

## Checklist of South American Cenozoic Insects

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### ABSTRACT

This checklist is a compilation of literature about South American Cenozoic insects. The list include 73 named insects belonging to 11 orders. Records are from the Oligocene and Pleistocene of south-eastern Brazil, late Paleocene of north-western Argentina and Paleocene-Eocene of southern Argentina.

*Keywords:* Fossil insects. Cenozoic. Checklist. South America.

### RESUMEN

Esta lista es una compilación de literatura acerca de los insectos del Cenozoico de América del Sur. La lista contiene 73 insectos nominados pertenecientes a 11 órdenes. Los hallazgos provienen del Oligoceno y Pleistoceno del sudeste de Brasil, del Paleoceno tardío del noroeste de Argentina y del Paleoceno-Eoceno del sur de Argentina.

*Palabras clave:* Insectos fósiles. Cenozoico. Lista de especies nominadas. América del Sur.

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### INTRODUCTION

South American Cenozoic insects are poorly known, since there are only 73 named species belonging to 11 orders. Findings come from three distinct regions of the subcontinent: south-eastern Brazil, north-western and south Argentina. In the Oligocene of Southeast Brazil, 31 species were discovered; 29 from Tremembé Formation, one from Fonseca Formation, one from Pirassununga Formation and other from the Pleistocene. In Northwest

Argentina 38 species were described from the late Paleocene Maíz Gordo Formation, whereas in southern Argentina, one and two species were discovered from the Paleocene-Eocene Laguna del Hunco and Ventana Formations, respectively. The aim of this work is to list the described genera and species from the South American Cenozoic arranged by orders and families. This checklist also provides information about the type localities, stratigraphic levels and ages; some remarks are also included. To emphasize the dubious nature of some generic as-

signments, these names have been enclosed in quotation marks.

In the present paper, we follow the wing venation nomenclature of Kukalová-Peck (1991).

#### SYSTEMATIC PALEONTOLOGY

**Order:** Odonata FABRICIUS

**Superfamily:** Libelluloidea RAMBUR

**Family:** Palaeomacromiidae PETRULEVICIUS,  
NEL AND MUZÓN

GENUS *Palaeomacromia* PETRULEVICIUS, NEL  
AND MUZÓN

*Palaeomacromia multicellulata* PETRULEVICIUS,  
NEL AND MUZÓN 1999: pp. 678-680, figs. 1-2.

*Type locality:* stratigraphic level and age: La Mendieta, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on a 3/4 forewing.

**Order:** Blattodea LATREILLE

**Family:** Blattidae STEPHENS

GENUS "*Amazonina*"HEBARD

*Amazonina purpurae* PINTO 1991: p. 90, figs. 3-4.

*Type locality and age:* Mateus Leme County, Minas Gerais, Brazil. Pleistocene?.

*Remarks:* Age attribution based on vegetal remains.

**Order:** Orthoptera OLIVIER

**Superfamily:** Grylloidea LATREILLE

GENUS "*Gryllus*"LINNÉ

*Gryllus vociferans* COCKERELL 1925b: p. 712,  
fig. 2.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on a basal fragment of tegmina. This specimen was placed by Cockerell (1925b) in a broad sense into the genus *Gryllus* LINNÉ, then Cockerell (1936) allocated the species to the collective group *Gryllites* GERMAR. New material collected from the same formation presents similarities with this specimen, both probably belonging to a new genus. However the narrow costal area and subcostal area without cross veins removes this species of the genus *Gryllus* (Martins-Neto and Petrulevicius, in prep.).

GENUS *Gryllites* GERMAR

*Gryllites vocalis* COCKERELL 1936: p. 9, fig. 19.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on a basal fragment of tegmina. This specimen was allocated by Cockerell (1925b) to the genus *Gryllites* GERMAR. The species is available only for the purposes of the Principle of Homonymy (ICZN 1985-41, Art. 20). New material collected from the same formation presents similarities with this specimen, both probably belonging to a new genus (Martins-Neto and Petrulevicius, in prep.).

**Order:** Dermaptera DE GEER

**Family:** Labiduridae VERHOEFF

GENUS "*Carcinophora*"SCUDDER

*Psalis pachyura* COCKERELL 1925b: p. 712,  
fig. 3.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on forceps. Cockerell (1925b) placed the species into the genus *Psalis* 'in a broad sense', a latter synonymous of *Carcinophora* SCUDDER (Carpenter, 1992).

**Order:** Isoptera BRULLÉ

**Family:** Mastotermitidae DESNEUX

GENUS *Spargotermes* EMERSON

*Spargotermes costalimai* EMERSON 1965: pp. 19-24, fig. 4.

*Type locality; stratigraphic level and age:* Minas Gerais State, Brazil; Fonseca Basin, Fonseca Formation, Oligocene.

*Remarks:* Species description is based on isolated wings. Emerson (1965) mentioned an Eocene age for the remains, updated by Martins-Neto (1997b) to the Oligocene.

**Order:** Hemiptera LINNÉ  
**Suborder:** Homoptera LEACH  
**Family:** Cercopidae WESTWOOD

GENUS *Parafitopterix* MARTINS-NETO

*Parafitopterix duateae* MARTINS-NETO 1989: pp. 376-378, pls. I A-B, fig. 2 J.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Paraná Basin, Pirassununga Formation, Oligocene.

*Remarks:* Species description is based on a tegmina.

**Superfamily:** Fulgoroidea LATREILLE

GENUS *Hipocixius* COCKERELL

*Hipocixius oblitescens* COCKERELL 1926a: pp. 501-502, fig. 1.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on a middle part of a tegmina. Placed in Fulgoroidea (“apparently related to Cixiidae”) by Cockerell (1926a) and in Homoptera uncertain by Carpenter (1992). This species could not be assigned to any family of Fulgoroidea because of the lack of the apical part of CuP and AA<sub>3+4</sub>, but seems not to be related to Cixiidae because the AA<sub>3+4</sub> seems to finish at the same time with CuP.

**Family:** Flatidae SPINOLA

GENUS “*Ormenis*” STÅL

*Ormenis devinctus* COCKERELL 1926a: pp. 502-503, fig. 2.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on a costal and distal tegmina fragment.

**Family:** Aetalionidae *sensu* EVANS

GENUS *Tremembaetalion* MARTINS-NETO

*Tremembaetalion mimtum* MARTINS-NETO 1998a: p. 61, fig. 1 N.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen without legs.

**Family:** Cicadellidae LATREILLE

GENUS *Taubocicadellina* MARTINS-NETO

*Taubocicadellina breviptera* MARTINS-NETO 1998a: p. 60, fig. 1 B.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen without legs.

GENUS *Tremembellina* MARTINS-NETO

*Tremembellina micrcellata* MARTINS-NETO 1998a: p. 60, fig. 1 M.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen without legs.

GENUS *Trulaxia* MARTINS-NETO

*Trulaxia primula* MARTINS-NETO 1998a: p. 60, fig. 1 L.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen without legs.

**Suborden:** Heteroptera LATREILLE  
**Family:** Veliidae DOUGLAS AND SCOTT

GENUS *Paleohebrus* MARTINS-NETO

*Paleohebrus tremembeensis* MARTINS-NETO 1997b: pp. 67-68, pl. B, fig. 2.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen. Originally described as Hebridae by Martins-Neto (1997b).

**Family:** Pentatomidae LEACH

GENUS *Taubatecoris* MARTINS-NETO

*Taubatecoris quadntiformis* MARTINS-NETO 1997b: p. 67, pl. A, fig. 1.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen.

**Family:** Corixidae LEACH

GENUS *Taubarixa* MARTINS-NETO

*Taubarixa macocelata* MARTINS-NETO 1998a: p. 59, pl. 1 A, fig. 1 A.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen without legs.

GENUS *Tauborixella* MARTINS-NETO

*Tauborixella santosae* MARTINS-NETO 1998a: p. 59, pl. 1 B, figs. 1 C-G.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen without legs.

GENUS *Tauborixiellopsis* MARTINS-NETO

*Tauborixiellopsis bεviclavata* MARTINS-NETO 1998a: p. 60, pl. 1 C, fig. 1 H-K.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen.

**Family:** Coreidae LEACH

GENUS “*Corizus*” FALLÉN

*Corizus deflagratus* COCKERELL 1926a: p. 503, fig. 3.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on a nearly complete (ventral view) specimen.

**Order:** Coleoptera LINNÉ  
**Family:** Carabidae LATREILLE

GENUS *Tremembecarabus* MARTINS-NETO

*Tremembecarabus rotundus* MARTINS-NETO 1998a: p. 61, pl. 1 D, fig. 2 A.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen without head and legs.

**Family:** Psephenidae LACORDAIRE

GENUS *Psephenella* MARTINS-NETO

*Psephenella ferrera* MARTINS-NETO 1998a: p. 62, pl. 2 B, fig. 2 B.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen.

**Family:** Meloidae GUILLENHALL

GENUS *Microbasis* MARTINS-NETO

*Microbasis longinota* MARTINS-NETO 1998a: p. 62, pl. 2 A, fig. 2 C.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen.

**Family:** uncertain

GENUS *Carabites* HEER

*Carabites harringtoni* COCKERELL 1936: p. 4; fig. 2.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* This specimen was allocated by Cockerell (1925b) to the collective group Carabites HEER 1852. The species is available only for the purposes of the Principle of Homonymy (ICZN 1985-41, Art. 20). At present knowledge the species could not be assigned to any family because of the lack of the synapomorphic characters in the specimen.

*Carabites schueli* COCKERELL 1926b: p. 321, fig. 11.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on an isolated elytra. Same nomenclatural and taxonomic considerations as in Carabites harringtoni COCKERELL.

GENUS *Cerambycites* COCKERELL

*Cerambycites wilmatae* COCKERELL 1925a: p. 712, fig. 1.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on an isolated elytra. This specimen was allocated by Cockerell (1925b) to the collective group Cerambycites. The species is available only for the purposes of the Principle of Homonymy (ICZN 1985-41, Art. 20). At present knowledge the species could not be assigned to any family because of the lack of the synapomorphic characters in the specimen.

GENUS *Chrysomelites* HEER

*Chrysomelites danielis* COCKERELL 1926b: p. 321, fig. 10.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on an isolated elytra. This specimen was allocated by Cockerell (1925b) to the collective group Chrysomelites HEER. The species is available only for the purposes of the Principle of Homonymy (ICZN 1985-41, Art. 20). At present knowledge the species could not be assigned to any family be-

cause of the lack of the synapomorphic characters in the specimen.

#### GENUS *Curculionites* HEER

*Curculionites angustior* COCKERELL AND WAGNER, Cockerell, 1936: p. 6, fig. 11.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on an isolated elytra. This specimen was allocated by Cockerell (1925b) to the collective group *Curculionites* HEER. The species is available only for the purposes of the Principle of Homonymy (ICZN 1985-41, Art. 20). At present knowledge the species could not be assigned to any family because of the lack of the synapomorphic characters in the specimen.

*Curculionites epistictus* COCKERELL AND WAGNER, Cockerell, 1936: p. 8, fig. 8.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Same nomenclatural and taxonomic considerations as in *Curculionites angustior* COCKERELL AND WAGNER.

*Curculionites eustictus* COCKERELL AND WAGNER, Cockerell, 1936: p. 8, fig. 9.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Same nomenclatural and taxonomic considerations as in *Curculionites angustior* COCKERELL AND WAGNER.

*Curculionites harringtoni* COCKERELL 1925a: p. 4, pl. 1, fig. 5.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Same nomenclatural and taxonomic considerations as in *Curculionites angustior* COCKERELL AND WAGNER.

*Curculionites jujuyensis* COCKERELL 1925a: p. 4, pl. 1, fig. 6.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Same nomenclatural and taxonomic considerations as in *Curculionites angustior* COCKERELL AND WAGNER.

*Curculionites latiusculus* COCKERELL AND WAGNER, Cockerell, 1936: p. 6, fig. 8.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Same nomenclatural and taxonomic considerations as in *Curculionites angustior* COCKERELL AND WAGNER.

*Curculionites magdalinus* COCKERELL AND WAGNER, Cockerell, 1936: p. 9, fig. 6.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Same nomenclatural and taxonomic considerations as in *Curculionites angustior* COCKERELL AND WAGNER.

*Curculionites megastictus* COCKERELL AND WAGNER, Cockerell, 1936: p. 9, fig. 17.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Same nomenclatural and taxonomic considerations as in *Curculionites angustior* COCKERELL AND WAGNER.

*Curculionites microstictus* COCKERELL AND WAGNER, Cockerell, 1936: p. 8, fig. 10.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Same nomenclatural and taxonomic considerations as in *Curculionites angustior* COCKERELL AND WAGNER.

***Curculionites pamstictus* COCKERELL AND WAGNER**, Cockerell, 1936: p. 9; fig. 13.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Same nomenclatural and taxonomic considerations as in *Curculionites angustior* COCKERELL AND WAGNER.

***Curculionites stebingeri* COCKERELL** 1926: pp. 318-319, fig. 6.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Same nomenclatural and taxonomic considerations as in *Curculionites angustior* COCKERELL AND WAGNER.

***Curculionites sunchalicus* COCKERELL AND WAGNER**, Cockerell, 1936: p. 6, fig. 14.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Same nomenclatural and taxonomic considerations as in *Curculionites angustior* COCKERELL AND WAGNER.

***Curculionites wielandi* COCKERELL** 1925a: p. 5, pl. 1, fig. 8.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Same nomenclatural and taxonomic considerations as in *Curculionites angustior* COCKERELL AND WAGNER.

#### GENUS *Elaterites* HEER

***Elaterites bruchi* COCKERELL** 1926b: pp. 320-321, fig. 9.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on an isolated elytra. This specimen was allocated by Cockerell (1925b) to the collective group *Elaterites* HEER. Carpenter (1992) placed the species in Coleoptera suborder and family uncertain. The species is available only for the purposes of the Principle of Homonymy (ICZN 1985-41, Art. 20). At present knowledge the species could not be assigned to any family because of the lack of the synapomorphic characters in the specimen.

***Elaterites micostictus* COCKERELL** 1926b: p. 320, fig. 8.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Same nomenclatural considerations as *Elaterites bruchi* COCKERELL.

#### GENUS *Otiorhynchites* HAUPT

***Otiorhynchites aterrimus* COCKERELL** 1925a: p. 3, pl. 1, fig. 1.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on an isolated elytra. This specimen was allocated by Cockerell (1925b) to the genus *Otiorhynchites* HAUPT. The species is available only for the purposes of the Principle of Homonymy (ICZN 1985-41, Art. 20). At present knowledge the species could not be assigned to any family because of the lack of the synapomorphic characters in the specimen.

***Otiorhynchites crassus* COCKERELL** 1936: p. 6, fig. 12.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Same nomenclatural and taxonomic considerations as in *Otiorhynchites aterrimus* COCKERELL.

#### GENUS *Tenebrionites* COCKERELL

*Tenebrionites inclinans* COCKERELL 1925a: p. 5, pl. 1, fig. 7.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on an isolated elytra. This specimen was allocated by Cockerell (1925b) to the collective group *Tenebrionites* COCKERELL. Carpenter (1992) placed the species into Tenebrionidae. The species is available only for the purposes of the Principle of Homonymy (ICZN 1985-41, Art. 20). At present knowledge the species could not be assigned to any family because of the lack of the synapomorphic characters in the specimen.

#### Species doubtfully assigned to recent genera

##### GENUS “*Anthicus*” PAYKULL

*Anthicus* (s. l.) *sepultulus* COCKERELL 1926b: p. 318, fig. 5.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on a nearly complete specimen without antennae and legs. Allocated by Cockerell (1926b) to the genus *Anthicus* in a broad sense. Carpenter (1992) placed this species in “recent genera of Coleoptera with doubtfully assigned species”.

##### GENUS “*Anthonomus*” GERMAR

“*Anthonomus*” (?) *sunchalensis* COCKERELL 1925a: p. 4, pl. 1, figs. 3-4.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on an isolated elytra. Carpenter (1992) placed this species in “recent genera of Coleoptera with doubtfully assigned species”.

##### GENUS “*Cossonus*” CLAIRVILLE AND SCHELLEMBERG

*Cossonus devoratus* COCKERELL 1925a: p. 3, pl. 1, fig. 2.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on an isolated elytra. Carpenter (1992) placed this species in “recent genera of Coleoptera with doubtfully assigned species”.

##### GENUS “*Cryptophagus*” HERBST

*Cryptophagus sunchalensis* COCKERELL 1926b: p. 317, fig. 4.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on a nearly complete specimen without legs.

##### GENUS “*Haruspex*”

*Haruspex* (?) *defectus* COCKERELL 1926a: p. 503, fig. 4.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on an isolated elytra. Carpenter (1992) placed this species in “recent genera of Coleoptera with doubtfully assigned species”.

##### GENUS “*Lebia*” LATREILLE



*Lebia harrelli* COCKERELL 1936: pp. 4-5, fig. 3.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on an isolated elytra. Carpenter (1992) placed this species in “recent genera of Coleoptera with doubtfully assigned species”.

#### GENUS “*Podabrus*” WESTWOOD

*Podabrus* (?) *santaritensis* COCKERELL 1936: p. 5, fig. 5.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on an isolated elytra. Carpenter (1992) placed this species in “recent genera of Coleoptera with doubtfully assigned species”.

#### GENUS “*Trichodes*” HERBST

*Trichodes stebingeri* COCKERELL 1936: p. 5, fig. 4.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on an isolated elytra. Carpenter (1992) placed this species in “recent genera of Coleoptera with doubtfully assigned species”.

**Order:** Diptera LINNÉ

**Family:** Hybotidae *sensu* CHVÁLA

**Subfamily:** Trachydromiinae MEIGIN

GENUS *Archaeodrapetiops* MARTINS-NETO, VIEIRA, KUCERA-SANTOS AND FRAGOSO

*Archaeodrapetiops* (?) *elongata* MARTINS-NETO, VIEIRA, KUCERA-SANTOS AND FRAGOSO 1992: pp. 37-38, pl. 2, figs. 3-4, figs. 1 E, 2 C.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen including chaetotaxy.

*Archaeodrapetiops mezzalini* MARTINS-NETO, VIEIRA, KUCERA-SANTOS AND FRAGOSO 1992: p. 36, pl. 1, figs. 1-3, 6, figs. 1 G, 2 F.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen.

*Archaeodrapetiops nefra* MARTINS-NETO, VIEIRA, KUCERA-SANTOS AND FRAGOSO 1992: pp. 34-36, pl. 1, figs. 4-5, 7; figs. 1 A, 2 E.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen.

*Archaeodrapetiops transversa* MARTINS-NETO, VIEIRA, KUCERA-SANTOS AND FRAGOSO 1992: p. 37, pl. 1, fig. 8; pl. 2, figs. 5-6; figs. 1 C, 2 H.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen.

**Subfamily:** Hybotinae *sensu* CHVÁLA

GENUS *Eternia* MARTINS-NETO, VIEIRA, KUCERA-SANTOS AND FRAGOSO

*Eternia papawroi* MARTINS-NETO, VIEIRA, KUCERA-SANTOS AND FRAGOSO 1992: p. 40, pl. 2, fig. 2; pl. 3, figs. 2, 4; figs. 1 F, 2 I.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen.

GENUS *Tremabella* MARTINS-NETO, VIEIRA, KUCERA-SANTOS AND FRAGOSO

*Tremabella gacilis* MARTINS-NETO, VIEIRA, KUCERA-SANTOS AND FRAGOSO 1992: pp. 38-39, pl. 3, figs. 1, 3; figs. 1 B, 2 H.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen.

**Family:** Tabanidae LEACH

GENUS *Tabanus* LINNÉ

*Tabanus tremembeensis* MARTINS-NETO 1997a: pp. 53-54, pl. 1, fig. 1.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen.

**Order:** Trichoptera KIRBY

**Family:** Limnephilidae *sensu* FLINT

GENUS *Indusia* BOSC

*Indusia suguioi* MARTINS-NETO 1989: pp. 378-379, pl.1, fig. F.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a caddis-case.

**Family:** uncertain

GENUS “*Molanna*” CURTIS

*Molanna* (?) *derosa* COCKERELL 1925a: pp. 2-3, fig. 1.

*Type locality; stratigraphic level and age:* Sunchal, Jujuy Province, Argentina; Maíz Gordo Formation, late Paleocene.

*Remarks:* Species description is based on a forewing fragment. Placed in Molannidae by Cockerell (1925a).

**Order:** Lepidoptera LINNÉ

**Family:** Nepticulidae *sensu* OPLER

GENUS “*Nepticula*” OPLER

*Nepticula* (?) *almeidae* MARTINS-NETO 1989: p. 381, pl. 1, fig. C.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on leaf-mines. Generic attribution was merely tentative.

**Family:** Gracillaridae *sensu* OPLER

GENUS “*Phyllonoryctes*” HUBNER

*Phyllonoryctes* (?) *oliveirae* MARTINS-NETO 1989: pp. 381-382, pl. 1, fig. D.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on leaf-mines. Generic attribution was merely tentative.

**Family:** Cossidae LEACH

GENUS *Kleopatra* MARTINS-NETO

*Kleopatra nemogypsia* MARTINS-NETO 1998b: p. 76, pl. 1, fig. B; figs. 1 C, 2.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a forewing.

***Kleopata noctodiva*** MARTINS-NETO 1998b: p. 75, pl. 1, figs. B; figs. 1 A, 2.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a forewing.

**Family:** Pyralidae LINNÉ  
**Subfamily:** Chrysauginae LEDERER

GENUS ***Petisca*** MARTINS-NETO

***Petisca dryellina*** MARTINS-NETO 1998b: pp. 63-64, pl. 3, fig. C; fig. 2 D.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a forewing.

**Family:** Nymphalidae *sensu* RYCHARD AND DAVIES

**Subfamily:** Danainae *sensu* RYCHARD AND DAVIES

GENUS ***Archaeolycorea*** MARTINS-NETO

***Archaeolycorea ferreirai*** MARTINS-NETO 1989: p. 380, fig. 4 A.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a forewing.

**Subfamily:** Satyrinae *sensu* KRISTENSEN

GENUS ***Neorinella*** MARTINS-NETO, KUCERA-SANTOS, VIEIRA AND FRAGOSO

***Neorinella garciae*** MARTINS-NETO, KUCERA-SANTOS, VIEIRA AND FRAGOSO 1993: pp. 6-8, pl. 1-2, figs. 2-3.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen well preserved including colour pattern.

**Family:** Noctuidae *sensu* KRISTENSEN

GENUS ***Philodarchia*** MARTINS-NETO

***Philodarchia cigana*** MARTINS-NETO 1998b: pp. 77-78, pl.1, fig. C; fig. 1 C.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a complete specimen.

**Order:** Hymenoptera LINNÉ  
**Family:** Ichneumonidae LATREILLE

GENUS ***Paratilgidopsis*** MARTINS-NETO

***Paratilgidopsis paecursora*** MARTINS-NETO 1998: p. 63, pl. 3, fig. B, fig. 3 B.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete fore wing.

GENUS ***Taubatehymen*** MARTINS-NETO

***Taubatehymen minuta*** MARTINS-NETO 1998: pp. 62-63, pl. 3, fig. A, fig. 3 A.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete hind wing.

**Family:** Siricidae BILLBERG  
**Subfamily:** Siricinae BILLBERG

GENUS *Urocerus* GEOFFROY

*Urocerus patagonicus* FIDALGO AND SMITH 1987: pp. 63-65, figs. 1-3.

*Type locality; stratigraphic level and age:* São Paulo State, Brazil; Taubaté Basin, Tremembé Formation, Oligocene.

*Remarks:* Species description is based on a nearly complete specimen.

**Family:** Formicidae LATREILLE

GENUS *Ameghinoia* VIANA AND HAEDO-ROSSI

*Ameghinoia piazzi* VIANA AND HAEDO-ROSSI 1957: pp. 109-113, pl. 1-3, figs. 1-3.

*Type locality; stratigraphic level and age:* Pichileufú, Río Negro Province, Argentina; Ventana Formation, Paleocene-Eocene.

*Remarks:* Species description is based on a nearly complete specimen. This species was assigned by Viana and Haedo Rossi (1957) to the Subfamily Ponerinae. Naumann (1991), allocated the species to the Subfamily Myrmeciinae.

GENUS *Polanskiella* ROSSI DE GARCÍA

*Polanskiella smekali* ROSSI DE GARCÍA 1983: pp. 19-20, pl. 1, figs. 1-3, 5.

*Type locality; stratigraphic level and age:* Confluencia, Río Negro Province, Argentina; Ventana Formation, Paleocene-Eocene.

*Remarks:* Species description is based on a nearly complete specimen. This species was assigned by Rossi de García (1983) to the Subfamily Ponerinae. Probably this species has to be placed into the Subfamily Myrmeciinae, after the examination of the il-

lustrated material, but we think that a revision of the type material is necessary to arrive to a more precise decision.

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