

## Two new species of the ant genus *Pogonomyrmex* (Hymenoptera: Formicidae) from Argentina

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### Dos nuevas especies de *Pogonomyrmex* (Hymenoptera: Formicidae) de la Argentina

■ **RESUMEN.** Se describen dos nuevas especies de *Pogonomyrmex* Mayr para la Argentina: *P. mendozanus* sp. nov. y *P. kusnezovi* sp. nov. Se presenta una lista actualizada de las especies de *Pogonomyrmex* de la Argentina junto con datos de distribución, comentarios sobre la biología de las especies nuevas y figuras. Se ofrece una clave revisada, basada en obreras, para todas las especies del género citadas para la Argentina.

**PALABRAS CLAVE.** *Pogonomyrmex mendozanus*. *Pogonomyrmex kusnezovi*. Myrmicinae. Ambientes áridos. Taxonomía. Especies Nuevas.

■ **ABSTRACT.** Two new species of *Pogonomyrmex* Mayr from Argentina, *P. mendozanus* sp. nov. and *P. kusnezovi* sp. nov., are described. An updated list of species of *Pogonomyrmex* from Argentina is provided, as well as distributional data, comments on the biology of new species, and figures. A revised key of the known species for Argentina based on workers is offered.

**KEY WORDS.** *Pogonomyrmex mendozanus*. *Pogonomyrmex kusnezovi*. Myrmicinae. Arid environments. Taxonomy. New species.

### INTRODUCTION

The ant genus *Pogonomyrmex* was created by Mayr (1868) to include a group of ants inhabiting arid and semiarid environments of the Americas, with the highest species diversity occurring in the south of USA and Argentina. The majority of species are mostly adapted to collecting seeds in arid, open habitats (Lattke, 2006). As other desert ants (such as *Dorymyrmex* Mayr, *Forelius* Emery, etc), several species have a

high degree of hybridization, so setting strong and stable taxonomic boundaries between species is often a difficult matter. Main sources of information for Argentinean species are condensed in Kusnezov (1949, 1951) and Gallardo (1931, 1932). A taxonomic key and phylogenetic proposal for North American species were presented by Taber (1990). Regional contributions to *Pogonomyrmex* were made by Mackay *et al.* (1985) and Taber (1998). Additional new species were recently described by Fernández & Palacio

(1998), Vázquez-Bolaños & Mackay (2004) and Latke (2006). The Argentinean fauna of *Pogonomyrmex* is poorly known and this is one of the first attempts to enrich and update this knowledge. Two new species of *Pogonomyrmex* from Argentina, *P. mendozanus* and *P. kusnezovi*, are described in the present paper, and data on the biology of both new species are provided.

## MATERIAL AND METHODS

The following ant collections were revised for this study:

IFML – Instituto Fundación Miguel Lillo, Tucumán, Argentina.

MACN – Museo Argentino de Ciencias Naturales Bernardino Rivadavia, Buenos Aires, Argentina.

IADIZA – Instituto de Investigaciones de las Zonas Áridas, Mendoza, Argentina.

MLP – Museo de La Plata, Buenos Aires, Argentina

### Measurements:

Head length (HL): Maximum length of head in full face view, from midpoint apex of anterior clypeal margin to midpoint of occipital margin.

Head width (HW): Maximum width of head in full face view in an imaginary straight line close to the posterior margin of compound eyes.

Scape length (SL): Maximum length of scape, excluding basal condyle, in straight line.

Mandibular length (ML): Distance measured on a straight line from the base at insertion into the head capsule, to mandibular apex. Only measured for queen and male.

Distance between frontal lobes (DFL): Maximum distance between outer margins of frontal lobes in full face view.

Eye length (EL): Maximum length of compound eye in full face view of the head.

Eye width (EW): Maximum width of compound eye in full face view of the head. Only for queen and male.

Oculo-clypeal distance (OCD): in straight line from posterior clypeal margin to a

midpoint in anterior margin of compound eye.

Pronotal width (PW): Maximum width of pronotum in full face view.

Weber's length (WL): Length of mesosoma in lateral view, in a diagonal line from anterior pronotal margin to basal angle of metapleuron.

Total length: (TL): HL + WL + Length of petiole and gaster. Length of petiole and gaster are measured in lateral view.

Indices: the following indices were calculated from the preceding measurements:

Cephalic index (CI):  $HW \times 100/HL$ .

Mandibular index (MI):  $ML/HW$ . Only for queen and male.

Optical Index (OI):  $EL \times EW/HW$ . Only for queen and male.

Scape index (SI):  $SL \times 100/HW$ .

All measurements are expressed in mm, and were taken at 40X with a stereo microscope.

Type material is deposited in the ant collections at: MZSP (Museu de Zoologia da Universidade de São Paulo, São Paulo, Brazil); ICN (Insect Collection, Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá D.C., Colombia), MIZA (Instituto de Zoología Agrícola, Facultad de Agronomía, Universidad Central de Venezuela); IFML and IADIZA.

## RESULTS

Updated list of Argentinean species of *Pogonomyrmex*. Distributional data within Argentina and for each province are given between parentheses. A total of 34 species and subspecies (45% of described species of *Pogonomyrmex*) are recognized here:

1. *Pogonomyrmex abdominalis* Santschi (Córdoba, Misiones)
2. *Pogonomyrmex andinus* Kusnezov (La Rioja, Salta)
3. *Pogonomyrmex angustus* Mayr (Chubut, Neuquén, Río Negro)

4. *Pogonomyrmex atratus* Santschi (Mendoza) Córdoba, Entre Ríos, La Pampa, Misiones, Salta, San Luis, Santa Fe, Tucumán)
5. *Pogonomyrmex bispinosus* Spinola (Formosa?)
6. *Pogonomyrmex brevibarbis brevibarbis* Emery (Chubut, Neuquén, Río Negro, Santa Cruz)
7. *Pogonomyrmex brevibarbis niger* Santschi (Catamarca, La Rioja, Salta, Tucumán)
8. *Pogonomyrmex brevibarbis silvestrii* Emery (Mendoza, San Juan)
9. *Pogonomyrmex bruchi* Forel (Córdoba, Buenos Aires, Río Negro)
10. *Pogonomyrmex carbonarius carbonarius* Mayr (Chubut, Mendoza, Neuquén, Río Negro, Santa Cruz)
11. *Pogonomyrmex carbonarius sanmartini* Kusnezov (Río Negro)
12. *Pogonomyrmex catanlilensis* Gallardo (Neuquén)
13. *Pogonomyrmex coarctatus* Mayr (Buenos Aires, Córdoba, Chubut, Entre Ríos, La Pampa, Río Negro, Santa Fe)
14. *Pogonomyrmex cunicularius* Mayr (Buenos Aires, Catamarca, Córdoba, Corrientes, Chaco, Entre Ríos, Formosa, Jujuy, La Pampa, La Rioja, Salta, San Luis, Santa Fé, Santiago del Estero, Tucumán)
15. *Pogonomyrmex inermis* Forel (Catamarca, La Pampa, Mendoza, San Juan, San Luis, Salta)
16. *Pogonomyrmex kusnezovi* Cuezco & Claver sp. nov. (Río Negro)
17. *Pogonomyrmex laticeps* Santschi (Catamarca, Salta, Tucumán)
18. *Pogonomyrmex laevigatus* Santschi (Neuquén, Río Negro, Chubut)
19. *Pogonomyrmex lobatus* Santschi (Corrientes, Entre Ríos, Santa Fe)
20. *Pogonomyrmex longibarbis longibarbis* Gallardo (Catamarca, Jujuy, Salta, Tucumán)
21. *Pogonomyrmex mendozanus* Cuezco & Claver sp. nov. (Mendoza)
22. *Pogonomyrmex meridionalis meridionalis* Kusnezov (Mendoza, Santa Cruz)
23. *Pogonomyrmex meridionalis leonis* Kusnezov (Mendoza)
24. *Pogonomyrmex micans* Forel (Buenos Aires, La Pampa, San Luis)
25. *Pogonomyrmex naegelii* Forel (Chaco, Córdoba, Entre Ríos, La Pampa, Misiones, Salta, San Luis, Santa Fe, Tucumán)
26. *Pogonomyrmex odoratus* Kusnezov (Neuquén, Río Negro, Chubut)
27. *Pogonomyrmex pronotalis* Santschi (Mendoza)
28. *Pogonomyrmex rastratus rastratus* Mayr (Catamarca, Mendoza, Neuquén, Río Negro, San Luis)
29. *Pogonomyrmex rastratus pulchellus* Santschi (Catamarca)
30. *Pogonomyrmex tenuipubens* Santschi (Misiones)
31. *Pogonomyrmex uruguayensis* Mayr (Entre Ríos, Formosa, Salta, Tucumán)
32. *Pogonomyrmex variabilis* Santschi (La Pampa, Mendoza, Neuquén, Río Negro)
33. *Pogonomyrmex vermiculatus vermiculatus* Emery (Catamarca)
34. *Pogonomyrmex vermiculatus chubutensis* Forel (Chubut, Río Negro, Santa Cruz)

#### Revised key to workers of Argentinean species of *Pogonomyrmex*

- 1- TL < 5.5 mm. Psammophore with short setae, not reaching the oral cavity. Propodeum with 2 pairs of well developed spines ..... 2
- 1'- TL > 5.5 mm. Psammophore with long setae, extended forward over the oral cavity. Propodeal spines present or absent ..... 11
- 2- Sculpture of postpetiole strong and dense. Anterior clypeal margin straight or feebly convex ..... 3
- 2'- Postpetiole smooth and shining. Anterior clypeal margin strongly convex or with a central emargination ..... 5
- 3- More than 20 longitudinal rugae between frontal carinae. Promesonotal rugae irregular and fine ..... *P. tenuipubens*
- 3'- No more than 8-10 longitudinal rugae between frontal carinae. Promesonotal rugae reticulate and strong ..... 4

- 4- Lower pronotal spine as long as upper teeth and sharp ..... *P. naegeli* ..... 13  
 4'- Lower pronotal spine shorter than the upper spine and apically rounded ..... *P. abdominalis* ..... 13- TL 6-7.5 mm. Dorsum of first gastral segment without rugae ..... *P. laticeps* ..... 13'- TL < 6 mm. Dorsum of first gastral segment partly or entirely covered with longitudinal rugae ..... 14
- 5- Maxillary palp with 5 segments, labial palp with 4 segments ..... 6  
 5'- Maxillary palp with 4 segments, labial palp with 3 segments ..... 8  
 14- Humeral angle rounded ..... *P. uruguayensis* ..... 14'- Humeral angle sharp ..... 15
- 6- Head and mesosoma yellow or reddish, never black. (Frontal area of head with only a few fine striae) ..... *P. odoratus* ..... 7  
 6'- Head and mesosoma black or blackish ..... 7  
 15- Occipital margin in face view feebly concave in middle ..... 16  
 15'- Occipital margin in face view straight or convex ..... 17
- 7- Frontal area of head, occiput and dorsal part of thorax strongly striated. Occipital area and pronotum smooth and shining ..... *P. laevigatus* ..... 16- Head and mesosoma black, gaster red ..... *P. meridionalis* ..... 16'- Head dark red, mesosoma and gaster black. Mesosoma with dense pilosity ..... *P. meridionalis leonis* ..... 17- Head, mesosoma and gaster black or blackish ..... 18  
 7'- Frontal area of head with longitudinal fine rugae. Occiput with conspicuous reticulation and areolation, same for dorsum of thorax and petiolar node ..... *P. angustus* ..... 17'- At least one tagma (head or mesosoma or gaster) not black ..... 21
- 8- Head and mesosoma never black ..... *P. cunicularius* ..... 9  
 8'- Head and mesosoma black ..... 9  
 18- Pair of upper propodeal spines connected by a well developed keel; dorsum of the first gastral segment mostly or entirely covered by longitudinal rugae ..... *P. carbonarius* ..... 18'- Pair of upper propodeal spines not joined by a keel; dorsum of the first gastral segment shining ..... 19
- 9- Petiolar node as a triangular scale, with a sharp point ..... *P. brevibarbis brevibarbis* ..... 10  
 9'- Petiolar node obtuse ..... 10  
 19- Basal margin of mandible roughly straight ..... *P. atratus* ..... 19'- Basal margin of mandible at least slightly convex ..... 20
- 10- Petiolar node upward directed ..... *P. brevibarbis silvestrii* ..... 20- Base of first gastral segment with longitudinal, fine rugae ..... *P. vermiculatus vermiculatus* ..... 10'- Petiolar node backward directed ..... *P. brevibarbis niger* ..... 20'- First gastral segment without rugae ..... *P. vermiculatus chubutensis* ..... 21- Dorsum of first gastral segment entirely covered with longitudinal rugae ..... 22
- 11- Head with interrugal areolation dense, giving a beaded appearance ..... 12  
 11'- Head interrugal areolation not dense enough to present a beaded appearance ..... 28  
 12- Propodeum unarmed ..... *P. inermis* ..... 12'- Propodeum with at least a pair of spines, with different degree of development ..... 13

- 21'- Dorsum of first gastral segment without rugae .....23
- 22- Head sculpture with longitudinal and transversal rugae on occipital margin. Posterior clypeal surface between frontal lobes with only 3-4 longitudinal rugae. Mesosomal profile continuous .....  
..... *P. pronotalis*
- 22'- Head without transversal rugae on occipital margin. Posterior clypeal surface between frontal lobes with more than 6 longitudinal rugae. Mesosomal profile interrupted by strong metanotal carina .....  
..... *P. mendozanus* sp. nov.
- 23- Lower propodeal spine well developed, with acute end ..... 24
- 23'- Lower propodeal spine poorly developed, with rounded end ..... 25
- 24- TL 6.5-8 mm Mesonotal rugae feebly vermiculated ..... *P. rastratus*
- 24'- TL 7.5-8 mm Mesonotal rugae strongly vermiculated ..... *P. catanlilensis*
- 25- Mesosoma, in lateral view, vermiculated. .... *P. variabilis*
- 25'- Mesosoma, in lateral view, longitudinally striate ..... 26
- 26- Upper propodeal spine well developed. (Species found at high altitude, more than 3000 m. a.s.l.).....  
..... *P. longibarbis*
- 26'- Upper propodeal spine not well developed, sometimes replaced by a tubercle ..... 27
- 27- CI < 100. Scape with erect setae. Upper propodeal spine as a tubercle .....  
..... *P. andinus*
- 27'- CI > 100. Scape without erect setae. Upper propodeal spine poorly developed but present, not as a tubercle .....  
..... *P. kusnezovi* sp. nov.
- 28- Scape long surpassing occipital margin of head ..... *P. lobatus*
- 28'- Scape short not surpassing occipital margin of head ..... 29
- 29- Scape base conspicuously expanded. Femur I strongly incrassate. Worker caste strongly polymorphic with large-headed majors ..... *P. coarctatus*
- 29'- Scape base without expansion. Femur I feebly incrassate. Worker caste weakly polymorphic ..... 30
- 30- Head dull, with conspicuous rugae, specially well developed in the occipital corners ..... *P. micans*
- 30'- Head shining, with fine rugae, specially poorly developed in the occipital corners ..  
..... *P. bruchi*

***Pogonomyrmex mendozanus* sp. nov.**

(worker Figs. 1-2; queen Figs. 5-6; male Figs. 7-11)

**Worker diagnosis.** Posterior margin of head slightly concave, covered with longitudinal rugae and without transverse rugae (Fig. 1). Clypeal area between frontal lobes with 6-8 rugae always present and well developed. Dorso-lateral angle of pronotum rounded, slightly evident. In lateral view, the entire mesosomal area is covered by fine and very regular rugae (Fig. 2). Peduncle of petiole long, with slightly developed ventral process (Fig. 2). Gaster smooth and shiny.

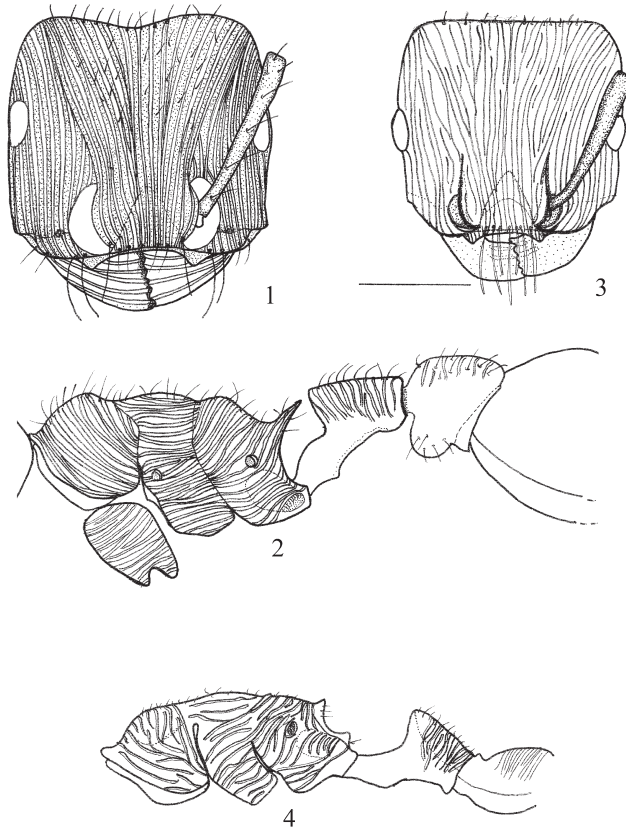
**Descriptions**

**Worker**

**Measurements.** Holotype worker (Paratype variations in parentheses, n=20, notation: minimum - maximum). HL: 1.775 (1.5-2.0); HW: 1.9 (1.625-2.075); SL: 1.35 (1.15-1.425); DFL: 0.775 (0.725-0.85); EL: 0.4 (0.325-0.425); OCD: 0.525 (0.45-0.625); PW: 1.175 (1.125-1.375); WL: 2.075 (2.0-2.525); CI: 107 (103-108); SI: 71 (70-71).

Head, mesosoma, petiole and postpetiole black to blackish brown, gaster yellow to reddish brown. Dorsal surface of body with short and whitish setae, sparsely distributed. Fine and very regular rugae present in dorsal surface of head, diverging towards occipital corners. Area between rugae, on dorsal surface of head, shagreened.

Head: slightly wider than long (CI= 103-108). Posterior margin slightly concave



**Figs. 1-4.** *Pogonomyrmex mendozanus* sp. nov. 1, worker head in full face view; 2, mesosoma and petiole. *Pogonomyrmex kusnezovi* sp. nov. 3, worker head in full face view; 4, mesosoma and petiole (Scale = 1 mm).

(Fig. 1), with longitudinal rugae, without transverse rugae. Mandible strongly striated with six teeth. Anterior clypeal margin convex, bidentate. Clypeal area, between frontal lobes, with six-eighth rugae always present. Eye convex, protruding from side of head, centered on midpoint of side of head, without hairs between ommatidia. Scape not reaching posterior margin of head, but surpassing midpoint between posterior edge of eye and occipital margin (Fig. 1). Scape covered by longitudinal rugae moderately to weakly developed. Psammophore well developed. Palpal formula: 4:3.

Mesosoma: profile interrupted by a strong ruga placed between mesonotum and propodeum (Fig. 2) Pronotal collar smooth and shiny. Dorso-lateral angle of pronotum poorly developed, rounded. From side view, pronotal profile higher than mesonotum

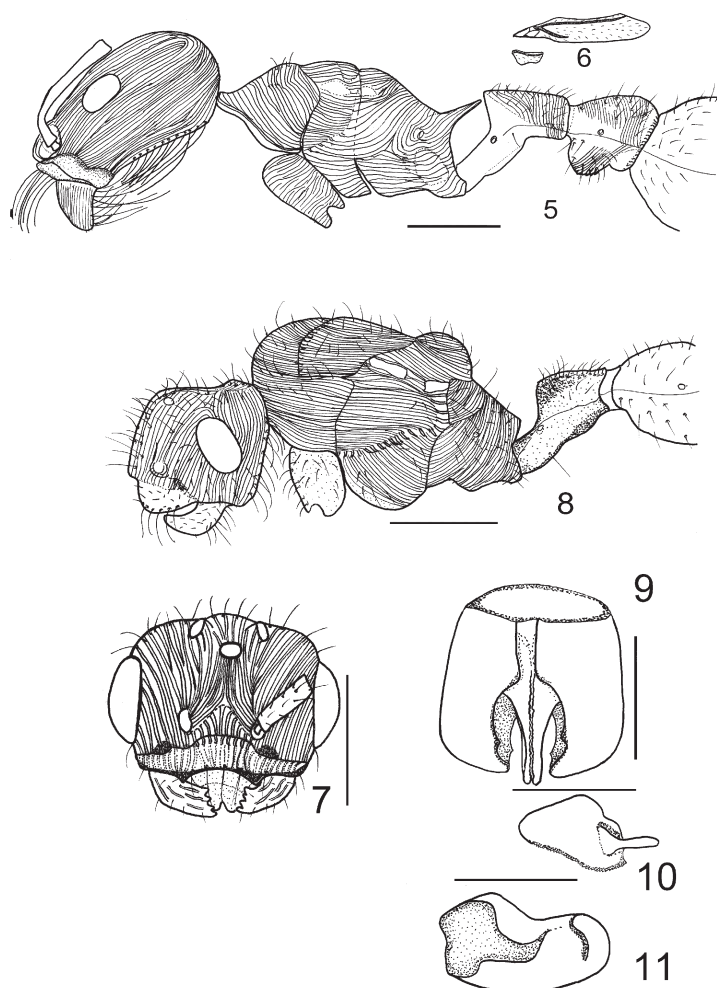
(Fig. 2). Dorsal surface of pronotum covered with thick rugae, conspicuous and extensive. Humerus angular, with tubercle rounded. Propodeal rugae fine, regular and transverse. Procoxa with transverse rugae strongly developed. Dorsal propodeal spine well developed, slender and acutely pointed, more than twice as long as ventral spine, connected by conspicuous keel to contralateral tooth.

Petiole: peduncle smooth and shining with a very weak ventral process (Fig. 2). Petiolar node elongated, more than twice longer than wide. Dorsal face with transversal rugae.

Postpetiole: dorsal surface with transversal rugae. Ventral process strongly developed and covered with transverse rugae.

Gaster: smooth and shiny with sparse piligerous punctulae. First segment without rugae.





Figs. 5-11. *Pogonomyrmex mendozanus* sp. nov. 5, queen: mesosoma and petiole in lateral view; 6, fore and hind wings of queen; 7, male: head in full face view; 8, male: lateral view, excluding gaster; 9, male genital capsule in ventral view; 10, aedeagus; 11, parameres in lateral view (Scale = 1 mm).

### Queen

**Measurements.** n=4. HL: 2.075-2.3; HW: 2.43-2.73; ML: 1.03-1.28; EL: 0.48-0.53; EW: 0.2-0.28; SL: 1.55-1.65; DFL: 0.88-1.00; OCD: 0.6-0.7; PW: 1.45-1.58; WL: 2.4-2.73; CI:117-119; MI: 0.42-0.47; OI: 0.04-0.05; SI: 60-64.

Same pattern of color and sculpture as worker.

**Head:** Mandible striated with only six teeth. Scape short, not reaching posterior cephalic margin, covered with very fine rugae. Occipital margin slightly concave in

middle.

**Mesosoma:** Similar to worker in color and sculpture (Fig. 5). All four examined specimens are brachypterous. Forewing with only two longitudinal dark veins and no cells or pterostigma (Fig. 6).

**Petiole and Postpetiole:** Dorsal and lateral faces transversely striated (Fig. 5).

**Gaster:** First gastral segment without sculpture, covered by scattered and appressed hairs.

### Male

**Measurements.** n=1. HL: 1.2; HW: 1.48;

ML: 2.5; EL: 0.55; EW: 0.18; SL: 0.45; PW: 1.4; WL: 2.5; CI: 123; MI: 169; OI: 0.07; SI: 30.

Pattern of color similar to that of worker and queen.

Head: subquadrate in frontal view, with posterior margin convex, with its maximum width after compound eyes (Fig. 7). Dorsal surface of body with short and whitish setae, sparsely distributed. Fine and very regular rugae present in dorsal surface of head, diverging towards occipital corners. Vertex covered with transverse rugae. Compound eye well developed, convex, occupying more than one-third of lateral cephalic margin. Clypeus without smooth areas, all its dorsal surface covered by longitudinal rugae. Mandible with rugae on the outermost margin and with only four teeth. Scape shorter than combined length of first two flagellar segments, without rugae and with short, erect whitish hairs.

Mesosoma: in profile strongly sculptured with longitudinal rugae (Fig. 8). Fore and hind wings well developed. Fore wing with two closed cubital cells and one discoidal cell. Hind wing with only two closed basal cells and a narrow costal cell. Hamulus with 10 hooks. Fore and hind wing disc covered with short hairs. Anterior surface of first coxa with long hairs. Coxa I shining. Propodeum without teeth, spines or tubercles in lateral view.

Petiole: Dorsal face areolate in lateral view, with very small ventral process below peduncle (Fig. 8).

Postpetiole: Dorsal face with few rugae.

Gaster: with only 5 visible tergites and 6 sternites. Pigostyle short, but present. Genital capsule strongly sclerotized (Fig. 9). Paramere without a differentiated cuspis (Fig. 10). Ventral border of aedeagus in lateral view with row of minute teeth (Fig. 11).

**Etymology:** The species name, *P. mendozanus*, refers to the province of Mendoza, Argentina, where this species was first collected.

**Type material.** Holotype worker (1w), Argentina, Provincia de Mendoza, Santa

Rosa, Ñacuñán, 12-II-1997, Silvia Claver coll. (deposited at IADIZA, Mendoza, Argentina). Paratypes (n= 106 workers, 1 male, 4 queens) from same locality and collector as the holotype, several samples collected with different data: 5w, 03-XII-1981; 9w, 16-III-1982; 67w, 26-III-98; 9w, 12-II-1997; 11w, 20-II-1997; 5w, 12-VI-1997; Paratypes will be deposited at the following institutions: 56w, 1m and 2q at IADIZA, 10w at MZSP, 5w at ICN, 5w at MIZA, 30w and 2q at IFML.

**Additional examined material:** For comparison, material from *P. pronotalis* workers from IFML, MACN, and MLP was examined.

**Type locality:** Argentina, Mendoza province, Dto. Santa Rosa, Ñacuñán.

**Discussion:** This species might be confused with *P. pronotalis* by color of the body, pilosity, and general aspect. Apparently, *P. pronotalis* is an endemic Argentinean species only known from the type locality: Cajón del Guanaco, Mendoza, Argentina. *Pogonomyrmex mendozanus* sp. nov. was mentioned as *Pogonomyrmex pronotalis* in Claver and Fowler (1993). The following characters are useful to separate both species: head sculpture fine and more regular in *P. mendozanus*, without transversal rugae on the occipital margin; posterior clypeal surface between frontal lobes with only 3-4 longitudinal rugae in *P. pronotalis*, more than 6 in *P. mendozanus*; mesosomal profile, in lateral view, continuous in *P. pronotalis* and interrupted by a strong metanotal carina in *P. mendozanus*; propodeal spine in *P. mendozanus* longer than in *P. pronotalis*; body sculpture in *P. mendozanus* more regular in dorsal and lateral view; both species have erect setae in dorsal surface of head, mesosoma and gaster, but this are shorter and sparsely in *P. mendozanus*; postpetiolar ventral process more developed in *P. pronotalis*, present but reduced in *P. mendozanus*.

**Biology.** We observed more than 20 nests of *Pogonomyrmex mendozanus* sp.



nov. in natural areas. The nests were built in sandy soils, in bare or very sparsely vegetated areas. Nest mounds were 5 cm high and 12-15 cm in diameter and had one or more irregular entrances 1-2 cm in diameter. They were often located near the base of grasses. Excavated nests had a maximum depth of 45 cm and a diameter of 30 cm. Nest chambers with immature stages (pupae, larvae and eggs) were irregularly distributed throughout the nest, and the first chambers were found a few centimeters beneath soil surface. Seed chambers were found at depths of more than 30 cm, next to the nest chambers. The major foraging periods were during daytime from spring to fall. We observed an individual foraging pattern and no foraging trails. Despite high soil temperatures, ants were seen running away with the tip of the gaster curved forward below the mesosoma. In the Ñacuñán Biosphere Reserve, we observed that these ants mainly harvest caryopses from grasses (e.g. *Trichloris crinita*, *Pappophorum caespitosum* and *Digitaria californica*) and seeds of dicotyledoneous plants (e.g., *Atriplex lampa* and *Verbena aspera*) to a lesser degree. Workers were seen climbing up the stems of grasses to cut spikes and were also seen collecting diaspores from plant litter. Ants only accumulated seed parts or caryopses in their nest and discarded all the surrounding plant structures. Unlike other ant species of the genus, these ants leave no discarded plant material outside the nest. The workers were extremely aggressive when disturbed and their bite is painful.

*Pogonomyrmex kusnezovi* sp. nov.  
(worker, Figs. 3-4)

**Worker diagnosis.** Scape short (Sl: 62-66), longitudinally striated, with suberect hairs, without pubescence. Clypeal area between frontal lobes with 3-4 rugae always present. Upper propodeal spine short and stout, connected by conspicuous keel to contralateral tooth. Lower propodeal spine present, triangular and well developed.

**Descriptions**  
**Worker**

**Measurements.** Holotype worker (1) (Paratype variations in parentheses, n=3, notation: minimum-maximum). HL: 1.725 (1.725-1.975); HW: 1.9 (1.925-2.1); SL: 1.2 (1.275-1.3); DFL: 0.725 (0.725-0.775); EL: 0.35 (0.35-0.375); OCD: 0.45 (0.45-0.5); PW: 1.05 (0.95-1.05); WL: 1.825 (1.825-2.25); Cl: 110 (101-106); SI: 63 (62-66).

Head orange to reddish, with anterior clypeal margin, mandible and antennae dark brown to blackish; mesosoma, petiole, postpetiole and gaster black to blackish brown. Dorsal surface of body with long and whitish setae, sparsely distributed.

Head: slightly wider than long (Cl=101-106). In full face view, striate. Rugae diverging toward occipital corners (Fig. 3). Area between rugae, on dorsal surface of head, shagreened. Posterior margin of head slightly concave (Fig. 3) and covered with longitudinal rugae, without transverse rugae. Mandible strongly striated with six-seven teeth, external margin broadly convex in dorsal view. Anterior clypeal margin convex, bidentate. Clypeal area between frontal lobes with 3-4 rugae always present (Fig. 3). Eye convex slightly protruding from sides of head, centered on midpoint of side of head. Scape surpassing midpoint between posterior edge of eye and occipital margin. Scape longitudinally striated, with suberect hairs, without pubescence. Psammophore well developed, with long setae forming a basket-like structure beneath head.

Mesosoma: profile straight and continuous, metanotal groove not evident (Fig. 4). Pronotal collar not transversely striated. Humerus with rounded angle, weakly developed. Anterior surface of pronotum transversally rugulose. Dorsal surface of pro and mesonotum rugulose, with coarse and conspicuous rugae longitudinally disposed. Propodeum, in full face view, rugulose; rugae transversely disposed. Procoxa without rugae, shagreened and dull. Upper propodeal spine short and stout, connected by conspicuous keel to contralateral tooth. Ventral propodeal tooth present, triangular and well developed, placed in the posterior ventral corner of propodeum (Fig. 4).

Petiole: Node longer than wide, anterior face short and vertical, without sculpture. Peduncle mostly smooth and shining, short, about as long as node, with very weak ventral process (Fig. 4).

Postpetiole: Dorsal face with transversal rugae. Ventral process absent.

Gaster: First segment with very fine striolation disposed longitudinally and covering all the dorsal surface of segment.

**Queen and male:** unknown.

**Etymology.** The species name honors the labor of Dr. Nicolas Kusnezov, a pioneer myrmecologist in the studies of Argentinean ant fauna.

**Type material:** Holotype worker (1w) and three paratype workers #5712 Argentina, Río Negro, Conesa, 10-I-1950, Kusnezov, coll, deposited at IFML collection, Tucumán, Argentina.

**Type locality:** Argentina, Río Negro, Conesa.

**Discussion.** This species is close to *P. andinus* from which it can be differentiated by the following characters: CI: 101-103. *P. kusnezovi* is larger than *P. andinus*, with shorter scape, and darker body. The development of the upper and lower propodeal spine is another useful character to distinguish both species.

**Biology.** Nest entrances are exposed, and built in an open area, with no vegetation surrounding the nest. Workers were relatively abundant and conspicuous on the ground. (comments of N. Kusnezov).

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## LITERATURE CITED

1. CLAVER, S. & H. G. FOWLER. 1993. The ant fauna (Hymenoptera, Formicidae) of the Ñacuñán Biosphere Reserve. *Naturalia* 18: 189-193.
2. FERNÁNDEZ, F. & E. E. PALACIO. 1998. Clave para las *Pogonomyrmex* (Hymenoptera: Formicidae) del Norte de Sudamérica, con la descripción de una nueva especie. *Revista de Biología Tropical* 45 (4): 1649-1661.
3. GALLARDO, A. 1931. Deux nouvelles especes de *Pogonomyrmex* de la Republique Argentine. *Revista del Museo de la Plata* 33: 185-188.
4. GALLARDO, A. 1932. Las hormigas de la República Argentina. Subfamilia Mirmicinas. Segunda ed. Eumyrmicinae, género *Pogonomyrmex* Mayr. *Anales del Museo Nacional de Historia Natural "Bernardino Rivadavia"* 37: 89-169.
5. KUSNEZOV, N. 1949. *Pogonomyrmex* del grupo *Ephebomyrmex* en la fauna de la Patagonia. *Acta Zoológica Lilloana* 8: 291-307.
6. KUSNEZOV, N. 1951. El género *Pogonomyrmex* Mayr. *Acta Zoológica Lilloana* 11: 227-333.
7. LATTKE, J. 2006. A new species of *Pogonomyrmex* from gallery forests of the Orinoco Watershed, Venezuela. *Myrmecologische Nachrichten* 8: 53-57.
8. MACKAY, W. P., E. E. MACKAY, J. F. P. DOMÍNGUEZ, L. I. V. SANCHEZ & P. V. OROZCO. 1985. Las hormigas del estado de Chihuahua, México: el género *Pogonomyrmex*. *Sociobiology* 1: 39-54.
9. MAYR, G. 1868. Formicidae novae americanae collectae a Prof. P. de Strobel. *Anuario della Societa dei Naturalisti Modena* 3: 161-178.
10. TABER, S. W. 1990. Cladistic phylogeny of the North American species complexes of *Pogonomyrmex*. *Annals of the Entomological Society of America* 83: 307-316.
11. TABER, S. W. 1998. *The World of the Harvester Ants*. Texas A&M University Press, Texas.
12. VÁZQUEZ-BOLAÑOS, X. & W. M. MACKAY. 2004. Una especie nueva de la hormiga cosechadora del género *Pogonomyrmex* (Hymenoptera: Formicidae) de México. *Sociobiology* 44: 283-287.