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## New genus and species of Delphacini (Hemiptera: Delphacidae) from a salt marsh in northern Chile

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### Abstract

*Salinesia atacamensis* **gen. et sp. nov.** is described from a coastal wetland of Atacama Region, Chile. It is characterized by the small size (males < 2 mm), dorsal side concolorous, with lateral carinae of pronotum reaching hind margin, armature of male pygofer narrow and not produced, phallus curved ventrad, and abdominal segment X of male without processes.

**Key words:** Auchenorrhyncha, Fulgoromorpha, Fulgoroidea, South America, Atacama, Coastal wetlands

### Resumen

Se describe *Salinesia atacamensis* **gen. et sp. nov.** de un humedal costero de la Región de Atacama, Chile. Se caracteriza por su pequeño tamaño (machos < 2 mm), con las carenas laterales del pronoto alcanzando el margen posterior, armadura del pigóforo del macho no producida, falo curvado hacia abajo, y el segmento X del abdomen del macho sin procesos.

**Palabras clave:** Auchenorrhyncha, Fulgoromorpha, Fulgoroidea, Sudamérica, Atacama, Humedales costeros

### Introduction

In Chile, the tribe Delphacini Leach currently comprises 25 species in 14 genera, including some endemic and monotypic genera such as *Astatometopon* Campodonico, *Tragediana* Campodonico, and *Nesorthia* Fennah (Fennah, 1962; Campodonico, 2017b,c). Some members of this tribe are absent in the continent and distributed in Juan Fernandez Islands (9 species and 1 genus), and San Ambrosio of Desventuradas Islands (1 genus and species) (Muir, 1929; Fennah, 1957, 1962, 1965; Aguilera, 1972, Gonzon & Bartlett, 2007; Asche & Emeljanov, 2016; Remes Lenicov & Brentassi, 2017, Campodonico, 2017a,b,c).

In this work we describe a new endemic and monotypic genus from mainland Chile. This genus is similar to the Holarctic *Muirodelphax* Wagner and *Kosswigianella* (*sensu stricto*) Wagner, but differs from them in the coloration, carination of pronotum and features of genitalia.

### Materials and methods

The works of Anufriev & Emeljanov (1988) and Bourgoïn (1993) were followed for morphological terminology. For observation of genitalia the abdomen was cleared in 50% KOH solution and placed in glycerin in a micro vial pinned below the respective specimen.

Type material is deposited in the Museo Nacional de Historia Natural, Santiago, Chile (MNHC) and in the personal collection of Juan F. Campodonico (JFCW).

## Taxonomy

### Delphacinae Leach, 1815

#### Delphacini Leach, 1815

##### *Salinesia* gen. nov.

(Figs 1–21)

**Type species.** *Salinesia atacamensis* sp. nov., here designated.

**Diagnosis.** Body small (males < 2 mm), dorsal side concolorous (male abdomen darker in *Kosswigianella* and usually in *Muirodelphax*). Pronotum with lateral carinae reaching hind margin (lateral carinae of pronotum usually not reaching hind margin in *Muirodelphax* and *Kosswigianella*). Male pygofer without processes, with armature not produced and narrowed due to excavation (armature of pygofer broad, usually produced in *Muirodelphax* and *Kosswigianella*). Phallus curved ventrad. Segment X of male without processes (segment X usually with processes in *Kosswigianella*).

**Description.** All specimens brachypterous. General body shape oblong, small (< 2 mm), more than twice longer than wide; dorsal side concolorous (Figs 1–6).

**Head.** From dorsal view (Figs 1, 3, 5) subacute, subequal in width as pronotum. Macrocorphe (Figs 1, 3, 5) longer than wide; lateral margins parallel; anterior side and posterior margin equal or almost equal in width; posterior margin of macrocorphe straight or slightly notched, reaching eyes before mid-length; corphe composed of two narrow pentagonal cells enclosed by carinae. Fastigium (Figs 2, 4, 6) in lateral view roundly curved. Eumetope in lateral view slightly convex (Figs 7, 8), widest near mid-length; inferior margin (at metopoclypeal suture) as wide as superior side (at fastigium); median carina distinct. Rostrum surpassing mesocoxae. Clypeus (Figs 7, 8) tricarinate; basal width about two thirds its length. Antennae with scape and pedicel terete, pedicel nearly 1.5 times as long as scape.

**Thorax.** Pronotum (Figs 1, 3, 5) subtrapezoidal; posterior margin bisinuate, medially concave; median carina present; lateral carinae distinct, diverging and reaching posterior margin. Mesonotum (Figs 1, 3, 5) with apex acute; median carina present; lateral carinae diverging and reaching hind margin.

**Legs.** Metatibiae with one lateral tooth near tibiofemoral articulation and a second tooth near mid-length. Calcar with fine teeth on hind margin.

**Male abdomen.** Apodemes of sternum I (Fig. 9) long and well separated. Pygofer (Figs 10, 11) in lateral view higher than long; ventral surface longer than dorsal; opening with no ventral processes; diaphragm not produced and with excavation, medially narrow. Suspensorium short (Fig. 12). Phallus (Fig. 12) simple, distinctly curved ventrad. Genital styli (Figs 13, 14) simple, from lateral view geniculate. Segment X (Figs 12, 15) wider than long (dorsal view), without processes.

**Etymology.** From “*Salinas*” (Salt Marshes), based on the type locality of the type species, *Salinas de Copiapó*. Gender feminine.

##### *Salinesia atacamensis* sp. nov.

(Figs 1–21)

**Type material.** All specimens brachypterous. Holotype ♂, Chile, Copiapó prov., Salinas de Copiapó, 27°17'S 70°55'W, 30.IX.2017, C. Coccia leg. Paratypes: same data as holotype, 1♂ (MNNC), 2♂♂1♀ (JFCC); same data as holotype but “22.VI.2017” 1♂, 2♀♀ (MNNC).

**Description.** Body length: male holotype 1.44 mm; male paratypes 1.40–1.73 (N=4); female paratypes 1.86–1.98 (N=2). Body width (at level of tegulae): male holotype 0.53 mm; male paratypes 0.48–0.57 (N=4); female paratypes 0.58–0.59 (N=2).

**Coloration.** General coloration in males (Figs 1–4) brown to light brown; ventral side (Fig. 7) (excluding eumetope, carinae and legs) darker. General coloration in females (Figs 5, 6) light brown.

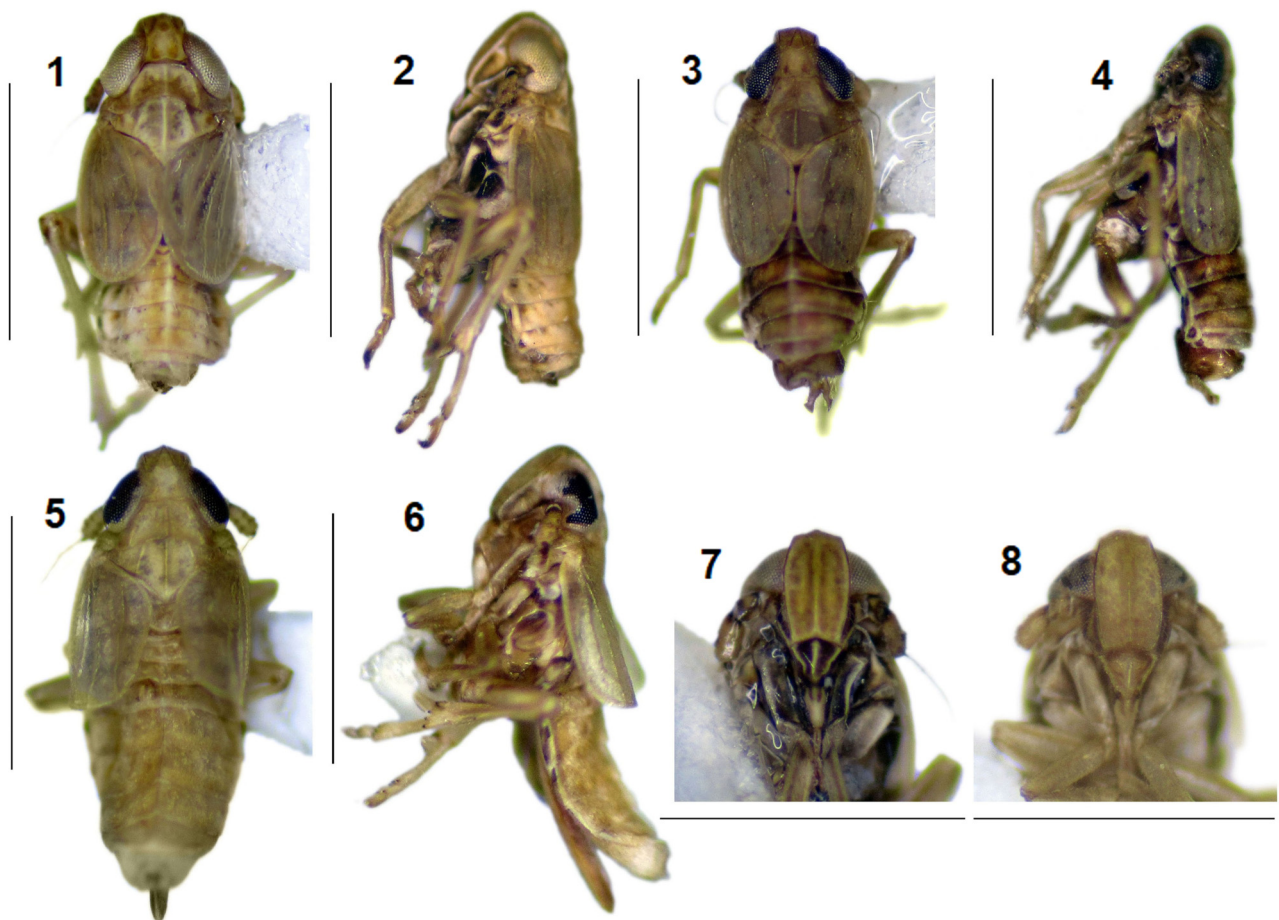
**Head.** Macrocorphe (Figs 1, 3, 5) subquadrate; anterior margin obtuse; length about 1.2 times its basal width; basal width as wide as anterior side, about 1/3 of head total width; lateral margins indistinctly concave; median

carina of coryphe weak; arms of “Y”-shaped carina at acrometope conspicuous. Eyes from dorsal view (Figs 1, 3, 5) narrowly oblong, twice as long as wide; from lateral view (Figs 2, 4, 6) broadened cranially; length about 1.5 times maximum height; notch not surpassing mid-height. Ocelli at small space between anteroventral margin of eye and margin of gena; adjacent to margin. Eumetope (Figs 7, 8) with length slightly more than 1.5 times maximum width; median carina conspicuous.

*Thorax.* Pronotum (Figs 1, 3, 5) with anterior margin nearly straight, 1/3 as wide as posterior width; median length about 1/4 of posterior width; posterior width indistinctly wider than head; posterior margin medially broadly and slightly concave. Mesonotum (Figs 1, 3, 5) length from posterior margin of pronotum to apex slightly more than 1/2 of width.

*Wings.* Tegmina (brachypterous specimens; Figs 1–6) usually not surpassing tergum V; slightly translucent; veins concolorous; veins rarely branched or with crossveins before apex. Hind wings (brachypterous specimens) obsolete.

*Legs.* Apex of metatibiae with three outer and two inner teeth. Calcar length about two thirds of length of metabasitarsus (including spines); hind margin with about 15 teeth. Metabasitarsi slightly longer than half of length of metatibiae; apex with four outer and two inner teeth. Second metatarsomeres about 2/5 of length of metabasitarsi; apex with four teeth.



**FIGURES 1–8.** *Salinesia atacamensis* sp. nov. 1–4. Male habitus, dorsal (1, 3) and lateral (2, 4) view. 5–6. Female habitus, dorsal (5) and lateral (6) view. 7–8. Ventral view of head, male (7) and female (8). Scale bars = 1 mm.

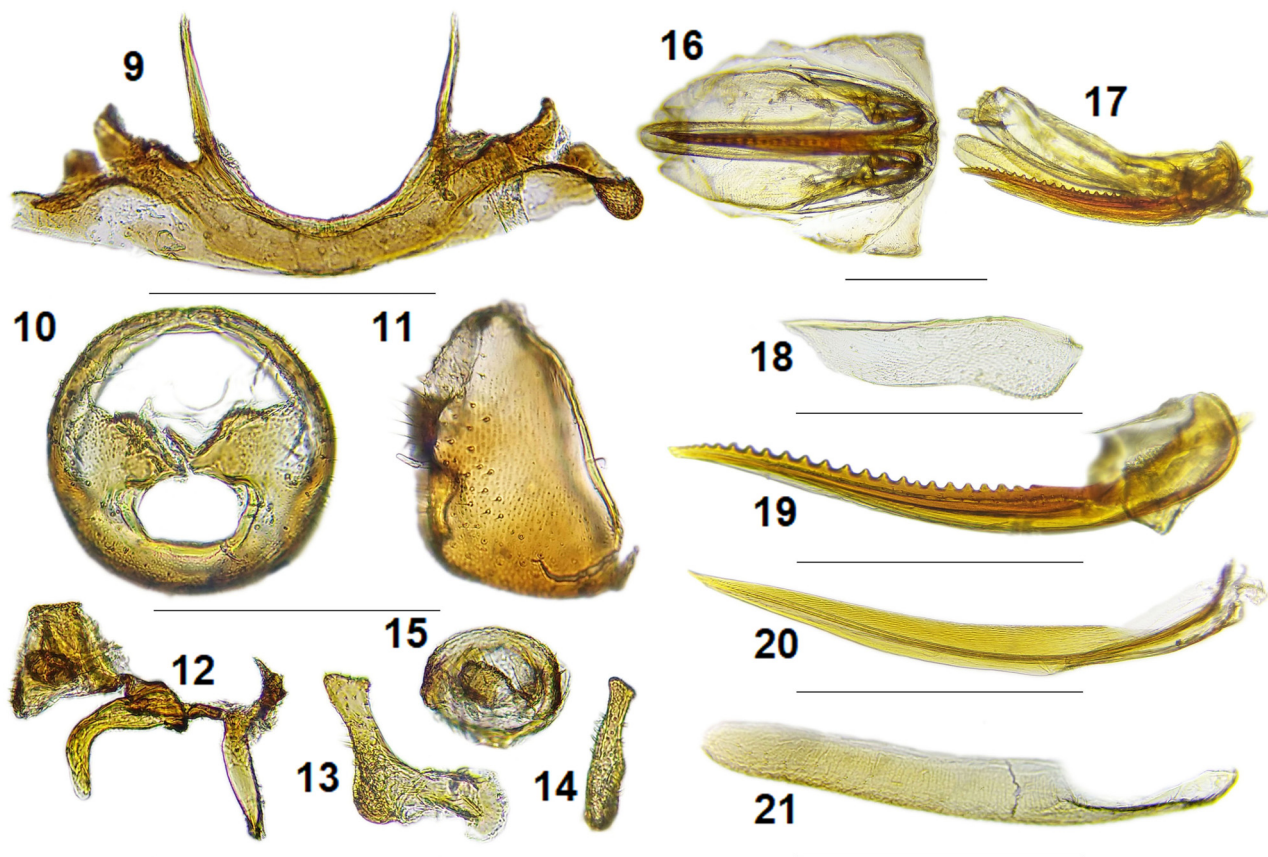
*Male abdomen.* Apodemes of sternum I (Fig. 9) fine and long (about 2/3 as long as distance between each other), slightly directed laterad. Pygofer (Figs 10, 11) from lateral view with ventral length about 5/7 of height; dorsal surface short; from caudal view as wide as high; armature of diaphragm with superior margin distinctly excavated (for reception of phallus in repose); foramen broad and oblong, 2/3 as high as wide. Phallus (Fig. 12) strongly curved down at 90 degrees; apical portion of shaft nearly as long as basal portion and narrowed to apex; gonopore caudoapically positioned. Genital styli (Figs 13, 14) slightly narrowed subapically, with outer apical

angles somewhat produced and slightly obtuse, and inner apical angles slightly acute and distad. Segment X (Figs 12, 15) short, in lateral view trapezoidal, with ventral surface longer than dorsal surface; from caudal view ring-like, slightly wider than high. Segment XI (Fig. 12) short, slightly surpassing or not surpassing distal margins of segment X.

**Female abdomen.** Ovipositor (Figs 16, 17) surpassing tergum IX. Gonoplares (Fig. 21) about 9 times as long as breadth; apex rounded; dorsal margin entire on distal 2/3. Gonapophyses IX (Fig. 19) with more than 20 acute teeth (not serrated), abruptly reduced and indistinct at apex and absent at basal 1/5 of shaft; space between each other roundly concave. Gonapophyses VIII (Fig. 20) longitudinally with slight marked striae; total length more than 10 times of breadth. Gonocoxae VIII (Fig. 18) about 4 times as long as breadth; basal angle slightly acute; distal angle acuter; outer margin bisinuate, with basal convexity shorter and more produced. Segment X short; length about 1/2 of width; ventral surface longer than dorsal surface, with posterior margin slightly concave. Segment XI nearly as long as segment X.

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

**Habitat.** *Salinesia atacamensis* was collected by pitfall traps in the dense vegetation zone of a salt marsh habitat. The vegetation was dominated by *Sarcocornia neei* (Lag.) M.A. Alonso & M.B. Crespo, a semi-woody dicot with procumbent to erect succulent stems; however, this probably may not be the host plant as delphacids are generally associated to monocots (Urban et al., 2010).



**FIGURES 9–21.** *Salinesia atacamensis* sp. nov. 9–16. Male abdomen. 9. Sternum I. 10–11. Pygofer, caudal (10) and lateral (11) view. 12. Phallic complex (excluding styli), lateral view. 13–14. Right genital stylus, lateral (13) and caudal (14) view. 15. Segment X, caudal view. 16–21. Female abdomen. 16–17. Female genitalia, ventral (16) and lateral (17) view. 18. Right gonocoxa VIII. 19. Gonapophyses IX. 20. Gonapophyses VIII. 21. Gonoplares. Scale bars = 0.5 mm.

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