

PARKINSONIA

by

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Abstract

The new species of the stem-galling midge *Neolasioptera* was described as *N. aculeatae* Gagné (Diptera: Cecidomyiidae). Studies were focused on it and on the leaf-feeding moth *Eueupithecia cisplatensis* Prout (Lepidoptera: Geometridae). *Neolasioptera aculeatae*: additional data on the field host range were obtained. A total of 442 *P. aculeata* plants were surveyed and high densities of galls were registered. So far, *N. aculeatae* adults have not emerged from galls of other species. *E. cisplatensis*: 380 larvae were collected by beating on *P. aculeata*. A colony is currently being raised at SABCL to make a shipment of *E. cisplatensis* to CSIRO quarantine facilities. For general information and background of the project, see previous reports and/or visit <http://ars.usda.gov/onp/sabel>

Materials and methods

Three field trips were made between November 2010 and April 2011 throughout central-northern Argentina. A roadside survey of *P. aculeata* plant populations was conducted along the main roads of Chaco, Formosa and Salta provinces. Plants were sampled mostly by visual inspection, hand collection and beating. Collected material was held in plastic containers during the trip, provided with fresh leaves when necessary and transported to the laboratory.

***Neolasioptera aculeatae* field host range** (Mar 30-Apr 6, 2011) Coexisting plants of *Acacia aroma*, *A. caven*, *Prosopis alba*, *P. ruscifolia*, *Senna obtusifolia*, *S. morongii*, *Sesbania exasperata*., *Neptunia pubescens*., *Parkinsonia praecox* and *P. aculeata* were visually inspected for the presence of stem galls (Table 3). Collected galls were kept in plastic containers and brought to the lab for adult emergence. *Senna*, *Sesbania* and *Neptunia* species were identified by Dr. Ulibarri (Instituto Darwinion, Buenos Aires, Argentina). Voucher specimens of the plants and insects are deposited at SABCL.

Results

Field collection of E. cisplatensis

A total of 380 larvae (L1-L4) were collected on seven sites in Chaco, Formosa and Salta Provinces (Table 1). A colony of *E. cisplatensis* is being maintained at SABCL for future shipments to CSIRO quarantine facilities.

Neolasioptera aculeatae

Thirteen samples of stem galls were taken from seven sites in Chaco, Formosa and Salta Provinces (Table 2). At some sites a high density of small/large sized galls was registered. Almost all *P. aculeata* plants showed 1-3 galls on more than one branch per plant. Different stem galls were collected on *Acacia* and *Prosopis* species (Figs. 1 & 2) (Table 3). Adult obtained, if any, will be sent to specialists for identification.

New findings

- Eggs, nymphs and adults of an unidentified Membracidae were collected near Juárez, Formosa, living on the shoot tips of *P. aculeata* (Fig. 3). This species

seems to occur also on *P. aculeata* plants growing at SABCL. Specimens are being identified by Dr. Ana Marino, Museo de La Plata, Buenos Aires, Argentina.

- *Neolasioptera* natural enemies. Hymenopteran parasitoids emerged from *Neolasioptera* galls were identified as *Platygaster* sp. (Platygastridae) by Dr. Marta Loiácono, La Plata Museum.

Significant accomplishment

The discovery and description of a new species of the stem-galling midge *Neolasioptera aculeatae* Gagné (Diptera: Cecidomyiidae).

Field trips to survey for *Parkinsonia* natural enemies

November 22-27, 2010: Formosa and Salta. Sosa and Márquez.

January 10-15, 2011: Formosa and Salta. Sosa and Krug.

March 30-April 6, 2011: Formosa, Salta and Santa Fe. Mc Kay and Heard.

Future plans

- *Eueupithecia cisplatensis*
 - Shipment of larvae/pupae to CSIRO quarantine facilities upon availability of exportation permits and request of cooperators.
- *Neolasioptera aculeatae*
 - Shipment of galls to CSIRO quarantine facilities upon availability of exportation permits and request of cooperators.
 - Attempt rearing and host specificity testing at SABCL (no-choice/multiple-choice minus control oviposition test with Caesalpinoidea species and other Leguminosae species).
 - Survey on native Leguminosae in *P. aculeata* natural distribution area to determine the realized host range.
- Conduct additional exploratory trips to continue searching for new natural enemies of *P. aculeata*.

Table 1. Field collection of *E. cisplatensis* from northern populations of *P. aculeata*.

Date and locality	Sampling effort (beats)	No. of larvae
Salta Province, RN°5, Yuchán (5180) 13 January 2011	20	5
Salta Province, RN°34, Embarcación (5179) 13 January 2011	60	4
Salta Province, RN° 81, Page (5178) 12 January 2011	18	4
Formosa Province, RN° 81, Juárez (5177) 11 January 2011	20	2
Formosa Province, RN° 81, near Bazán (5176) 12 January 2011	20	5
Chaco Province, RN° 95, near Fortin Lavalle (5181) 31 March 2011	20	64
Formosa Province, RN° 81, E. del Campo (5182) 1 April 2011	20	29
Formosa Province, RN° 81, Juárez (5183) 1 April 2011	10	4
Salta Province, RN° 81, Page (5184) 2 April 2011	20	71
Salta Province, RN° 81, 10 km E Hickmann (5185) 2 April 2011	20	17
Salta Province, RN°34, Embarcación (5186) 3 April 2011	20	0
Salta Province, RN°5, Yuchán (5187) 4 April 2011	60	175

Table 2. *Neolasioptera aculeatae*: Field survey and collection on *P. aculeata* and other Leguminosae in northern Argentina.

Date and locality	Plant species	N° of surveyed plants	N° of galls	
			<i>N. aculeatae</i>	Other*
Salta Province, RN°34, Embarcación (5171) 24 Nov 2010	<i>P. aculeata</i>	10	19	-
Salta Province, RN° 81, 10 km E Hickmann (5172) 24 Nov 2010	<i>P. aculeata</i>	30	21	-
Salta Province, RN° 81, Page (5173) 24 Nov 2010	<i>P. aculeata</i>	76	2	-
Formosa Province, RN° 81, Juárez (5175) 25 Nov 2010	<i>P. aculeata</i>	30	11	-
Salta Province, RN° 81, Page (5178) 13 January 2011	<i>P. aculeata</i>	9	1	-
Salta Province, RN°34, Embarcación (5179) 13 January 2011	<i>P. aculeata</i>	30	2	-
Salta Province, RN°5, Yuchán (5180) 13 January 2011	<i>P. aculeata</i>	35	22	-
Chaco Province, RN° 95, near Fortin Lavalle (5181) 31 March 2011	<i>P. aculeata</i>	25	ca.: 30	-
	<i>Acacia caven</i>	20	0	40
	<i>Prosopis ruscifolia</i>	10	0	9

Date and locality	Plant species	N° of surveyed plants	N° of galls	
			<i>N. aculeatae</i>	Other*
Formosa Province, RN° 81, E. del Campo (5182) 1 April 2011	<i>P. aculeata</i>	20	ca.: 40	0
	<i>Acacia aroma</i>	3	0	6
	<i>Prosopis alba</i>	8	0	39
	<i>Prosopis ruscifolia</i>	5	0	7
Formosa Province, RN° 81, Juárez (5183) 1 April 2011	<i>P. aculeata</i>	30	ca.: 80	0
	<i>Acacia aroma</i>	6	0	12
	<i>Parkinsonia praecox</i>	5	0	0
Salta Province, RN° 81, Page (5184) 2 April 2011	<i>P. aculeata</i>	20	ca.: 50	0
	<i>Acacia aroma</i>	4	0	24
	<i>Senna morongii</i>	20	0	0
Salta Province, RN° 81, 10 km E Hickmann (5185) 2 April 2011	<i>P. aculeata</i>	20	ca.: 100	0
	<i>Acacia aroma</i>	15	0	11
	<i>Prosopis alba</i>	4	0	31
	<i>Parkinsonia praecox</i>	10	0	0
Salta Province, RN°34, Embarcación (5186) 3 April 2011	<i>P. aculeata</i>	30	ca.: 80	0
	<i>Acacia aroma</i>	20	0	64
	<i>Senna obtusifolia</i>	10	0	0
	<i>Neptunia pubescens</i>	10	0	0
	<i>Sesbania exasperata</i>	10	0	0

*: Insects are still emerging from samples.



1a



1b



1c



2a



2b



3a



3b



3c

Figures 1-3. 1a-c. *Prosopis alba* galls. 2a-c. *Acacia aroma* galls. 3a-c. Unidentified Membracidae. 3a-Nymphs. 3b- Ovipositions. 3c- Adults.