-Zarazaga, 1990
- 6. Body stout, pyriform and sub-spherical elytra in dorsal view; pronotum conical (Fig. 11); elytra strongly convex in lateral view (Fig. 12) ..... *Coelopterapion* Wagner, 1912a
- Body more elongate; pronotum conical (Fig. 17) to subconical (Fig. 20) or campaniform to subtrubinate (Figs. 22, 27); elytra less convex in lateral view (Figs. 17, 18, 21, 23, 28) ..... 7
- 7. Ventral region of the rostrum with a high median keel, sulci between the median and lateral keel punctate and with semierect pilosity; pronotum campaniform with vestiture perpendicular to the apical margin; elytra with base of the intervals 3 with a dense pubescent spots. On Malvaceae ..... *Alocentron* Schilsky 1901 (subgenus *Nearctalox* Alonso-Zarazaga, 1990)
- With another character combination ..... 8
- 8. Tegminal plate fused with free ring (Fig. 13-14) ..... *Coelocephalapion* Wagner, 1914
- Tegminal plate articulated with free ring (Fig. 15-16) ..... 9
- 9. All tibia not mucronate ..... *Apionion* Kissinger, 1998 (in part)
- At least median tibia mucronate ..... 10
- 10. Pronotum conical to subconical, without basal flange (Fig. 20); fore tibia not mucronate ..... *Apionion* Kissinger, 1998 (in part)
- Pronotum otherwise; fore tibia mucronate ..... 11
- 11. Pronotum with basal flange (Fig. 22) and/or prescutellar fovea; if fore tibia not mucronate, the pronotum is always campaniform (Fig. 22) to subtrubinate; first tarsomere of one of the legs modified in the form of plantar spine (Fig. 26) *Trichapion* Wagner, 1912b
- Pronotum without basal flange and prescutellar fovea (Fig. 27); fore tibiae mucronate; tarsomeres not modified in the form of plantar spine ..... *Mythapion* Kissinger, 2005a

#### Checklist of the Apioninae recorded in Brazil

Subfamily Apioninae Schönherr, 1823:1136

Supertribe Apionitae Schönherr, 1823

Tribe Apionini Schönherr, 1823

Subtribe Aspidapiina Alonso-Zarazaga, 1990:34

Genus *Alocentron* Schilsky, 1901:G (in key)

Type-species: *Apion curvirostre* Gyllenhal, 1833.

#### Subgenus *Nearctalox* Alonso-Zarazaga, 1990:54

Type-species: *Apion hibisci* Fall, 1918:219.

Synonyms: *Apion* subgenus *Alocentron* sensu Kissinger 1968:234, 258 [Alonso-Zarazaga 1990: 54].

Distribution: **North, Central and South America (Brazil).**

Host plants: Malvaceae.

References: Kissinger 1968:234, 1988:304, 1992:65; Alonso-Zarazaga 1990:54, 2004:696.

Remarks: examined images of the type species available in The Database of the Zoological Collections (CVZBASE) of the Museum of Comparative Zoology - Harvard was compared with the studied material.

#### *Alocentron chiriquense* (Sharp, 1890)

Synonyms: *Apion chiriquense* Sharp, 1890:70; *Apion chiriquense* sbsp. *curvinasus* Wagner, 1912b: 100; *Apion chiriquense* var. *curvinasus* Wagner, 1912b:118.

Distribution: **Mexico, Guatemala, Nicaragua, Panama, Brazil (Rio de Janeiro).**

References: Blackwelder 1947:828; Kissinger 1959a:28, 1968:235, 236; O'Brien and Wibmer 1982:21; Wibmer and O'Brien 1986:40.

#### Subtribe *Ixapiina* Alonso-Zarazaga, 1990:71

##### Genus *Neapion* Alonso-Zarazaga, 1990:75

Type-species: *Apion umboniferum* Fall, 1898:174.

Synonyms: *Apion* subgenus *Ixias* sensu Kissinger 1968:41, 257, not Sainte-Claire Deville, 1924:122 (= *Ixapion* Roudier et Tempère, 1973:80) [Alonso-Zarazaga 1990: 54]; *Xixias* Kissinger, 1991:35.

Remarks: examined images of the type species available in The Database of the Zoological Collections (CVZBASE) of the Museum of Comparative Zoology - Harvard University was compared with the studied material.

#### Subgenus *Neotropion* Alonso-Zarazaga, 1990:75

Type-species: *Apion xanthoxyli* Fall, 1898:176.

Distribution: **North, Central and South America (Colombia, Venezuela, Trinidad, Brazil and Paraguay), Antilles.**

Host plants: Rutaceae.

References: Kissinger 1959a:24, 31, 1968:42 (as *peculiare* species group), 1990:37, 1992:65; Alonso-Zarazaga 1990:75, 2004:696; Alonso-Zarazaga and Lyal 1999:58.

Remarks: examined images of the type species available in The Database of the Zoological Collections (CVZBASE) of the Museum of Comparative Zoology - Harvard University and of the *Apion clarki* Kissinger, 1990 deposited in the Smithsonian National Museum of Natural History, Washington, EUA (USMN) was compared with the studied material.

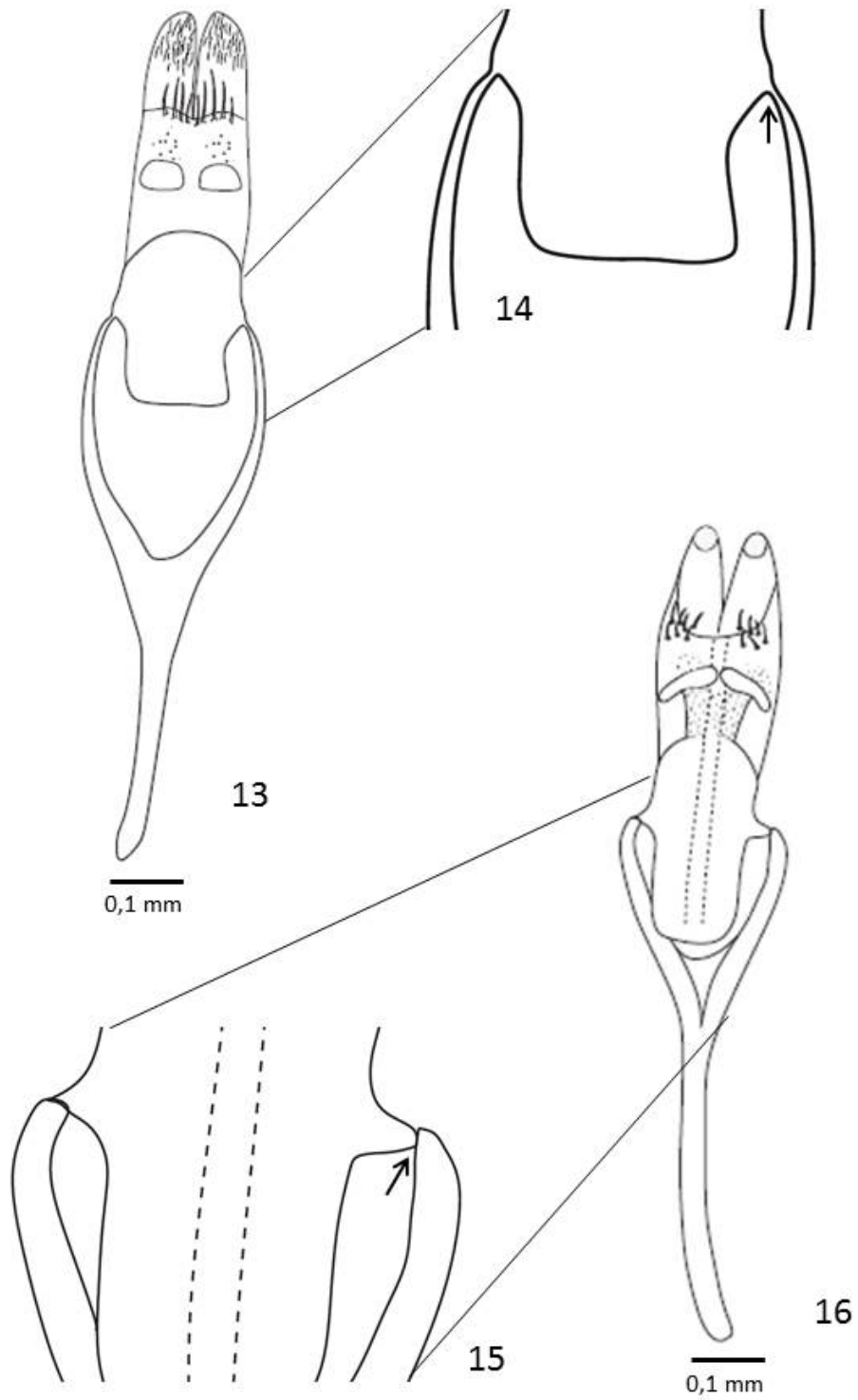
Material examined: *Neapion* (*Neotropion*) undetermined species.

**Brazil: Amazonas:** Rio Solimões, Lago do José: 1 ind., IIIV-09-1979, J. Adis, Fumigação (fogging), W. O. Sousa det. (INPA); **Acre (New record):** Rio Branco: 1 ind., IV-1954, 1 ind., X-1954, M. Alvarenga col., W. O. Sousa det. (MZSP); **Pará (New record):** Tapará: 1 ind., IX-1922, H. L. Boy, W. O. Sousa det. (MNRJ);

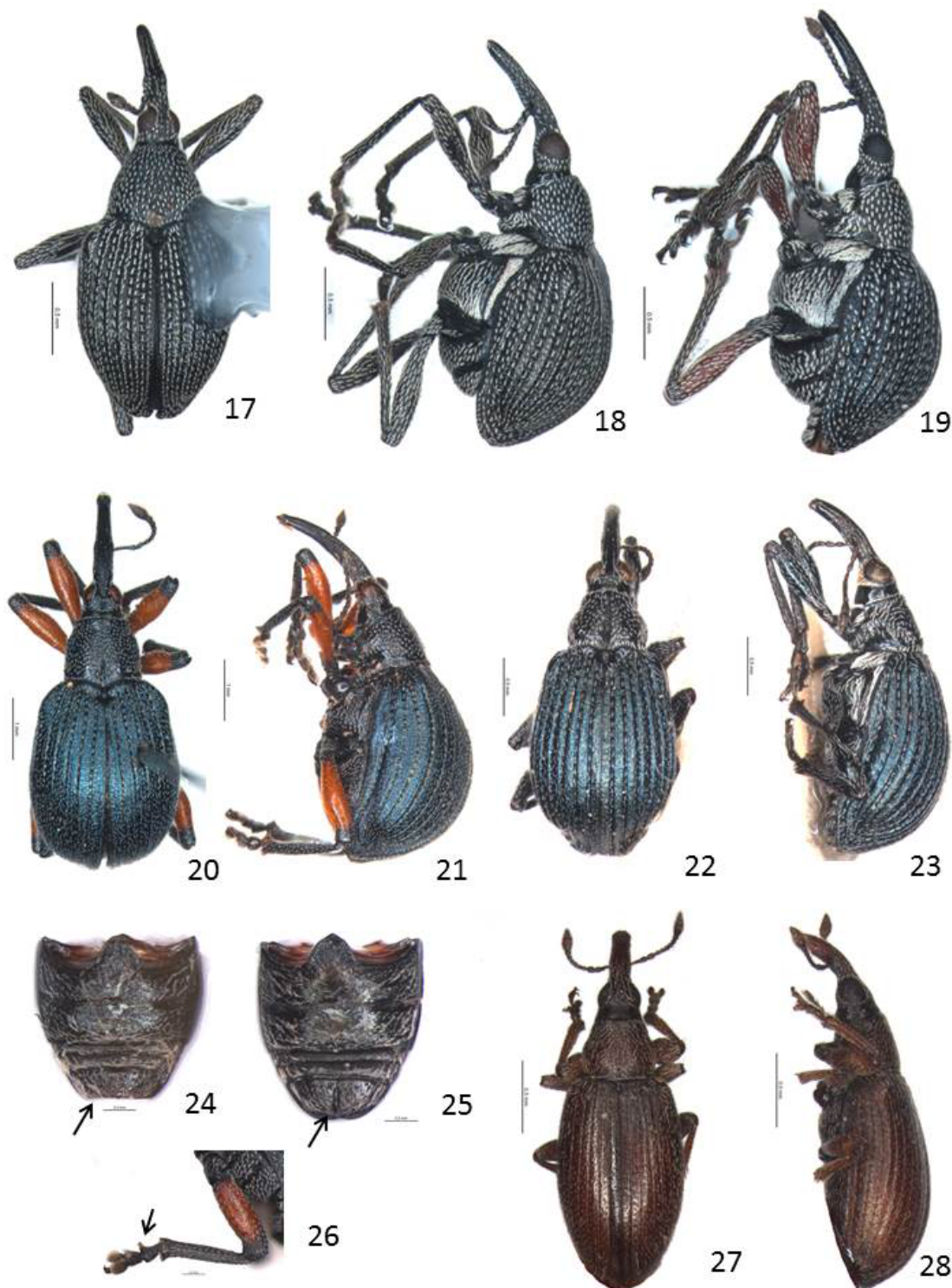
## Brazilian Apioninae



**Figures 1-12.** *Chrysapion* sp.: 1, prothorax, meso- and metaventre ventral view; 3, dorsal view; 4, lateral view. *Trichapion* sp.: 2, prothorax, meso- and metaventre ventral view. *Bothryopteron binodosum* (Wagner): 5, dorsal view; 6, lateral view. *Stenapion* sp.: 7, dorsal view; 8, lateral view. *Neapion (Neotropion) marquesae* De Sousa & Ribeiro-Costa: 9, dorsal view; 10, lateral view. *Coelopterapion testaceum* (Wagner): 11, dorsal view; 12, lateral view.



**Figures 13-16.** *Neapion (Neotropion) marquesae* De Sousa & Ribeiro-Costa: **13**, Male genitalia: tegmen, dorsal view; **14**, prostegium fused with free ring. *Trichapion* sp. (Béguin-Billecocq): **15**, Male genitalia: tegmen, dorsal view; **16**, prostegium articulated with free ring.



**Figures 17-28.** *Coelocephalapion* sp.: 17, male, dorsal view; 18, male, lateral view; 19, female, lateral view. *Apionion samson* (Sharp): 20, dorsal view; 21, lateral view. *Trichapion* sp. (Béguin-Billecocq): 22, dorsal view; 23, lateral view; 24, male, abdomen with apical margin of 5<sup>th</sup> sternite truncate; 25, female, abdomen with rounded margin and median area of 5<sup>th</sup> sternite marked by a median sulcus. *Trichapion* sp.: 26, trochanter, femur, tibia, tarsus 3 and tarsomere 1 modified in the form of plantar spine of male. *Mythapion simplex* (Béguin-Billecocq): 27, dorsal view; 28, lateral view.

**Mato-Grosso:** Barra do Tapirapés: 1 ind., I-30-31-1964, B. Malkin col. (MZSP); **São Paulo (New record):** Itú: Fazenda Pau D'Alho: 1 ind., I-59, col. U. Martins, W. O. Sousa det. (DZUP); **Paraná (New record):** Curitiba: 4 ind., XII-1935, 103 (MZSP). **Paraguay: Misiones:** Villa Florida: 1 male (dissected), IV-17-1988, Colr. C. Aguilar, W. O. Sousa det. (DZUP); **San Ignacio,** Tahyity: 1 ind., II-20-22-2005, B. Garcete col., W. O. Sousa det. (DZUP).

***Neapion (Neotropion) americanum (Wagner, 1908)***

Synonyms: *Apion americanum* Wagner, 1908:5; *Apion conicicolle* Sharp, 1890:65 (not Gerstaecker 1854:270) [Wagner, 1908:5].

Distribution: **Mexico, Belize, Guatemala, Panama, Costa Rica, Venezuela, Brazil (Goiás: Jataí).**

References: Wagner 1910:11, 1912c:117; Blackwelder 1947:828; Kissinger 1963a:156, 1968:41, 42, 1990:37; O'Brien and Wibmer 1982:20; Wibmer and O'Brien 1986:40.

***Neapion (Neotropion) diringsi De Sousa & Ribeiro-Costa, 2018***

Distribution: **Brazil (Amazônas: Itacoatiara).**

Type material: Brazil, Itacoatiara, Amazonas, Dirings, Januare 1965 (Holotype) (MZUSP). Paratype: 4 females, 1 with genitalia in a separate microvial (MZUSP), glued on paper triangle, same holotype data, 1 female (MZUSP), glued on paper triangle, same holotype data except III/1964.

Material examined: Brazil, Itacoatiara, Amazonas, Dirings, Januare 1965, 1 male without head, glued on paper triangle, with genitalia in a separate microvial (MZUSP).

***Neapion (Neotropion) marquesae De Sousa & Ribeiro-Costa, 2018***

Distribution: **Brazil (Mato Grosso: Poconé).**

Type material: Brasil, Mato Grosso: Poconé, (Canopy), 25/10/2012, Bonatti, J., seca, Cord. 04, Funil 50, Quadrante F2 (Holotype) (DZUP). Paratype: 1 female dissected (DZUP), same holotype information except Cord. 3, Funil 44, 1 female (LETA), same holotype information except 05/09/2013, Funil 36.

***Neapion (Neotropion) peculiare (Wagner, 1909)***

Synonyms: *Apion peculiare* Wagner, 1909:766; *Apion gibbosum* Sharp, 1891a:82 (not Herbst 1797:103, not Faust 1887) [Wagner, 1909:766].

Distribution: **Costa Rica, Panama, Brazil (Goiás: Jataí).**

References: Wagner 1912c:117; Blackwelder 1947:830; Kissinger 1963a:158, 1968:41, 44, 1990:38; O'Brien and Wibmer 1982:26; Wibmer and O'Brien 1986:42.

**Subtribe Piezotrachelina Voss, 1959a:51**

**Genus *Chrysapion* Kissinger, 1968:23**

Type-species: *Apion auctum* Sharp, 1890:78.

Distribution: **North, Central, and South America (Colombia, Venezuela and Brazil (New record)), Antilles.**

Host plants: Fabaceae.

References: Kissinger 1968:23, 1988:302; O'Brien and Wibmer 1982:19; Wibmer and O'Brien 1986:38; Alonso-Zarazaga 1990:79, 88, 2004:696; Alonso-Zarazaga and Lyal 1998:59.

Remarks: images examined of the material determined by D. G. Kissinger of the species *Chrysapion auctum* (Sharp, 1890) and *Chrysapion tantillum* (Sharp, 1890:55) of the Arizona State University Hasbrouck Insect Collection and (<http://symbiota4.acis.ufl.edu/scan/portal/>).

Material examined: *Chrysapion* undetermined species. **Brazil (New record): Ceará:** Barbalha: 10 ind., V-1969, M. Alvarenga, Coleção M. Alvarenga, W. O. Sousa det. (DZUP), Crato, S. Araripe: 17 ind. V-1969, M. Alvarenga, Coleção M. Alvarenga, W. O. Sousa det. (DZUP); **Rio Grande do Norte:** Natal: 7 ind., X-1951, M. Alvarenga col., Coleção M. Alvarenga, W. O. Sousa det. (MZSP); **Pernambuco:** Petrolina: 3 ind., V-1969, M. Alvarenga, Coleção M. Alvarenga, W. O. Sousa det. (DZUP), Caruaru: 2 ind., IV-1972, M. Alvarenga, Coleção M. Alvarenga, W. O. Sousa det. (DZUP).

**Subtribe Oxystomatina Alonso-Zarazaga, 1990:110**

**Genus *Coelocephalopion* Wagner, 1914:145**

Type-species: *Apion bryanti* Wagner, 1914:147, by subsequent designation of Kissinger 1968:29.

Distribution: **North, Central and South America (Colombia, Venezuela, Trinidad, Brazil, Bolivia, Chile and Argentina), Antilles. Introduced in Thailand and Australia.**

Host plants: Asteraceae, Euphorbiaceae, Fabaceae.

References: Blackwelder 1947-828, Kissinger 1968:29, 151, 257, 258, 1988:303, 1992:66; O'Brien and Wibmer 1982:20; Wibmer and O'Brien 1986:39; Alonso-Zarazaga 1990:88, 2004:696; Forno *et al.* 1994:147; Alonso-Zarazaga and Lyal 1999:61; Vergara-Pineda *et al.* 2014.

Material examined: *Coelocephalopion* undetermined species.

**Brazil: Pernambuco:** Caruaru: 3 ind., IV-1972, M. Alvarenga, Coleção M. Alvarenga, W. O. Sousa det. (DZUP); **Mato Grosso (New record):** Claudia: 1 male, 3 female, IV-2015, Mod. I, Gap. 35, 11°35'45.0" S, 55°16'59.0" W, 1 male, Gap. 21, 11°36'07.5" S, 55°15'59.0" W, 1 female, Mod. II, Gap. 12, 11°25'43.3" S, 55°18'52.0" W, Puça, Vicente R. E., W. O. Sousa det. (UFMT); **Mato Grosso do Sul (New record):** Corumbá, Porto Esperança: 1 ind., XII-7-1960, K. Lenko col., *Apion nodicorne* grp., det Kissinger (MZSP); **Rio de Janeiro:** Tijuca, Esc. Nac. Agr.: 2 ind. (1 damaged), IV-24- 1935, Charles Hathamay, 11.305, *Apion* sp. in *nodicorne* grp. (MZSP), Represa Rio Grande, Guanabara: 1 ind., VII-1972, 3 male, VII-1972, F. M. Oliveira, Coleção M. Alvarenga, W. O. Sousa det. (DZUP); **Paraná:** Guarapuava, Est. Águas Claras: 1 ind., I-02-1987, Lev. Ent. PROFAUPAR LAMPADA, Ponta Grossa: 1 ind. VII-20-87, Prof. Mal., W. O. Sousa det. (DZUP).

***Coelocephalopion atirostre (Fabricius, 1802)***

Synonyms: *Atelabus atirostre* Fabricius, 1802:424; *Apion luteirostre* Gerstaecker, 1854:254 [Alonso-Zarazaga, 2014:75]; *Apion acarinum* Sharp 1890:64 [Wagner 1912a:30]; *Apion argentinum* Béguin-Billecocq 1909:464 [Wagner 1912a:30]; *Apion cydoniae* Kissinger 1957:40, error [not Bondar, 1950:454].

Distribution: **Mexico, Guatemala, Panama, Colombia, Venezuela, Brazil (Rio de Janeiro, Santa Catarina), Surinam, Bolivia, Argentina.**



References: Wagner 1910:8; Blackwelder 1947:829; Kissinger 1959a:30, 1968:196, 210; O'Brien and Wibmer 1982:24; Wibmer and O'Brien 1986:42.

Type material: 1 ind., *Apion argentinum* L. B. B. Rep. Argentina, Prov. Buenos Aires, VII-09-1905, C Bruch (Holotype) (MACN).  
Material examined: **Brazil: Rio de Janeiro:** Represa Rio Grande, Guanabara: 1 ind., VII-1962, F. M. Oliveira, Coleção M. Alvarenga, W. O. Sousa det. (DZUP).

***Coelocephalapion brachyrrhinum* (Wagner, 1914)**

Synonyms: *Apion brachyrrhinum* Wagner, 1914:150.

Distribution: **Brazil (Rio de Janeiro).**

References: Blackwelder 1947:828; Kissinger 1968:168; Wibmer and O'Brien 1986:40.

Remarks: lost type material (Kissinger 1968:168).

***Coelocephalapion coelocephalum* (Wagner, 1914)**

Synonyms: *Apion coelocephalum* Wagner, 1914:146.

Distribution: **Brazil (Rio de Janeiro).**

References: Blackwelder 1947:828; Kissinger 1968:168; Wibmer and O'Brien 1986:40.

Remarks: lost type material (Kissinger 1968:168).

***Coelocephalapion dissimilipes* (Sharp, 1890:49)**

Synonyms: *Apion dissimilipes* Sharp, 1890:49.

Distribution: **Mexico, Guatemala, Panama, Brazil (Pernambuco e Bahia).**

References: Wagner 1912a:32; Blackwelder 1947:829; Kissinger 1963b:122, 125, 1968:171, 172; O'Brien and Wibmer 1982:22; Wibmer and O'Brien 1986:41.

***Coelocephalapion longipenne* (Wagner, 1912a:13)**

Synonyms: *Apion longipenne* Wagner, 1912a:13; *Apion cydoniae* Bondar, 1950:454 [Kissinger 1968:195]; *Apion luteirostre* Kissinger 1957:40 [not Gerstaecker, 1854:254].

Distribution: **Mexico, Brazil (Pernambuco e Bahia).**

Host plants: *Croton* sp. (Euphorbiaceae).

References: Blackwelder 1947:829; Kissinger 1959a:30, 1968:195, 210; D'Araujo e Silva 1968:461; O'Brien and Wibmer 1982:24; Vaurie 1953:14; Wibmer and O'Brien 1986:42.

Type material: 6 ind., *Apion cydoniae* Bond., Estado da Bahia, Brazil, G. Bondar Leg. (Cotype) (MNRJ).

***Coelocephalapion rugifrons* (Boheman, 1839)**

Synonyms: *Apion rugifrons* Boheman, 1839:373.

Distribution: **Brazil.**

References: Wagner 1910:55; Blackwelder 1947:830; Kissinger 1968:168, Wibmer and O'Brien 1986:43.

***Coelocephalapion spretissimum* (Sharp, 1890)**

Synonyms: *Apion spretissimum* Sharp, 1890:48.

Distribution: **Mexico, Belize, Costa Rica, El Salvador, Guatemala, Nicaragua, Panama, Brazil (Rio de Janeiro).**

References: Blackwelder 1947:830; Kissinger 1963b:122, 126, 1968:174, 209; O'Brien and Wibmer 1982:27; Wibmer and O'Brien 1986:43.

**Subtribe Trichapiina Alonso-Zarazaga, 1990:116**

**Genus *Apionion* Kissinger, 1998:93**

Type-species: *Apion crassum* Fall, 1898:165.

Distribution: **North, Central and South America (Colombia, Trinidad, Brazil, Peru and Bolivia).**

Host plants: Asteraceae, Euphorbiaceae, Fabaceae.

References: Kissinger 1968:152 (as *annulatum* species group), 1998:93; Alonso-Zarazaga and Lyal 1999:60; Whitehead 1977:165 (as *Coelocephalapion annulatum* species group).

Remarks: examined images of the type of the *Apion neolentum* Kissinger, 1968 available in The Database of the Zoological Collections (CVZBASE) of the Museum of Comparative Zoology - Harvard University was compared with the studied material.

Material examined: *Apionion* undetermined species. **Brazil: Manaus (New record):** Reserva Duke, 26 Km NE Manaus: 1 male, Plot C Malaise 3, IV-95, Barbosa, M. G. V., W. O. Sousa det. (INPA), Rio Solimões, Lago do José, Prox. Manaus: 2 male, VIII-09-1979, fumigação (fogging), J. Adis e outros, W. O. Sousa det. (INPA); **Mato Grosso (New record):** Nossa Senhora do Livramento, Baía dos Coqueiros: 2 female, IX-25-1988, Marinez I. Marques, W. O. Sousa det. (UFMT); **Rio de Janeiro (New record):** Rio de Janeiro, (Corcovado) GB: 2 male, IX-1958, 1 male, X-1958, 1 male, 1 female, XI-1958, 1 male., X-1959, 4 male (1 dissected), 2 female, VIII-1960, Corcovado, D. Federal: 1 male., 1 female, VIII-1958, M. Alvarenga, Ex-coleção M. Alvarenga, W. O. Sousa det. (MZSP).

***Apionion annulatum* (Gerstaecker, 1854)**

Synonyms: *Apion annulatum* Gerstaecker, 1854:256.

Distribution: **Brazil.**

References: Wagner 1910:11, Blackwelder 1947:828, Kissinger 1968:152, 1998:93; Wibmer and O'Brien 1986:40.

***Apionion faldermanni* (Gyllenhal, 1839)**

Synonyms: *Apion faldermanni* Gyllenhal, 1839:370.

Distribution: **Brazil.**

References: Wagner 1910:27; Blackwelder 1947:829; Kissinger 1968:152; Wibmer and O'Brien 1986:41.

***Apionion samson* (Sharp, 1891)**

Synonyms: *Apion samson* Sharp, 1891:84.

Distribution: **Belize, Panamá, Bolivia, Brazil.**

References: Kissinger 1968:49; O'Brien and Wibmer 1982:21; Wibmer and O'Brien 1986:43.

Material examined: **Brazil (New record): Minas Gerais:** Rio Verde: 440m, 1 male, Cu, 447, 11.60, W. O. Sousa det. (DZUP).

**Genus *Trichapion* Wagner, 1912b:116**

Type-species: *Apion aurichalceum* Wagner, 1912b:103, by subsequent designation Kissinger 1959b:248.

Distribution: **North, Central and South America (Colombia, Venezuela, Brazil, Peru, Bolivia, Chile, Paraguay, Argentina and Uruguay). Introduced in South Africa.**

Host plants: Asteraceae, Fabaceae.

References: Blackwelder 1947:828, Kissinger 1959a:24, 32, 1959b:247, 1968:49; 1989a:271; O'Brien and Wibmer 1982:20; Wibmer and O'Brien 1986:39; Alonso-Zarazaga 1990:116,

2004:696; Alonso-Zarazaga and Lyal 1999:59; Alonso-Zarazaga and Wanat 2014:399, 405.

Material examined: *Trichapion* undetermined species. **Brazil: Amazonas:** Parque Nacional do Jaú, Rio Carabinani, mg. Dir 1°59'S/61°32'W: 1 male, IV-06-07-1994, Motta, C, *et al.* Col., Luz mista mercúrio Luz negra BL e BLB Lençol, W. O. Sousa det. (INPA), Manaus, Reserva Duke, 26 Km NE Manaus: 1 male, Plot C Malaise 4, 1 female, Plot C Malaise 1, 1 female, Plot C Malaise 5, 1 female, 372, 0031505, Plot C Malaise 4, VI-95, 1 female, 372, 0031506, 1 female, 372, 0031507, Plot C Malaise 4, V-95, Barbosa, M. G. V., W. O. Sousa det. (INPA).

#### *Trichapion acanthopus* (Wagner, 1912)

Synonyms: *Apion acanthopus* Wagner, 1912c:110.

Distribution: **Brazil (Amazonas), Bolivia.**

References: Blackwelder 1947:828; Wibmer and O'Brien 1986:39.

#### *Trichapion fusconitidum* (Wagner, 1912)

Synonyms: *Apion fusconitidum* Wagner, 1912a:23.

Distribution: **Brazil (Rio de Janeiro: Petrópolis).**

References: Blackwelder 1947:829; Kissinger 1959b:250, 332, 338; Wibmer and O'Brien 1986:41.

#### *Trichapion lativentre* (Béguin-Billecocq, 1909)

Synonyms: *Apion lativentre* Béguin-Billecocq, 1909:451.

Distribution: **Brazil (Rio de Janeiro), Paraguay, Argentina, Uruguay. Introduced in South Africa.**

References: Wagner 1912a:32; Blackwelder 1947:829; Kissinger 1959b:250, 369, 374; Wibmer and O'Brien 1986:41; Alonso-Zarazaga 1990:148; Bachmann and Lanteri 2013:210; Alonso-Zarazaga and Wanat 2014:339, 405.

Type material: 1 ind., *Apion lativentre* tipo L. B. B, Rep. Argentina, Prov. Buenos Aires, III-1897, C Bruch (Syntype) (MACN).

Material examined: **Brazil: Paraná (New record):** Curitiba: 6 male, IV-12-1980, 13 male (1 dissected), 19 female (1 dissected), XII-5-1980, Rosado Neto col., W. O. Sousa det. (DZUP).

#### *Trichapion longicorne* (Wagner, 1912)

Synonyms: *Apion longicorne* Wagner, 1912c:107.

Distribution: **Brazil (Amazonas), Bolivia.**

References: Blackwelder 1947:829; Wibmer and O'Brien 1986:42.

#### *Trichapion spinitarse* (Wagner, 1912)

Synonyms: *Apion spinitarse* Wagner, 1912a:18.

Distribution: **Nicaragua, Brazil (Rio de Janeiro).**

References: Blackwelder 1947:830; Kissinger 1959b:-250, 254, 321, 1968:68, 70, 74; Wibmer and O'Brien 1986:43.

#### *Trichapion suffusum* (Wagner, 1912)

Synonyms: *Apion suffusum* Wagner, 1912b:113.

Distribution: **Brazil (Rio de Janeiro).**

References: Blackwelder 1947:830; Wibmer and O'Brien 1986:43.

### Incertae sedis genera

#### Genus *Bothryopteron* Wagner, 1912a:8

Type-species: *Apion grallarium* Sharp, 1891a:83, by subsequent designation Kissinger 1968:29 (examined images of the material available in Kissinger (1968)).

Distribution: **North, Central and South America (Brazil and Bolivia).**

Host plants: unknown.

References: References: Kissinger 1959a:26, 28, 1968:32, 243; O'Brien and Wibmer 1982:20; Wibmer and O'Brien 1986:39; Alonso-Zarazaga 2004:696; Alonso-Zarazaga and Lyal 1998:61.

Material examined: *Bothryopteron* undetermined species.

**Brazil: Maranhão (New record):** Igarape Gurupi - Uma aldeia Araçú: 1 ind., V-1968, B. Malkin col., W. O. Sousa det. (MZSP);

**Mato-Grosso (New record):** Utiariti (325 m), Rio Papagaio: 1 ind., CII-VIII-961, K. Lenko col., W. O. Sousa det. (MZSP),

Chapada dos Guimarães, Chapada Aventura: 1 ind., VIII-23-2016, UmbrellaEnt, A. O. Lira leg., W. O. Sousa det. (LETA), Rio

Caraguata: 3 ind., III-1953, F. Plaumann. Coleção Campos Seabra, W. O. Sousa det. (MNRJ);

**Tocantins (New record):** Dianópolis: 1 ind., I-16-22-1962, J. Bechyné col., W. O. Sousa det. (MZSP);

**Goiás (New record):** Pirineus: 1 ind., II-2-1962, J. Bechyné col., W. O. Sousa det. (MZSP);

**Rio de Janeiro:** Rio de Janeiro, Recreio dos Bandeirantes, Baía da Guanabara: 2 ind., dz 48/60, V-8-60, J. C. M. Carvalho, W. O. Sousa det. (MNRJ);

**Santa Catarina (New record):** Nova Teutônia: 1 ind., 27° 11' B. 52° 23' L, XI-1953, 1 ind. I-1954, Fritz Plaumann col., W. O. Sousa det., (MZSP), 1 ind., XII-

1976, 300-500 m, Fritz Plaumann col., W. O. Sousa det. (DZUP).

#### *Bothryopteron balzani* (Wagner, 1912)

Synonyms: *Apion balzani* Wagner, 1912a:9.

Distribution: **Brazil (Rio de Janeiro), Bolivia.**

References: Blackwelder 1947:828, Wibmer and O'Brien 1986:40.

#### *Bothryopteron binodosum* (Wagner, 1912)

Synonyms: *Apion binodosum* Wagner, 1912a:10.

Distribution: **Brazil (Rio de Janeiro, Bahia).**

References: Wagner 1912c:117; Wibmer and O'Brien 1986:40.

Material examined: **Brazil: Rio de Janeiro:** Represa Rio Grande, Guanabara: 1 ind., X-1960, Coleção Campos Seabra, F. M. Oliveira, W. O. Sousa det. (MNRJ), 1 ind., IX-1961, Coleção M. Alvarenga,

F. M. Oliveira, W. O. Sousa det. (DZUP).

#### *Bothryopteron praestabile* (Wagner, 1914)

Synonyms: *Apion praestabile* Wagner, 1914:159.

Distribution: **Brazil.**

References: Blackwelder 1947:830; Wibmer and O'Brien 1986:43.

#### *Bothryopteron steinbachi* (Wagner, 1912)

Synonyms: *Apion steinbachi* Wagner, 1912a:11.

Distribution: **Brazil (Amazonas), Bolivia.**

References: Blackwelder 1947:830; Wibmer and O'Brien 1986:43.

**Genus *Coelopterapion* Wagner, 1912a**

Type-species: *Apion testaceum* Wagner, 1912a:3, by subsequent designation Kissinger 1968:29.

Distribution: **South America (Brazil and Paraguay).**

Host plants: Euphorbiaceae.

References: Lucas 1920:196; Kissinger 1968:33; O'Brien and Wibmer 1982:20; Wibmer and O'Brien 1986:39; Alonso-Zarazaga 2004:696; Alonso-Zarazaga and Lyal 1998:61.

Material examined: *Coelopterapion* undetermined species. **Brazil: Mato Grosso (New record):** Rio Caraguata: 1 ind., VI-1953, 218° 48' B, 52° 27' L, 400 m, Fritz Plaumann, W. O. Sousa det. (MZSP); **Minas Gerais (New record):** Pouso Alegre: 3 ind., XII-1965, F. S. Pereira col. Sousa, W. O., det. (MZSP); **Espirito Santo:** Sta. Tereza: 1 ind., XII-7-64, C. Elias leg. W. O. Sousa det. (DZUP); **São Paulo (New record):** Botucatu: 3 ind. III-1967, Dirings, W. O. Sousa det. (MZSP), Barueri: 1 ind., X-15-1954, 1 ind., I-22-1961, 1 ind., IV-9-1964, K. Lenko col., W. O. Sousa det. (MZSP), São Paulo, Cantareira: 1 ind. II-17-1960, J. Halik, 3626, W. O. Sousa det. (MZSP), Ferraz de Vasconcelos: 1 ind., XI-19-1971, J. J. Ferraciolli, 3117, Coleção Ferraciolli, W. O. Sousa det. (MZSP), Salesópolis, E. B. da Boracéia: 1 ind., X-2007, Col. Uehara M., W. O. Sousa det. (UFMT), Ilha dos Búzios: 1 ind., X-16-XI-04-963, Exp. Dep. Zool., W. O. Sousa det. (MZSP); **Rio de Janeiro:** Itatiaia, Est. Biológica: 1 ind., XI-29-32, 700m, W. Zikán, W. O. Sousa det. (MNRJ); Rio de Janeiro: Realengo, Guanabara: 1 ind., X-9-1949, M. Alvarenga leg., Ex-coleção M. Alvarenga, W. O. Sousa det. (MZSP), Corcovado, Rio, Guanabara: 1 male (dissected), IX-1958, Alvarenga e Seabra, Ex-coleção M. Alvarenga, W. O. Sousa det. (MZSP), (Corcovado) GB: 1 ind., X-1958, M. Alvarenga, Ex-coleção M. Alvarenga, W. O. Sousa det. (MZSP), Inst. Biolog. Entomologia Agrícola: 1 ind., III-1930, coll Dario Mendes, W. O. Sousa det. (MNRJ); **Paraná (New record):** Londrina: 1 ind., II-14-75, Pe. Moure, Rosado leg, 1 ind., XII-6-8-75, Pe. Moure leg., W. O. Sousa det. (DZUP), Jundiá do Sul, Fazenda Monte Verde: 1 ind., X-5-1986, Lev. Ent. PROFAUPAR, Lampada, W. O. Sousa det. (DZUP).

***Coelopterapion cionoides* (Wagner, 1912)**

Synonyms: *Apion cionoides* Wagner, 1912a:5.

Distribution: **Brazil (Rio de Janeiro, Pernambuco).**

Host plants: *Croton floribundus* (Euphorbiaceae).

References: Blackwelder 1947:828; D'Araujo e Silva 1968:461; Kissinger 1968:33; Wibmer and O'Brien 1986:40.

Material examined: **Brazil: São Paulo (New record):** Barueri: 1 ind., X-7-1954, 97, leg K. Lenko, det. DKiss 1957 (MZSP).

***Coelopterapion fuscipenne* (Wagner, 1912)**

Synonyms: *Apion fuscipenne* Wagner, 1912a:7.

Distribution: **Brazil (Bahia).**

References: Blackwelder 1947:829; Wibmer and O'Brien 1986:41.

***Coelopterapion globulum* (Wagner, 1912)**

Synonyms: *Apion globulum* Wagner, 1912a:6.

Distribution: **Brazil (Rio de Janeiro, Bahia).**

References: Blackwelder 1947:829; Wibmer and O'Brien 1986:41.

***Coelopterapion subulirostre* (Gyllenhal, 1833)**

Synonyms: *Apion subulirostre* Gyllenhal, 1833:266; *Apion daimio* Sharp, 1891b:296 [Kissinger 1989b:24]; *Apion fryi* Wagner, 1912a:4 [Kissinger 1989b:24].

Distribution: **Brazil (Pernambuco, Rio de Janeiro).**

References: Wagner 1910-61; Blackwelder 1947-829, 830; Wibmer and O'Brien 1986-43.

***Coelopterapion testaceum* (Wagner, 1912)**

Synonyms: *Apion testaceum* Wagner, 1912a:3.

Distribution: **Brazil (Rio de Janeiro).**

References: Blackwelder 1947:830; Kissinger 1968:29, 33; Wibmer and O'Brien 1986:43.

Material examined: **Brazil: São Paulo (New record):** Barueri: 1 ind., X-14-1955, K. Lenko col., det Kissinger (MZSP).

**Genus *Mythapion* Kissinger, 2005a:85**

Type-species: *Mythapion trifolium* Kissinger, 2005a:86.

Distribution: **South America (Brazil, Chile, Argentina and Uruguay).**

Host plants: unknown.

References: Kissinger 2005a:85.

Material examined: *Mythapion* undetermined species. **Brazil: Amazonas (New record):** Manaus: ZF-2. Km-19: 1 male, VIII-18-1979, J. Adis e outros, fumigação (fogging), W. O. Sousa det. (INPA).

***Mythapion simplex* (Béguin-Billecocq, 1909)**

Synonyms: *Apion simplex* Béguin-Billecocq, 1909:459.

Distribution: **Brazil (Bahia, Rio de Janeiro), Argentina, Uruguay.**

References: Wagner 1912a:31; Blackwelder 1947:830; Kissinger 2005a:71, 86, 88; Wibmer and O'Brien 1986:43; Bachmann and Lanteri 2013:210.

Material examined: **Argentina:** Buenos Aires: 1 ind., I, 2-y2, 373, Coleção F. Justus Jor. (DZUP), 2 ind., II-1942, Dirings (MZSP).

**Genus *Stenapion* Wagner, 1912a:20**

Type-species: *Apion constricticollae* Sharp, 1890:59, by subsequent designation Kissinger 1968:29 (examined images of the material available in Kissinger (1968)).

Distribution: **North, Central and South America (Trinidad, Brazil, Peru, Bolivia, Paraguay and Argentina).**

Associated plants: Polygonaceae.

References: Wagner 1915:35; Kissinger 1959a:23, 32, 1968:29, 39, 127; O'Brien and Wibmer 1982:20; Wibmer and O'Brien 1986:39; Alonso-Zarazaga 2004-696; Alonso-Zarazaga and Lyal 1999:61.

Type material: 1 ind., *Apion salpingoides* = *mediocre* L. B. B, Rep. Argentina, Prov. Buenos Aires, II-2-1905, C Bruch (Syntype), 1 ind., *Apion contrarium* L. B. B, Rep. Argentina, Prov. Buenos Aires, XI-27-1904, C Bruch (Syntype) (MACN).

Material examined: *Stenapion* undetermined species. **Brazil: Pará (New record):** Camargo-Itaituba, Rio Tapajós: 1 ind., XI-1963, Dirings, W. O. Sousa det. (MZSP); **Mato-Grosso (New record):** Poconé: Pirizal: 4 ind., Armadilha luminosa, Cambará-Borda,

I-15-2000, W. O. Sousa col., W. O. Sousa det. (LETA), Baía do Coqueiro: 1 ind. X-2000 P.4, Gaiola de ADIS, W. O. Sousa col., W. O. Sousa det. (LETA), Barão de Melgaço: 1 ind., Baía9/P03 Litorânea, IX-02-09, Brizzola and Sousa col., W. O. Sousa det. (LETA); **Mato Grosso do Sul (New record)**: Costa Rica: 1 ind., XII-18-87, F. Sta Cruz. Exp. IQ. MZ DZIQUSP, W. O. Sousa det. (MZSP); **Minas Gerais (New record)**: Santa Barbara, Serra da Caraça: 1 ind. XI-23-25-960, Araujo e Martins (MZSP); **Rio de Janeiro**: Represa Rio Grande, Guanabara: 2 ind., VII-1972, F. M. Oliveira, W. O. Sousa det. (DZUP); **Santa Catarina (New record)**: Nova Teutônia: 2 ind., 27° 11' B. 52° 23' L, XI-1953, Fritz Plaumann col., W. O. Sousa, det. (MZSP), 1 ind., XII-1976, 300-500 m, Fritz Plaumann col., W. O. Sousa, det. (DZUP). **Paraguay: Puerto La Esperanza**: La Victoria, Alto-Paraguay: 1 ind. XI-30-XII-3-2006, B. Garcete col., 79 msnm 22° 01'30,7"S - 50° 01'34,9"W, Malaise trap 1 in dense *Schinopsis-Ruprechtia* forest, W. O. Sousa det. (DZUP); **Asuncion**: 2 ind., I-30-22-1985, col. R. T. Bonace, Bahia de Asuncion vegetacion flotante, W. O. Sousa det. (DZUP).

***Stenapion brevinasus* (Wagner, 1912)**

Synonyms: *Apion brevinasus* Wagner, 1912a:20.  
Distribution: **Brazil (Pará: Monte Alegre, S. Antonio-Brasilia), Paraguay, Argentina, Uruguay.**  
References: Wagner 1915:41, 52; Blackwelder 1947:828; Wibmer and O'Brien 1986:40.

***Stenapion carinifrons* (Wagner, 1914)**

Synonyms: *Apion carinifrons* Wagner, 1914:152.  
Distribution: **Brazil.**  
References: Wagner 1915:39, 59; Blackwelder 1947:828; Wibmer and O'Brien 1986:40.

***Stenapion divergens* (Wagner, 1912)**

Synonyms: *Apion divergens* Wagner, 1912a:21.  
Distribution: **Brazil (Rio de Janeiro).**  
References: Blackwelder 1947:829; Wagner 1915:41, 46; Wibmer and O'Brien 1986:41.

***Stenapion heydeni* (Wencker 1863)**

Synonyms: *Apion heydeni* Wencker 1863:181.  
Distribution: **Brazil (Monte Alegre), Bolivia, Paraguay, Argentina.**  
References: Wagner 1910:33, 1915:40, 52; Blackwelder 1947:829; Wibmer and O'Brien 1986:41.

***Stenapion yatahyanum* (Wagner, 1912)**

Synonyms: *Apion yatahyanum* Wagner, 1912c:116.  
Distribution: **Brazil (Goiás: Jatai).**  
References: Wagner 1915:38, 59; Blackwelder 1947:829; Wibmer and O'Brien 1986:44.

**Incertain species ("Apion" in the broadest sense)**

***Apion alocorhinum* Wagner, 1914:141**

Distribution: **Brazil (Goiás: Jatai).**  
References: Blackwelder 1947:828; Wibmer and O'Brien 1986:40.

***Apion ampullula* Gerstaecker 1854:255**

Synonyms: *Apion macromerum* Kirsch, 1874:419 [Wagner 1912a:31].  
Distribution: **Peru, Brazil.**  
References: Wagner 1910:11; Blackwelder 1947:828; Wibmer and O'Brien 1986:40.

***Apion angulatum* Gerstaecker 1854:245**

Distribution: **Brazil (Goiás: Jatai).**  
References: Wagner 1910:11; Blackwelder 1947:828; Wibmer and O'Brien 1986:40.

***Apion angustifrons* Wagner, 1914:162**

Distribution: **Brazil (Rio de Janeiro: Teresópolis).**  
References: Blackwelder 1947:828; Wibmer and O'Brien 1986:40.

***Apion areolatum* Kirsch, 1874:423**

Distribution: **Peru, Brazil (Amazonas, Rio de Janeiro).**  
References: Wagner 1912a:32, Blackwelder 1947:828; Wibmer and O'Brien 1986:40.  
Remarks: examined images of the type of the *A. areolatum* deposited in the Staatliches Museum für Tierkunde, Dresden.

***Apion atronitidum* Wenker, 1863:178**

Distribution: **Brazil (São Paulo).**  
References: Wagner 1910:14; Blackwelder 1947:828; Wibmer and O'Brien 1986:40.

***Apion bicoloratum* Wagner, 1914:138**

Distribution: **Brazil (Pernambuco).**  
References: Blackwelder 1947:828; Wibmer and O'Brien 1986:40.

***Apion brachypterum* Wagner, 1912b:130**

Distribution: **Brazil (Amazonas, Rio de Janeiro).**  
References: Blackwelder 1947:828; Wibmer and O'Brien 1986:40.

***Apion brasilianum* Wagner, 1912a:14**

Distribution: **Brazil (Pernambuco, Rio de Janeiro).**  
References: Blackwelder 1947:828; Wibmer and O'Brien 1986:40.

***Apion brevicorne* Gerstaecker 1854:249**

Distribution: **Brazil.**  
References: Wagner 1910:15; Blackwelder 1947:828; Wibmer and O'Brien 1986:40.  
Material examined: **Brazil: Rio de Janeiro**, Tijuca, Esc. Nac. Agr., Brasil Central: 1 ind., IX-1945, C. de Araujo, 11.308, det. Kissinger (MZSP).

***Apion brevipes* Wagner, 1912a:25**

Distribution: **Brazil (Pernambuco).**  
References: Blackwelder 1947:828; Wibmer and O'Brien 1986:40.

***Apion coeruleosquamosum* Wagner, 1912b:131**

Distribution: **Peru, Bolivia, Brazil (Amazonas).**  
References: Blackwelder 1947:828; Wibmer and O'Brien 1986:40.

***Apion convergens* Wagner, 1912a:28**Distribution: **Brazil (Pernambuco, Rio de Janeiro).**

References: Blackwelder 1947:828; Wibmer and O'Brien 1986:41.

***Apion convexirostre* Wagner, 1912b:135**Distribution: **Brazil (Amazonas).**

References: Blackwelder 1947:828; Wibmer and O'Brien 1986:41.

***Apion dentinasus* Wagner, 1912b:133**Distribution: **Brazil (Rio de Janeiro).**

References: Blackwelder 1947:829; Wibmer and O'Brien 1986:41.

***Apion desbordesii* Béguin-Billecocq, 1911:131**Distribution: **Brazil (Ceará), Argentina.**

References: Wagner 1912a:31; Blackwelder 1947:829; Wibmer and O'Brien 1986:41; Bachmann and Lanteri 2013:209.

Material examined: Syntype: 1 female, *Apion desbordesii* L. B. B, Rep. Argentina, Prov. Cordoba, 190, C Bruch (MACN).***Apion ensirostre* Gerstaecker, 1854:251**Synonyms: *Apion columbianum* Faust, 1894:319 [Wagner 1912a:31].Distribution: **Colombia, Bolivia, Brazil.**

References: Wagner 1910:19, 1912c:118; Blackwelder 1947:829; Wibmer and O'Brien 1986:41.

Material examined: **Brazil: Mato Grosso do Sul (New record):** Corumbá, Porto Esperança: 1 ind., XII-7-1960, K. Lenkko col., 129, det. Kissinger (MZSP).***Apion exophthalmum* Wencker, 1863:179**Distribution: **Brazil.**

References: Wagner 1910:26; Blackwelder 1947:829; Wibmer and O'Brien 1986:41.

***Apion fulvicorne* Wagner, 1912a:29**Distribution: **Brazil (Rio de Janeiro).**

References: Blackwelder 1947:829; Wibmer and O'Brien 1986:41.

***Apion gilvirostre* Wagner, 1912a:26**Distribution: **Brazil (Amazonas).**

References: Blackwelder 1947:829; Wibmer and O'Brien 1986:41.

***Apion inaequale* Gyllenhal, 1833:256**Distribution: **Brazil.**

References: Wagner 1910:34; Blackwelder 1947:829; Wibmer and O'Brien 1986:41.

***Apion informe* Béguin-Billecocq, 1911:131**Distribution: **Bolivia, Brazil (Rio de Janeiro).**

References: Wagner 1912a:32, 1912c:117; Blackwelder 1947:829; Wibmer and O'Brien 1986:41.

***Apion ingratum* Béguin-Billecocq, 1909:461**Distribution: **Brazil (Amazonas), Argentina.**

References: Wagner 1912a:32; Blackwelder 1947:829; Wibmer and O'Brien 1986:41; Bachmann and Lanteri 2013:210.

Type material: 1 ind., *Apion ingratum* L. B. B, Rep. Argentina, Prov. Buenos Aires, 190, C. Bruch (Syntype) (MACN).***Apion latifrons* Gerstaecker, 1854:246**Distribution: **Brazil.**

References: Wagner 1910:37; Blackwelder 1947:829; Wibmer and O'Brien 1986:41.

***Apion lividipes* Wencker, 1863:180**Distribution: **Brazil.**

References: Blackwelder 1947:829; Wibmer and O'Brien 1986:42.

***Apion longitarse* Wagner, 1914:141**Distribution: **Brazil.**

References: Blackwelder 1947:829; Wibmer and O'Brien 1986:42.

***Apion longulum* Gerstaecker, 1854:239**Distribution: **Brazil.**

References: Wagner 1910:39; Blackwelder 1947:829; Wibmer and O'Brien 1986:42.

***Apion luridipes* Wagner, 1912a:24**Distribution: **Brazil.**

References: Blackwelder 1947:829; Wibmer and O'Brien 1986:42.

***Apion luteipes* Kirsch, 1874:419**Distribution: **Peru, Brazil.**

References: Wagner 1910:39; Blackwelder 1947:829; Wibmer and O'Brien 1986:42.

Remarks: examined images of the type of the *A. luteipes* deposited in the Staatliches Museum für Tierkunde, Dresden.***Apion macrostylum* Wagner, 1914:144**Distribution: **Brazil (Rio de Janeiro: Rio de Janeiro; Minas Gerais: Matusinho, Caraça).**

References: Blackwelder 1947:829; Wibmer and O'Brien 1986:42.

***Apion nigroaeneum* Gerstaecker, 1854:255**Distribution: **Brazil.**

References: Wagner 1910:43; Blackwelder 1947:829; Wibmer and O'Brien 1986:42.

***Apion nigrosuturatum* Béguin-Billecocq, 1909:459**Distribution: **Brazil (São Paulo), Argentina.**

References: Wagner 1912:32; Blackwelder 1947:829; Wibmer and O'Brien 1986:42.

***Apion novaeteutoniae* Voss, 1959b:315 [in footnote]**Distribution: **Brazil (Nova Teotonia).**

References: Weidner 1976:147; Wibmer and O'Brien 1986:42.

Remarks: examined images of the holotype, 1 female of the *A. novaeteutoniae* deposited in the Zoological Museum, Hamburg.***Apion opacum* Kirsch, 1874:420**Distribution: **Peru, Brazil.**

References: Wagner 1910:45; Blackwelder 1947:830; Wibmer and O'Brien 1986:42.

Remarks: examined images of the type of the *A. opacum* deposited in the Staatliches Museum für Tierkunde, Dresden.***Apion parviceps* Wagner 1914:160**Distribution: **Brazil.**

References: Blackwelder 1947:830; Wibmer and O'Brien 1986:42.

***Apion parvulum* Gerstaecker, 1854:248**Synonyms: *Apion motabile* Faust, 1894:317 [Wagner, 1910:47].Distribution: **West Indies, Colombia, Venezuela, Brazil.**

References: Wagner 1910:47, 1912a:31; Blackwelder 1947:830; Wibmer and O'Brien 1986:42.

***Apion periscelis* Gyllenhal, 1839:391**Synonyms: *Apion strangulatum* Kirsch, 1874:413 [Wagner, 1910:47].Distribution: **Peru, Bolivia, Brazil.**

References: Wagner 1910:47, 1912a:31; Blackwelder 1947:830; Wibmer and O'Brien 1986:42.

Material examined: **Brazil: Minas Gerais:** Pouso Alegre: 1 ind., IX-962, F. S. Pereira col., 139, det. Kissinger (MZSP).***Apion phaseoli* Voss, 1958:921**Distribution: **Brazil (Bahia).**

References: Weidner 1976:147; Wibmer and O'Brien 1986:43.

Remarks: examined images of the paratype of the *A. phaseoli* deposited in the Zoological Museum, Hamburg.***Apion pseudampullula* Voss, 1940:12**Synonyms: *Apion pseudampulla* [Bondar 1950:452, error].Distribution: **Brazil.**

Host plants: Leguminosae.

References: D'Araujo e Silva 1968:461; Wibmer and O'Brien 1986:43.

Material examined: 2093: 2 ind., Voss (MNRJ).

***Apion pulverulentum* Wencker, 1863:177**Distribution: **Brazil.**

References: Wagner 1910:51; Blackwelder 1947:830; Wibmer and O'Brien 1986:43.

***Apion pygmaeum* Wagner, 1912a:29**Distribution: **Brazil (Rio de Janeiro).**

References: Blackwelder 1947:830; Wibmer and O'Brien 1986:43.

***Apion retusipenne* Wagner, 1912a:28**Distribution: **Brazil.**

References: Blackwelder 1947:830; Wibmer and O'Brien 1986:43.

***Apion rubrirostre* Wagner, 1912a:13**Distribution: **Brazil (Rio de Janeiro).**

References: Blackwelder 1947:830; Wibmer and O'Brien 1986:43.

***Apion rubronigrum* Wagner, 1912b:132**Distribution: **Brazil (Bahia, Rio de Janeiro).**

References: Blackwelder 1947:830; Wibmer and O'Brien 1986:43.

***Apion sesbaniae* Voss, 1958:919**Distribution: **Brazil (Rio Grande do Sul: Porto Alegre).**

References: Weidner 1976:147; Wibmer and O'Brien 1986:43.

Remarks: Examined images of the paratype, 1 female of the *A. sesbaniae* deposited in the Zoological Museum – Hamburg.***Apion subnudum* Wagner, 1912a:21**Distribution: **Brazil (Goiás: Jataí), Bolivia.**

References: Blackwelder 1947:830; Wibmer and O'Brien 1986:43.

***Apion tropidorrhynchum* Wagner, 1914:143**Distribution: **Brazil.**

References: Blackwelder 1947:830; Wibmer and O'Brien 1986:44.

***Apion tucumanense* Béguin-Billecocq, 1909:458**Distribution: **Brazil (Rio de Janeiro), Bolivia, Argentina.**

References: Wagner 1912c:118; Blackwelder 1947:830; Wibmer and O'Brien 1986:44; Bachmann and Lanteri 2013:211.

Type material: 1 female, *Apion tucumanense* L. B. B, Rep. Argentina, Prov. Tucuman, I-20-1904, C. Bruch (Syntype) (MACN).***Apion undulipenne* Wagner, 1912a:11**Distribution: **Brazil (Bahia).**Host plants: *Cassia apoucuita* (Fabaceae).

References: Voss 1940:12; Blackwelder 1947:830; D'Araujo e Silva 1968:461; Wibmer and O'Brien 1986:44.

Material examined: **Brazil: Bahia:** 5 ind., 1977, G. Bondar leg., Voss deter., 5 ind., 1977 (MNRJ).***Apion wingelmulleri* Wagner, 1912a:14**Distribution: **Brazil (Rio de Janeiro).**

References: Blackwelder 1947:831; Wibmer and O'Brien 1986:44.

***Apion xanthopus* Gyllenhal, 1839:375**Synonyms: *Apion sulcipenne* Gyllenhal, 1839:401 [Wagner, 1912a:31]).Distribution: **Brazil.**

References: Wagner 1910:61,67, 1912a:31; Blackwelder 1947:831; Wibmer and O'Brien 1986:44.

***Apion xanthorhynchum* Wagner, 1912a:27**Distribution: **Brazil.**

References: Blackwelder 1947:831; Wibmer and O'Brien 1986:44.

***Apion zikani* Heller, 1922:52**

Distribution: **Brazil (Minas Gerais: Passa Quatro).**

Host plants: *Dalbergia glaucescens* (Mart. ex. Benth), *D. foliolosa* (Benth) (Fabaceae).

References: Blackwelder 1947:831; Costa-Lima 1956:126; D'Araujo e Silva 1968:461; Wibmer and O'Brien 1986:44.

Type material: 2 ind., *Apion zikani* Heller, Para, S<sup>o</sup>c Dario Mendes, Passa Quatro Minas Zikan (Cotype) (MNRJ).

**Discussion**

We recognize 10 genera of Brazilian Apioninae, one of which is a first record for Brazil (*Chrysapion*) and which appears to be restricted to northeastern Brazil. Three genera are widely distributed in the New World: *Alocentron*, *Coelocephalapion* and *Trichapion*. The latter two genera are found throughout Brazil. Five genera (*Apionion*, *Bothropteron*, *Coelopterapion*, *Neapion* and *Stenapion*) have more restricted distributions in South America (Alonso-Zarazaga and Lyal 1999) but also are found throughout Brazil. *Coelopterapion* is the only genus with most species subendemic to Brazil (Kissingner 1968) and whose distributions are restricted to the Cerrado and Atlantic Forest. The recently described *Mythapion* is monospecific and found in Argentina, Brazil and Uruguay (Wibmer and O'Brien 1986; Kissingner 2005a), from the Amazon to the Pampas of South America.

Only 86 species of Apioninae from Brazil were described from 1833 to 1959, mostly by Hans Wagner, with the recent addition of two new species (De Sousa and Ribeiro-Costa 2018). Yet, Alonso-Zarazaga (pers. comm. 2017) reported that Don Whitehead estimated that the number of Brazilian Apioninae species is closer to 1,500, most of which are endemic. Alonso-Zarazaga and Wanat (2014) suggested 800 species for the Neotropical region, which is likely to be a large underestimation. More than 50 years have passed since the last Brazilian species were described. Thus, our descriptions and keys provide a new landmark for the taxonomy of the Apioninae in South America. Brazil is among the most biodiverse countries with many hotspots (Aleixo *et al.* 2010; Marques and Lamas 2006; Myers *et al.* 2000) and so the Apioninae is a very promising group and much more promising comparing parasitoid hymenopterans wasp or dipterans in South America.

We identified ca 230 especimens to genus or species. Taxonomic impediments, such as brief, incomplete, original descriptions, often without illustrations that would facilitate species recognition, prevent identification at the species level for most. Additionally, many small specimens apparently comprise a large number of morphotypes, but each morphotype included only a few specimens without marked sexual dimorphism. Thus, many specimens remain to be identified.

Upon examination of the Apioninae in Brazilian collections we found a large quantity of unidentified material, many specimens of which are only labelled *Apion* sp., while others were mixed Apioninae. We found no specimen that was identified with any generic name other than *Apion*, and there were no subgenera. Hence the challenge of this study, in which we provide a list for the Brazilian taxa and place them in genera and subgenera. All identification was through comparison with relevant diagnostic characters of the original descriptions, with the addition of currently available types or images of type material or with material previously identified by specialists.

External morphology and genitalia of males, both of which are fundamental for identification of taxa in the Apioninae, are described in Alonso-Zarazaga (1989, 1990, 2004) and Alonso-Zarazaga & Wanat (2014). Also, efficient use of the key requires the separation of morphotypes and identification of the sex of each morphotype. Species identification based only on females is essentially impossible and so males are required. For that end, an adequate collection with many specimens that can be dissected to identify sex is required (Alonso-Zarazaga 2004). If dissection is not possible, secondary sexual dimorphism must be identified and which can be observed in the rostrum (shorter in males, Fig. 18, wider and generally more coarsely sculptured and pubescent than in females, Fig. 19; Anderson & Kissinger 2002). Some males have mucro in at least one pair of tibiae, or the first tarsomere of one of the legs is modified as plantar spines (Fig. 26). The apical margin of ventrite 5 is truncated with a part of the pygidium being visible externally, or the pygidium is formed by the 8th tergite (7th in females, Fig. 24). In females, the legs have no special characters and ventrite 5 (Fig. 25) has a rounded margin (Alonso-Zarazaga 1990). Rarely, ventrite 5 of females (in some species) may have a median glabrous area or a median sulcus (Alonso-Zarazaga and Wanat 2014), such as in *Trichapion* sp. (Fig. 25).

Hundreds of specimens in South American collections are still waiting to be studied, many of them likely to be new taxa. Thus, these specimens may be among the 10 genera comprising the key, or they may be unknown genera or even be among the non-monophyletic hyperdiverse genera (*Trichapion* and *Coelocephalapion*). Thus, they demonstrate the potential of the group for future systematic research at all taxonomic levels. Additionally, studies must be carried out to recover monophyly of the genera and tribes and to clarify relationships of *incertae sedis*, all based on morphology, molecular, biogeography and host plant associations.

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**Author Contributions**

Wesley Oliveira de Sousa: substantial contribution in the concept and design of the study; data collection; analysis and interpretation; manuscript preparation and critical revision, adding intellectual content.

Cibele Stramare Ribeiro-Costa: contribution in the concept and design of the study; manuscript preparation and critical revision, adding intellectual content.

Germano Henrique Rosado-Neto: contribution in the concept and design of the study and critical revision, adding intellectual content.

## Conflicts of interest

The author(s) declare(s) that they have no conflict of interest related to the publication of this manuscript.

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