

## Research Article

**Second genus of Kinnaridae (Hemiptera: Fulgoroidea) from Chile**

Segundo género de Kinnaridae (Hemiptera: Fulgoroidea) de Chile

Juan F. Campodonico <sup>1</sup><sup>1</sup>J.M. Perceval #10259, Vitacura, Santiago, Chile. E-mail: [juan.campodonico@ug.uchile.cl](mailto:juan.campodonico@ug.uchile.cl)ZooBank: [urn:lsid:zoobank.org:pub:0CE815B7-48DD-43BD-B6F7-7CCBFB4D7E6E](https://doi.org/10.3896/BIOTAXA.urn:lsid:zoobank.org:pub:0CE815B7-48DD-43BD-B6F7-7CCBFB4D7E6E)

**Abstract.** *Mauriciana coquimbensis* **gen. and sp. nov.**, is described based on material from the coastal steppe matorral of Coquimbo Region, being the second genus of the family in Chile besides *Apocathema* Emeljanov. It differs, among other features, by the absence of median carina at eumetope and clypeus, tegmina with four closed nodal cells and a node within RP and MP, and presence of preapical tooth on genital styli of male.

**Key words:** Auchenorrhyncha, Fulgoromorpha, Prosotropinae, Prosotropini, South America.

**Resumen.** Se describe *Mauriciana coquimbensis* **gen. y sp. nov.**, en base a material proveniente del matorral estepario costero de la Región de Coquimbo, siendo el segundo género de la familia en Chile aparte de *Apocathema* Emejanov. Difiere, entre otras características, por la ausencia de carena medial en la eumetopa y clípeo, tégmenes con cuatro celdas nodales cerradas y un nudo entre RP y MP, y la presencia de diente preapical en los estilos genitales del macho.

**Palabras clave:** Auchenorrhyncha, Fulgoromorpha, Prosotropinae, Prosotropini, América del Sur.

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## Introduction

Kinnaridae Muir, 1925 is a small family of planthoppers composed by 115 species classified in 24 genera (Bourgoin 2018). In Chile is was represented only by the endemic genus *Apocathema* Emeljanov, 2016 (Prosotropini Fennah, 1945) with two species known from Valparaíso Region: *A. lukashevitchae* Emeljanov, 2016 and *A. zapallarensis* Campodonico & Emeljanov, 2017 (Emeljanov 2016; Campodonico and Emeljanov 2017).

The purpose of this contribution is to describe a new genus and species from specimens collected in the coast of Coquimbo Region.

## Materials and Methods

Anufriev and Emeljanov (1988) and Bourgoin *et al.* (2015) were followed for morphological terminology. Genitalia were macerated in KOH solution, rinsed in distilled water, observed in glycerin and stored in a micro-vial pinned under the respective specimen. Photographs were taken by a digital camera adapted to stereoscopic and compound microscopes.

Type material is deposited in the following collections: Museo Nacional de Historia Natural, Santiago, Chile (MNNC); Museo Entomológico Luis Peña, Universidad de Chile, Santiago, Chile (MEUC); Juan F. Campodonico collection, Santiago, Chile (JFCW).

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Recibido 26 Marzo 2018 / Aceptado 2 Mayo 2018 / Publicado online 11 Mayo 2018

Editor Responsable: José Mondaca E.

## Results

Prosotropini Fennah, 1945

*Mauriciana* **gen. nov.**

(Figs. 1-16)

**Type species.** *Mauriciana coquimbensis* **sp. nov.**, here designated.

**Diagnosis.** Median carina of eumetope and clypeus absent (median carina present in *Apocathema*), tegmina cells C1, C2, C4 and C5 closed, and a node within RP and MP (only two closed nodal cells, C2 and C5, and MP vein not touching node of RP in *Apocathema*), presence of preapical tooth in genital styli of male (styli of *Apocathema* with only apical tooth).

**Description.** General body including wings (Figs. 1-3) rounded, dorsoventrally flattened. **Head:** Coryphe (Figs. 1-2) indistinctly separated from acrometope, trapeziform; fore margin of coryphe about 3/4 as wide as hind margin; lateral carinae sharp; median carina of coryphe inconspicuous or vanished. Acrometope (Figs. 1-2) slightly shorter than coryphe, distally widened. Fastigium (Fig. 3) from lateral view arcuate, then eumetope almost flat. Eumetope (Fig. 4) caudally widened, surface slightly convex; median carina vanished; maximum width slightly before metopoclypeal suture, about twice as wide as fore side; passage of lateral margins from maximum width to metopoclypeal suture arcuate. Median ocellus (Fig. 4) somewhat indistinct. Clypeus (Fig. 4) with median carina absent. Rostrum reaching metacoxae. **Thorax:** Pronotum (Figs. 1-2) transverse; fore margin medially convex and concave behind eyes; median and lateral carinae weak or absent; posterior margin very weakly concave (nearly straight) medially, laterally obtusely bent cranial. Mesonotum (Figs. 1-2) subtriangular, nearly twice as long along midline as pronotum, tricarinated; lateral carinae parallel. **Wings:** Tegmina (Figs. 1-3, 5) with costal margin convex, arcuate, more curved basally; apex strongly curved; insular cell C5 formed by divergence and convergence of branches of CuA, anteriorly connected with stem of MP by crossvein *m-cu* and posteriorly connected to end of CuP by *icu*; cell C4 enclosed by strongly curve vein CuA<sub>1</sub> meeting or connected by *m-cu*<sub>2</sub> with MP; cell C2 enclosed by distinct node of RP with MP; node of RP and MP originating end of MP, bifurcation of RP (sometimes trifurcation; dotted line of Fig. 5), and diagonal *ir* meeting ScP+RA at margin enclosing C1 cell. **Legs:** Apex of hind tibia with (7-) 8 teeth; outer (4-5) and inner (3) groups slightly differentiated. Apices of basal and second segments of hind tarsus with (6-) 7 (-8) and 7 (-8) teeth, respectively; teeth (except marginal) of second segment with rather fine subapical setae. **Male abdomen:** Styli (Fig. 7) with dorsal lobe, preapical and apical tooth. Phallus (Figs. 6, 8-10) asymmetrical, with strong ventral process. Segment X (Figs. 11, 13) with pair of ventrobasal processes and from dorsal view distally narrowed. **Female abdomen:** Sterna V and VI widely desclerotized in median part. Sterna III and IV entire. Sternum VII (Fig. 16) entire and widened distally.

**Etymology.** This genus is named after the entomologist and friend Mauricio Cid Arcos. The name is feminine in gender.

*Mauriciana coquimbensis* **sp. nov.**

(Figs. 1-16)

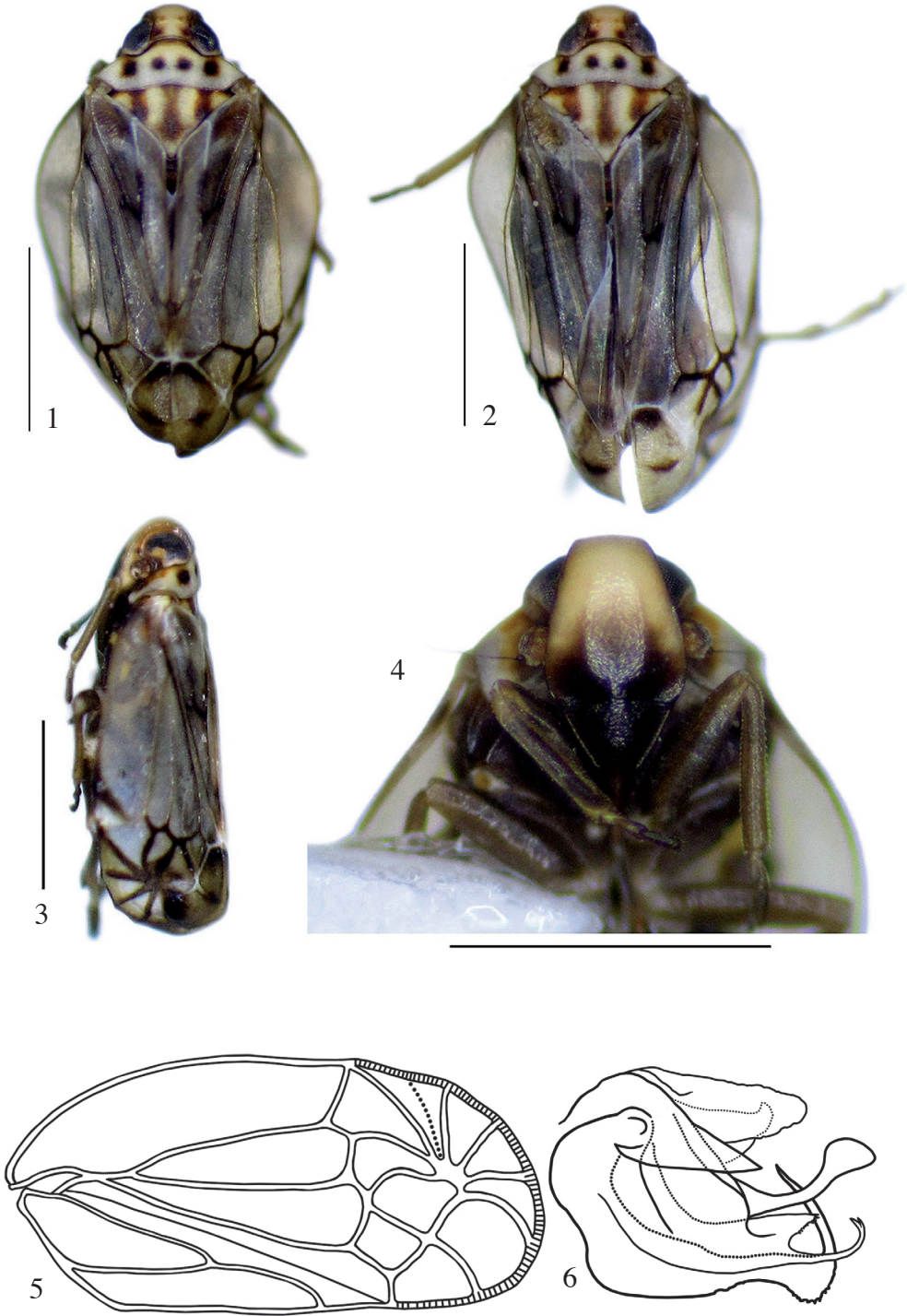
**Description.** Length excluding wings: 2.10 mm male holotype; 1.86-2.16 mm male paratypes (N=5); 2.14-2.19 mm female paratypes (N=2). Length including wings: 2.48 mm male holotype; 2.48-2.53 mm male paratypes (N=5); 2.7-2.75 mm female paratypes (N=2).

Width at level of tegulae: 0.92 mm male holotype; 0.88-0.91 mm male paratypes; 0.90-0.92 mm female paratypes (N=2). **Coloration:** Head, pro- and mesonotum (Figs. 1-3) pale. Pair of markings at lateral sides of coryphe, pair of small spots (sometimes absent) at hind side of acrometope, four round markings at disc of pronotum between carinae, and three stripes over carinae of mesonotum (Figs. 1-3) brown. Lower side of eumetope, clypeous (Fig. 4), sterna and terga blackish. Legs (Fig. 4) dark brown. Tegmina (Figs. 1-3) hyaline before nodal line, then mostly brownish; veins ScP+R and MP before nodal line light brown; anal veins basally hyaline, then blackish at middle, and finally light brown after fusion; ScP+RA hyaline with an oblique adjacent dark marking basad; CuA and most veins of and after nodal line dark with blackish adjacent areas especially around CuA<sub>1</sub>; veins *ic*, CuA<sub>2</sub> at level of insular cell C5, and part of adjacent veins white. **Head:** Macro-coryphe (Figs. 1-2) indistinctly shagreened; median length about three quarters of width between posterior angles; posterior margin concave; median carina of coryphe inconspicuous, sometimes vanished. Eumetope (Fig. 4) finely rugose; median carina apparently vanished due expansion. Metopoclypeal suture (Fig. 4) around 1.7 times as wide as fore side of eumetope, medially somewhat indistinct. **Thorax:** Pronotum (Figs. 1-2) indistinctly shagreened; median carina indistinct or absent; lateral carinae vanished; marginal carinae distinct. Paranotal lobes with right, narrowly rounded caudoventral angles. Mesonotum (Figs. 1-2) indistinctly shagreened; median and lateral carinae of disc weak; scutellum rugose. **Wings:** Tegmina (Figs. 1-3, 5) with postcostal cell wide, about twice as wide as radial cell; radial cell nearly as wide as median area; antero-cubital cell narrower and longer than preceding radial and median cells; cell C1 trapezoidal, almost triangular, distally acute; cell C2 subtriangular, hind side (part of vein MP) concave, distally acute; cell C4 wide, irregular; cell C5 quadrangular; apical cells triangular or subtriangular with basal angle acute until wide C5' cell which has strongly convex fore side (part of vein CuA<sub>1</sub>); hind apical cell between *icu* and CuA<sub>2</sub> irregularly trapezoidal, wide. **Male abdomen:** Pygofer (Figs. 11-12) from caudal view broadened ventrally, from lateral view with hind margins concave at dorsal 2/3. Styli (Fig. 7) with distal 2/5 of dorsal side first with narrow lobe with truncate apex, then preapical coarse tooth, and ending with strong dorsocaudal tooth at apex after rounded concavity; ventral side mostly straight at distal 5/7, then rounded up to dorsocaudal apical tooth. Phallus (Figs. 6, 8-10) with sclerotization (besides ventral process) ending with two processes at left side ventrad of apical membranous portion; upper process of sclerotization narrow, sinuous, and roundly broadened at apex; lower process of sclerotization moderately broad, with apex dorsally acute and ventrally ending into hook dorsally curved craniad; ventral process of phallus subapically narrowed from ventral side, then ventroapically rugose and dorsoapically with long spine moderately bent craniad. Segment X (Figs. 11, 13) from dorsal view narrowed distally, notched at apex; pair of ventrobasal processes crossed between each other and curved craniad at apex. **Female abdomen:** Sternum VII (Fig. 16) distinctly widened distally. Gonocoxae VIII (Fig. 16) from ventral view with basal margins indistinctly concave and obliquely diverging. Segment X (Figs. 14-15) distally broadened; hind margin concave; lateroventral sides produced caudally, surpassing level of dorsal hind margin.

**Type material.** Holotype ♂: Chile, Elqui prov., Ruta 5 Norte Km 505, Caleta los Hornos, 21.IX.2017, J.F. Campodonico leg., on *Bahia ambrosioides* (MNNC). Paratypes: same data as holotype 1♂ 1♀ (MNNC), 4♂ 1♀ (JFCW), 2♂ 1♀ (MEUC); Chile, Choapa, Km 272 Panam. Norte, 19.11.1985, Leg. M. Elgueta, ex *Baccharis concava*, 1♂ 1♀ (MNNC).

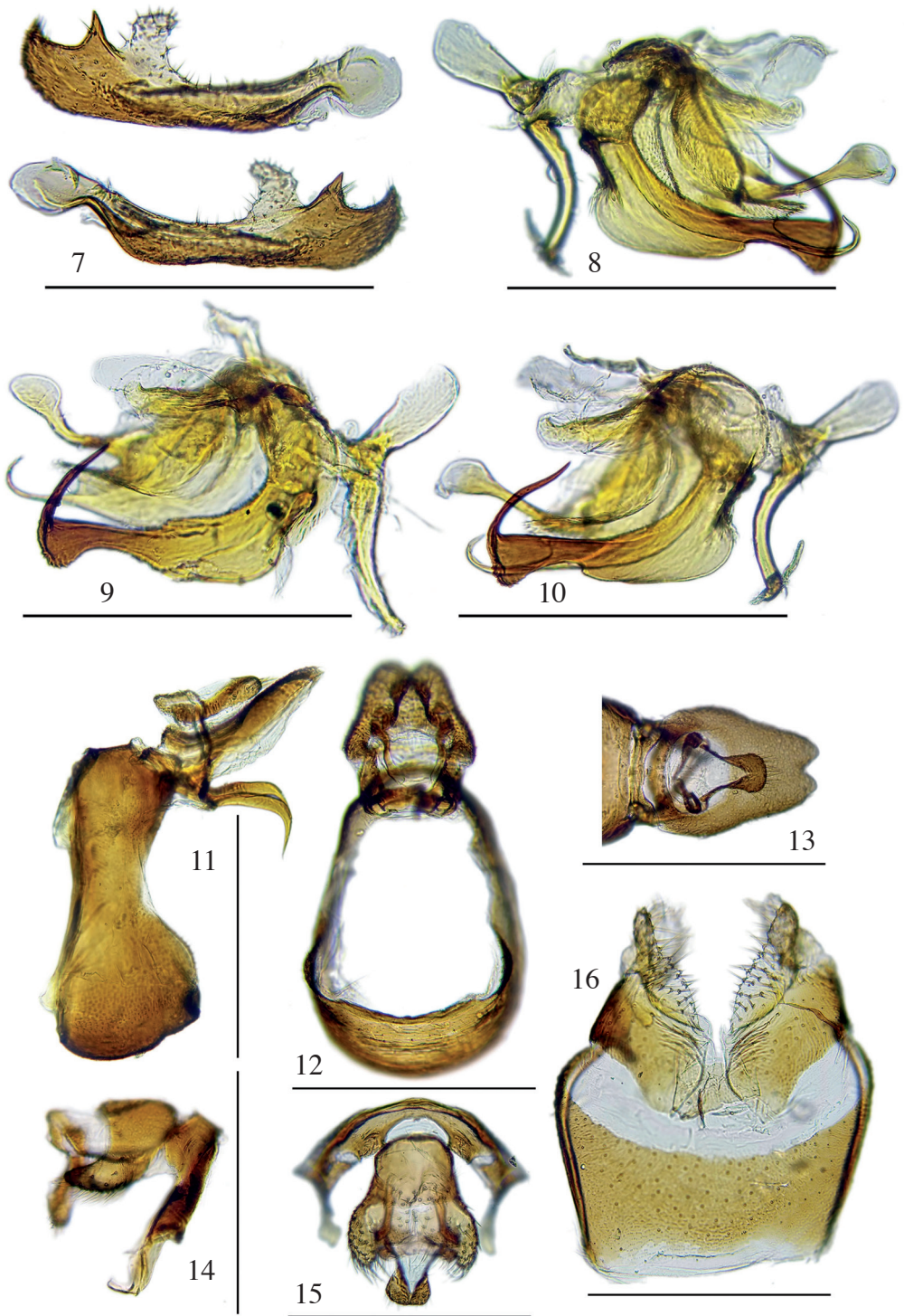
**Etymology.** The specific name refers to the administrative region of the localities where the specimens were collected.

**Natural history.** *M. coquimbensis* was collected in habitat of coastal steppe matorral (Gajardo 1994) beating foliage of *Bahia ambrosioides* Lag. and *Baccharis* sp. (Asteraceae).



**Figures 1-6.** *Mauriciana coquimbensis* sp. nov. 1-2. Habitus, dorsal view. 1. Male. 2. Female. 3. Lateral view of habitus, male. 4. Ventral view of anterior part of body, male. Scale: 1 mm. 5-6. Male. 5. Right tegmen. 6. Phallus, left lateral view.





**Figures 7-16.** *Mauriciana coquimbensis* sp. nov., male genitalia. 7. Styli, lateral view. 8-10. Phallus. 8. Left lateral view. 9-10. Right lateral view (different specimens). Scale: 0.5 mm. 11-13. Male genitalia. 11-12. Pygofer and postgenital segments. Lateral and caudal view. 13. Segments X and XI, dorsal view. 14-16. Female genitalia. 14-15. Tergum IX and postgenital segments, lateral and dorsal view. 16. Sternum VII to gonocoxae VIII, ventral view. Scale: 0.5 mm.

## Discussion

Even though *Apocathema* has a low number of species, several differences in the development of carinae, wing venation and structure of genitalia made necessary the proposal of a different genus for *M. coquimbensis*. In addition to these differences, *M. coquimbensis* can be easily recognized by the pale coloration pattern, which is dark in the currently known species of *Apocathema*.

The plant species labeled as "*Baccharis concava*" in the specimens from Choapa probably refer to *B. macraei* Hook. & Arn., as the first (*B. × concava* (Ruiz & Pav.) Pers.) is an hybrid found in the coastal mountains between Biobío and Los Ríos regions and usually confused with coastal species (Hellwig 1990). Even though the preference of *Mauriciana* to Asteraceae differs with the current known host association of *Apocathema* (particularly *A. lukashevitchae*) with *Chusquea* Kunth (Poaceae) (Emeljanov 2016), additional research is required to confirm or deny the monophagy of the adults of these taxa and know the host preferences of the immature stages.

## Acknowledgements

I thank Mauricio Cid Arcos for organizing the collecting trip where most specimens of the new species were obtained, and Mario Elgueta for allowing access to the collection of Museo Nacional de Historia Natural of Santiago, Chile.

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