

**THE NEOTROPICAL GENUS *BRACHYMYRMEX* MAYR, 1868  
(HYMENOPTERA: FORMICIDAE) IN ARGENTINA. REDESCRIPTION OF  
THE TYPE SPECIES, *B. PATAGONICUS* MAYR, 1868; *B. BRUCHI*  
FOREL, 1912 AND *B. OCULATUS* SANTSCHI, 1919**

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**RESUMEN**

El género *Brachymyrmex* es originario de la Región Neotropical donde incluye aproximadamente 30 especies, de las cuales 26 se han citado para la Argentina. Fue establecido para *B. patagonicus* (Mayr 1868). Santschi (1923) hizo la única revisión sistemática completa del género existente hasta la fecha, pero restan ambigüedades en la identificación de algunas especies. En este trabajo se redesciben la especie tipo del género, *B. patagonicus*, como asimismo *B. bruchi* y *B. oculatus*. Se acompañan las descripciones de las diferentes castas (obrero, reina y macho) con ilustraciones de los principales caracteres morfológicos utilizados en la identificación. Se designa lectotipo para *B. oculatus*. El material estudiado pertenece al Museo Argentino de Ciencias Naturales "B. Rivadavia", al Naturhistorisches Museum Wien, y al Museo de La Plata.

**Palabras Clave:** *Brachymyrmex*, sistemática, taxonomía, diagnóstico.

**ABSTRACT**

Of the 30 Neotropical species of *Brachymyrmex*, 26 live in Argentina. This genus was originally proposed by G. Mayr for the Argentinian *B. patagonicus*. Santschi published the only systematic revision presently available, but several species cannot be yet easily separated or named. In this paper we redescibe *B. patagonicus* - the type species of *Brachymyrmex* - as well as *B. bruchi* and *B. oculatus*. Descriptions and drawings of the main morphological characters of queens, males and workers are given. Analyzed specimens belong to the Collections in the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Museo de La Plata, Argentina and the Naturhistorisches Museum Wien. New characters are used to differentiate species, mainly male head morphology and genitalia. Two new synonymies are proposed: *B. patagonicus* var. *atratus* = *B. patagonicus* and *B. bruchi* var. *rufipes* = *B. bruchi*, as we do not consider that differences in worker body color justify subspecific separation. Lectotype is designated for *B. oculatus*.

**Key Words:** *Brachymyrmex*, systematics, taxonomy, diagnosis.

**INTRODUCTION**

The genus *Brachymyrmex* was proposed by G. Mayr in 1868 to include *Brachymyrmex patagonicus*, and is placed within the tribe Myrmelachistini Forel of the Formicinae Lepel., found in the Ethiopic, Nearctic and Neotropical zoogeographic regions.

These are very small ants, measuring up to 2.5 millimeters total length, with dimorphic workers, and are easily recognizable by their nine segmented antennae. Most of them nest underground, but some of them are arboreal. Santschi (1923) published the only available systematic revision of the genus, recognizing 26 species in Argentina, based on imprecisely defined morphological features and providing scanty information in the original descriptions.

In this study we elaborate the diagnosis and redescribe the type species of the genus, *i.e.* *B. patagonicus* Mayr, 1868. We also redescribe *B. bruchi* Forel and *B. oculatus* Santschi.

## MATERIAL AND METHODS

All measurements are in millimeters. External morphology measurements were taken using a millimetric eyepiece of a Kyowa 72x microscope and those of the male genitalia with a 150x Medilux-12 Kyowa optical microscope.

Descriptions are accompanied by drawings under camera lucida and SEM photographs. Material studied is housed in the Museo Argentino de Ciencias Naturales “Bernardino Rivadavia” (Buenos Aires, Argentina), the Naturhistorisches Museum Wien (Vienna, Austria) and Museo de La Plata (La Plata, Argentina).

Measurements and indexes used in the redescrptions are defined in the following manner:

- TL:** length, in lateral view, from the anterior edge of the clypeus /except Md) until the last segment of the metasoma.
- HL:** maximum length measured from the apical edge of the clypeus to the midpoint of the superior margin of the head in full frontal view.
- HW:** maximum width of head, including the eyes, in full frontal view.
- EL:** maximum diameter of the compound eye in lateral view.
- EW:** maximum ocular width in lateral view.
- IOD:** interocular distance, measured on the straight line between the inner margins of the eyes.
- COD:** clipeo-ocular distance.
- MW:** maximum width of the mesosoma of the queen.
- SL:** length of the scape, from the base (excluding the basal condyle) to the tip.
- TrL:** Trunk length of the thorax, from the anterior edge of the pronotum (excluding the cervical flank) to the posterior edge of the metapleural gland.
- F:** length of the anterior femur.
- FL:** length, in lateral view, from the anterior edge of the clypeus (except Md) until the last segment of the metasoma.
- DEP:** propodeal and mesothoracic spiracle distance.

## RESULT

### *Brachymyrmex* Mayr

*Plagiolepis* (in part): Roger 1863: 162  
*Brachymyrmex* Mayr 1868: 163; Kemp 1972: 37  
Type specie: *Brachymyrmex patagonicus* Mayr 1868 (by monotypy)  
Revision: Santschi 1923: 650-678.

**Diagnosis of the worker:** Head often with smooth and shiny tegument or with punctuated sculpture (72X). Antennae with 9 segments. Scapes reaching or overlapping upper margin of head in frontal view. Composite eyes well developed. Ocelli present, except in *B. heeri* Forel. Frontal groove present or incomplete. Mandibles with strong apical tooth and small basal tooth. Small dentricle between tooth 2 and tooth 3. Palpal formula 6, 4. Clypeus wide, with 4-14 pairs of long hairs or macrochetae. Mesosoma small, rather short, inerme. Pronotum wider than mesonotum and propodeum. Metanotal sulcus present, generally wide. Dorsal area of thorax entirely covered with short pubescence (35 - 45 micron), decumbent, accompanied by long erect hairs (80 - 90 microns), distributed in different densities in each part of thorax. Cuticle poorly sclerotized, microsculptured under high magnification (2000X). Petiole with low wedge-shaped node. Neotropical species are small-sized.

**Diagnosis of the queen:** Similar to the worker, but longer and larger. Ocelli well developed. Mandibles with well developed apical tooth and very small basal tooth. Four additional teeth, with no diastemata, with long hairs. Palpal formula 6, 4. Mesosoma modified for flight. Tegument sculpture punctuated. Anterior wing with first sub-marginal cell closed; others open. Pterostigma present. Posterior wing with 5 to 7 hamuli. Gaster with long erect hairs along apical edge of each tergite and sternite.

**Diagnosis of the male:** Similar to worker in many features. Maxillary palpi with four segments; two segments in labial palpi. Mandibles monodentate. Ocelli and composite eyes well developed. Frontal groove complete or not. Antennae with 10 segments. Wings like in the queen. Aedeagus with well developed aedeagal lobe and ventral edge dentate. Size small.

### *Brachymyrmex patagonicus* Mayr (Fig. 1)

*Brachymyrmex patagonicus* Mayr, 1868: 164 male and female; Emery, 1905: 179 worker. Type locality: Argentina, Patagones, provincia de Bs.As. (no further information given) (Type missing).  
Distribution: Argentina: Santa Cruz, Chubut, Río Negro, Neuquén, Mendoza, Buenos Aires, Córdoba, Catamarca, Chaco, Corrientes, Salta, Formosa, La Pampa.; Paraguay; Bolivia; Brasil: RS, SP, RJ, AM; Guianas; Venezuela.  
*B. patagonicus* var. *atratus* Santschi, 1923: 656, 657 worker; new synonymy.  
Type locality: Alfarcito, in the province of Jujuy, Argentina.  
Distribution: Jujuy, Mendoza.

#### Worker

**Diagnosis of worker:** TL: 0.81-0.85 mm. Light to very dark brown color. Scapes exceeding the upper margin of head for 1/5 (0.085mm) of their total length (0.44 mm). Eyes large, at the mid-third of head side (COD: 0.09 - 0.12). Frontal groove reaching middle ocellus. Pronotum sub-pentagonal in dorsal view. Metanotal groove very thin, like a narrow band between mesothoracic spiracles.

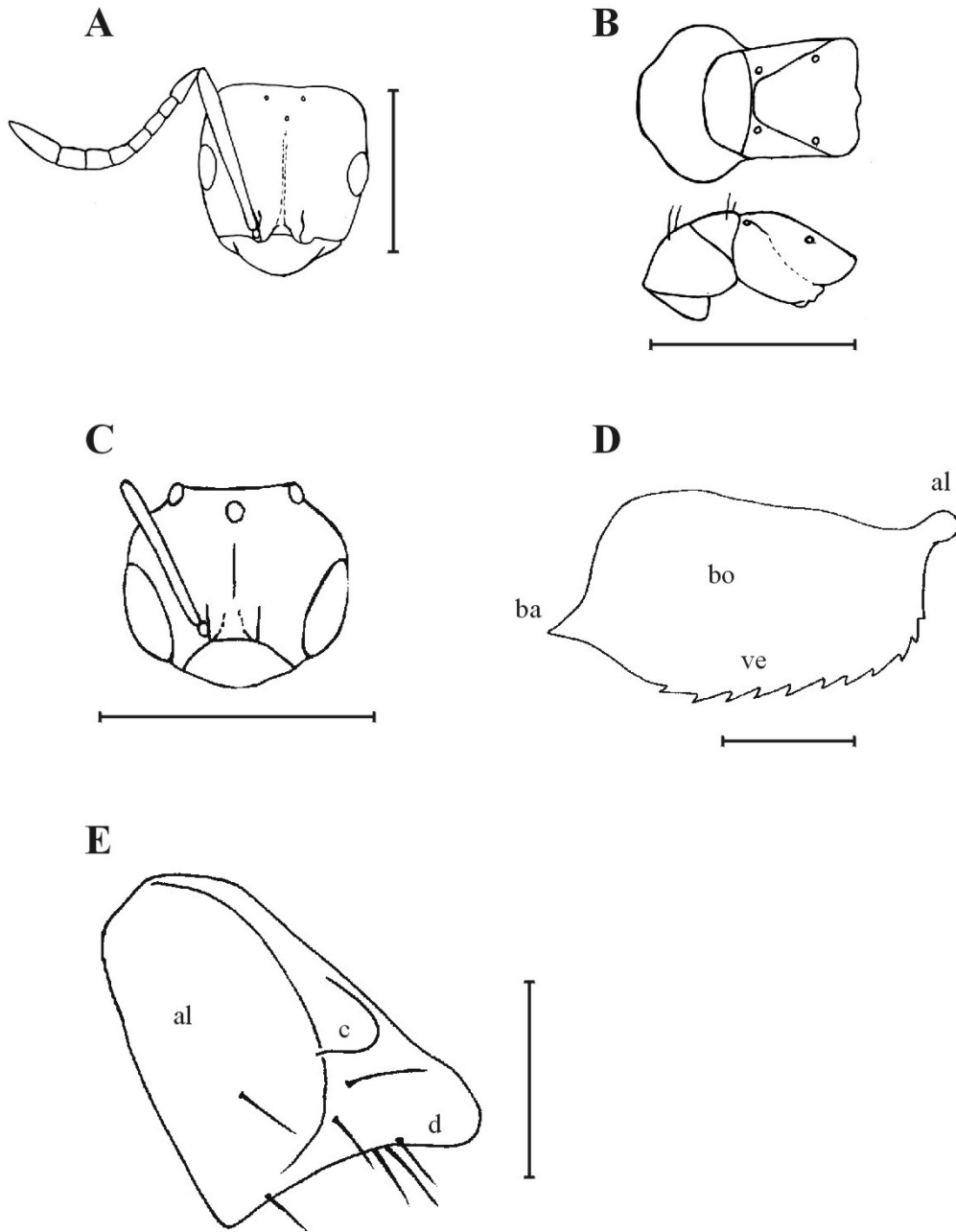


Figure 1

*Brachymyrmex patagonicus* Mayr: A. Head of a worker, anterior or frontal view (Scale bar: 500  $\mu$ m). B. Mesosoma (lateral and dorsal view) (Scale bar: 500  $\mu$ m). C. Head of a male (Scale bar: 500  $\mu$ m). D. Aedeagus (bo: body; al: aedeagal lobe; ba: base; ve: ventral edge). (Scale bar: 100  $\mu$ m). E. Volsella (bo: body; c: cuspis; d: digitus) (Scale bar: 100  $\mu$ m).

**Description:** Light pale brown body with darker head, which is sometimes very dark brown. Fine pubescence on thorax and head; integument smooth and shiny on latter. Six long erect hairs (3 to 4 times as long as the fine pubescence) on frontal lobes; one pair of hairs along occipital margin. Frontal groove present, reaching middle ocellus. Three small ocelli. Isosceles frontal triangle. Clypeus large, with rounded margin, with 6 - 8 long clypeal hairs (about 4 times as long as fine pubescence) and several hairs of intermediate length. Head wider than long, sub-rectangular, narrowing to 1/10 of width in front of eyes. Upper margin of head centrally excavated. Scapes overlapping upper margin of head for 1/5 (0.08 mm) of their total length. Measurements of antennomeres of funiculus as follows (length and width): first: 0.09-0.04; second: 0.05-0.08; third and fourth: 0.08-0.04; fifth and sixth: 0.08-0.05; seventh: 0.09-0.05 and eighth: 0.18-0.09. Large eyes placed in mid-third of head side (Fig. 1A). Pronotum sub-pentagonal in dorsal view (Fig. 1B); anterior surface very inclined when seen laterally. Side of pronotum narrow and long, surrounding anterior half of pronotum. Mesonotum triangular in lateral view, bounded by well marked promesonotal and posterior mesonotal sutures. These join at mid-thorax to form suture that separates pronotum from mesopleuron, continuing as single suture right up to edge. Union of both sutures occurs at approximately half of total length. Propodeum sub-trapezoidal dorsally. Metanotal groove very narrow, like narrow band between mesothoracic spiracles (Fig. 1B). Latter and propodeal spiracles separated by distance equivalent to five times their diameter. Gaster with long erect hairs, mixed with fairly sparse fine pubescence, through which very delicate sculpture of furrows or punctae can be observed.

**Dimensions of the specimen described:** TL:0.87. HL:0.46. HW: 0.41 IH:111,11. EL:0.12. EW: 0.09. IE: 125. IOD: 0.39. COD: 0.14. LS: 0.44. IS: 105,56. DEP: 0.115. LF: 0.32. IF :77,78. Variations in the dimensions (n=10): TL: 0.81-0.85. HL: 0.44-0.46. HW: 0.37-0.41 IH: 111-125. EL: 0.12-0.14. EW: 0.07-0.09. IE: 125-166. IOD: 0.32-0.35. COD: 0.09-0.12. LS: 0.44. IS: 105-112. DEP: 0.115. IP: 133. LF: 0.32-0.35. IF: 82-93.

#### **Female**

**Diagnosis of queen:** TL: 1.96 mm. Light brown color. Scapes (0.58 mm) overlapping the upper margin of head by ¼ of their length (0.145 mm). Anepisternum and katepisternum separated by well marked suture with long erect hairs. Large eyes on central part of head side.

**Description:** Light brown color. Head finely and heavily pubescent. Long erect hairs about 3 or 4 times length of fine pubescence. Large compound eyes, on central part of head side. Measurements of antennomeres of funiculus as follows (length and width): first, 0.16-0.06; second, third and fourth: 0.09-0.06; fifth, sixth and seventh: 0.10-0.06; eighth: 0.23-0.08, no erect hairs. Antennal scrobes barely marked. Frontal lobes well developed. Scapes overlapping margin of head (in lateral view) by ¼ of their length, *i.e.* 0.145 mm (not counting the condyle), being thicker on apical portion of margin. Frontal groove well marked. Frontal triangle with wide base. Clypeus wide and finely pubescent, with longer clypeal hair on middle areas than on lateral ones. Thorax reticulate in transmitted light. Thorax with 30 to 40 long erect hairs, about 3 or 4 times length of fine pubescence, which covers entire body, moderately thickly. Propleuron small, elongate, triangular in lateral view. Anepisternum and katepisternum separated by a well defined suture, with long, erect hairs, which are also present on coxae. Pterostigma present. Posterior wing with seven hamuli. Gaster with long, erect hairs along apical edge of each tergite and sternite.

**Dimensions of studied specimen:** TL: 1.96. HL: 0.80. HW: 0.58. IH: 140. EL: 0.25. EW: 0.21. IE: 122. IOD: 0,58. COD: 0.12. LS: 0.58. IS: 100. LF: 0.62. IF: 108. IT: 105.7

#### Male

**Diagnosis of male:** L: 1.0-1.2 mm. COD: 0,02 mm. Light brown with darker to very dark head; scapes (0.18 mm) overlapping posterior cephalic margin by more than 1/5 length (0.036 mm).

**Genitalia:** aedeagal lobe with truncated and rounded apex, body with almost parallel margins, wider anteriorly, with dented ventral edge and truncated upper margin ending in short and narrow base. Sub-triangular volsella, with posterior margin of digitus not forming straight angle with its body, with a small and rounded cuspis. Few hairs; parameres with less than 25 hairs each.

**Description:** Very light brown color. Head darker. Appendixes light colored like the body. Head finely and sparsely pubescent. Integument smooth and shiny. Sub-trapezoidal clypeus. Head lacking long, erect hairs, except on mouth parts. Frontal groove well marked. Antennal scrobes marked, well defined. Frontal lobes very small. Large eyes on lower half of head (COD: 0.02 mm). Length of antennomeres of funiculus (length and width in millimeters) as follows: first: 0.07 - 0.04; second: 0.04 - 0.05; third fourth, fifth, sixth and seventh: 0.05 - 0.03; eighth: 0.06 - 0.04; ninth: 0.13 - 0.04. No erect hairs. Scape overlaps upper margin of head for 1/5 of their length in frontal view. They are thin, with a thickness similar along entire length (Fig. 1C). Pubescence of thorax sparse. Integument shiny. Sculpture of longitudinal and transverse grooves that render a reticulate appearance that can be observed by transparency. Notauli present. Five hamuli in posterior wing. Hairs along apical margin of wing shorter than hamuli, while both elements are of equal length along anal margin of wing.

**Genitalia:** aedeagal lobe with truncated, rounded apex, body with almost parallel margins, wider anteriorly, with dented ventral edge (11 teeth) and truncated upper margin ending in short and narrow base (Fig. 1D). Sub-triangular volsella, with posterior margin of digitus not forming straight angle with body, with small, rounded cuspis (Fig. 1E). Few hairs on parameres and volsella.

**Measurements of specimen described:** TL: 1.2. HL: 0.44. HW: 0.28. IH: 158.33. EL: 0.18. EW: 0.16. IE: 114.29. IOD: 0.25. COD: 0.02. LS: 0.18. IS: 66.67. LF: 0.37. IF: 133.33. IT: 131.58.

Variations in measurements (n=4): TL: 1.0-1.2. HL: 0.39-0.44. HW: 0.28. IH: 141-158. EL: 0.18 EW: 0.14-0.16. IE: 114-134. IOD: 0.23-0.25. COD: 0.02. LS: 0.18-0.28. IS: 66-100. LF: 0.37-0.44. IF: 133-158. IT: 117-135.

**Material examined:** Type series: In the original publication, Mayr included the description of the worker and the male, but did not mention the number of specimens studied nor where the material was housed. Mayr identified several specimens from Chile and labeled them as “type”, but they were not used in the original description so they cannot be considered as “syntypes”.

#### MACN

- Alta Gracia, province of Córdoba, Argentina: one male (the one on top label is the one described herein); a second male on the lower label of the same pin, with the following inscriptions: “Est. La Granja, Alta Gracia, Córdoba, 1922 C. Bruch leg”.
- Alta Gracia, province of Córdoba, Argentina: two males, col. C.Bruch.
- Alta Gracia, province of Córdoba, Argentina: one queen, on a pin with the following label: Est. La Granja, Alta Gracia, (Córdoba), col. C. Bruch. *Brachymyrmex patagonicus* Forel.
- Alta Gracia, province of Córdoba, Argentina: eight workers, on a pin labelled “Est. La Granja, Alta Gracia, (Córdoba)”.

#### NHMW

- Chile: one worker, on a pin with the following labels: 1st: Chile, col.G.Mayr. 2nd B. patagonicus G. Mayr Type.
- One worker with a 1st label: B. patagonicus. Chile, 2nd: collect. Mayr, 3rd: B. patagonicus. G. Mayr. Type.
- One worker with 1st label: Chile. Collect. G. Mayr, 2nd label: B. patagonicus. G. Mayr. Type.
- One worker with 1st label: det. G. Mayr. 1888. B. patagonicus, 2nd label: B. patagonicus. (pierced on a minutum).
- One worker (head missing) with 1st label: Chile. Collect. G. Mayr, 2nd label: B. patagonicus. G. Mayr. Type.

#### Discussion

*B. patagonicus* Mayr was described by Mayr (1868) based on workers and males collected in Río Negro (Argentina), all of them light colored. Santschi (1923) described as *Brachymyrmex patagonicus* var. *atratus* the workers collected in Alfarcito (Jujuy), which were dark colored. But among the specimens at the Naturhistorisches Museum Wien (Austria), the workers collected in Chile and Patagonia (Argentina) by G. Mayr are also dark, and are identified as *B. patagonicus*. Consequently, the color can not be used as the sole character for separating the two varieties, as they do not differ in other features. Therefore, *B. patagonicus* var. *atratus* is considered a synonym of *B. patagonicus*.

#### *Brachymyrmex bruchi* Forel

(Fig. 2)

*Brachymyrmex bruchi* Forel 1912: 64 worker and male; Santschi 1929: 309 worker.  
Type locality: Ollada (Filo Blanco de Aconquija), province of Catamarca, Argentina.  
Distribution: Catamarca, Jujuy, Buenos Aires, Santa Cruz.

*B. bruchi* var. *rufipes* Forel, 1912: 65 worker.

New synonymy

Type locality: Huasán, province of Catamarca, Argentina.

Distribution: Catamarca, Tucumán, Salta, Mendoza, Buenos Aires, Santa Cruz (Kempf, 1972).

#### Worker

**Diagnosis of the worker:** TL: 0.81-1.29 mm. COD: 0.12-0.14 mm. Color dark to light brown. Scapes (0.32 - 0.58 mm) exceeding the upper margin of head in frontal view for 1/5 of their length. Pronotum dorsally sub-hexagonal, with the anterior end narrower than the posterior one. Metanotal groove as a wide band when viewed dorsally. Frontal groove not reaching the middle ocellus.

**Description:** Color dark brown (specimens from Filo Blanco, Catamarca) to lighter brown (specimens Camarones, Chubut). Fine pubescence rather sparse all over body, allowing view of smooth and shiny tegument. Pubescent hairs long. Few long erect hairs on head and thorax, more numerous on gaster, where they are also longer. Hairs of head and thorax about three times as long as fine pubescence. On head they are placed on frontal crests arranged in three or four pairs and one pair on ocellar area. Frontal groove lacking pubescence, not reaching middle ocellus, very well defined along first 1/3 of length. Frontal triangle rather flat, not pointed and with wide base. Three small ocelli present. Compound eyes occupy middle third of side of head (Fig. 2A) (COD: 0.14 mm). Scapes

overlapping posterior cephalic margin (frontal view) by  $1/5$  (0.11) of length. Dimensions (length and width) of the first antennomere of funiculus are 0.11 and 0.04; second to fifth: 0.08 and 0.04; sixth: 0.10 and 0.05; seventh: 0.10 and 0.06; eighth: 0.19 and 0.06. Pronotum sub-hexagonal dorsally, with anterior end narrower than posterior end. Remainder mesosoma rectangular, with parallel margins, slightly towards posterior end (before reaching petiole) (Fig. 2B). Propleuron narrow, thin, long, surrounding pronotum as band on anterior half. Four to six long, erect hairs on pronotum. Mesosoma convex in lateral view. Mesonotum - when seen laterally - triangular in shape, bounded by well defined promesonotal and posterior mesonotal sutures. These sutures join to form single one between pronotum and mesopleuron, with six to eight long and erect hairs. Suture between meso-metapleuron and propodeum poorly defined (Fig. B). Base of propodeum forming angle of  $180^\circ$  or more with mesonotal profile. Propodeum subtrapezoid in lateral view, very narrow anteriorly, with wide metanotal groove, as a band between the mesothoracic spiracles, which are separated from the propodeal spiracles by a distance six times greater than diameter of propodeal spiracle.

**Dimensions of the specimen described:** TL: 1.04 mm. HL: 0.58. HW: 0.46. IH: 125. EL: 0.14. EW: 0.09. IE: 150. IOD: 0.44. COD: 0.16. LS: 0.55. IS: 120. DEP: 0.14. IP: 141.67. IT: 125. LF: 0.44. IF: 95. PW: 0.39. PL: 0.28. TrL: 0.58.

Variations in the measurements of the studied material (n= 28): TL: 0.81-1.29 mm. HL: 0.41-0.60. HW: 0.32-0.58. IH: 135.29-104.55. EL: 0.12-0.16. EW: 0.08-0.12. IE: 120-175. TrL: 0.41-0.62. IOD: 0.35-0.48. COD: 0.12-0.16. LS: 0.32-0.58. IS: 92-139.29. LF: 0.32-0.41. IF: 78.95-114.29.

#### Female

Unknown.

#### Male

**Diagnosis of the male:** TL: 1.3-1.4 mm. COD: 0.05 mm. Dark brown color. Scapes (0.30-0.37) exceeding the upper margin of head by  $1/3$  (0.1-0.12 mm) of their length, in frontal view.

**Genitalia:** aedeagal lobe with truncated apex, long and pronouncedly sloping downwards in natural position, with a dented ventral edge and an extended and tapering base. Volsella rectangular, with digitus forming a straight angle with the body of the volsella at the posterior margin; sparsely pubescent. Parameres very hairy.

**Description:** Head and body dark brown. Scapes and appendages lighter, pale. Large eyes occupying more than lower half of side of head (COD: 0.05 mm) (Fig. 2C). Clypeus well developed, rectangular to sub-trapezoidal, with three long erect hairs on middle and lateral portions; hairs up to four times as long as fine pubescence; additional intermediate hairs present. Mandibles monodentate, with long, erect hairs (similar to intermediate ones on clypeus). Frontal groove well marked. Dimensions (length and width) of antennomeres of funiculus are: first: 0.10 and 0.04; second to seventh: 0.06 and 0.04; eighth: 0.09 and 0.04; ninth: 0.19 and 0.05. Antennal scrobes well defined. Scapes overlapping upper margin of head by  $1/3$  of their length, in frontal view. Frontal lobes small. Notauli present. Anterior wings with the 1st sub-marginal cell closed, other cells open. Hairs along edge of wings equally long throughout. Genitalia: aedeagal lobe with truncated apex, long, and obviously sloping downwards in natural position, with parallel-edged body, albeit wider in middle zone, lower margin with 15 - 16 teeth; base extended and tapering (Fig. 2D). Volsella rectangular, with digitus forming straight angle with body of volsella at posterior end; cuspis and digitus truncated, but well developed. Sparse pilosity (Fig. 2E). Parameres very hairy (more than 25 hairs).



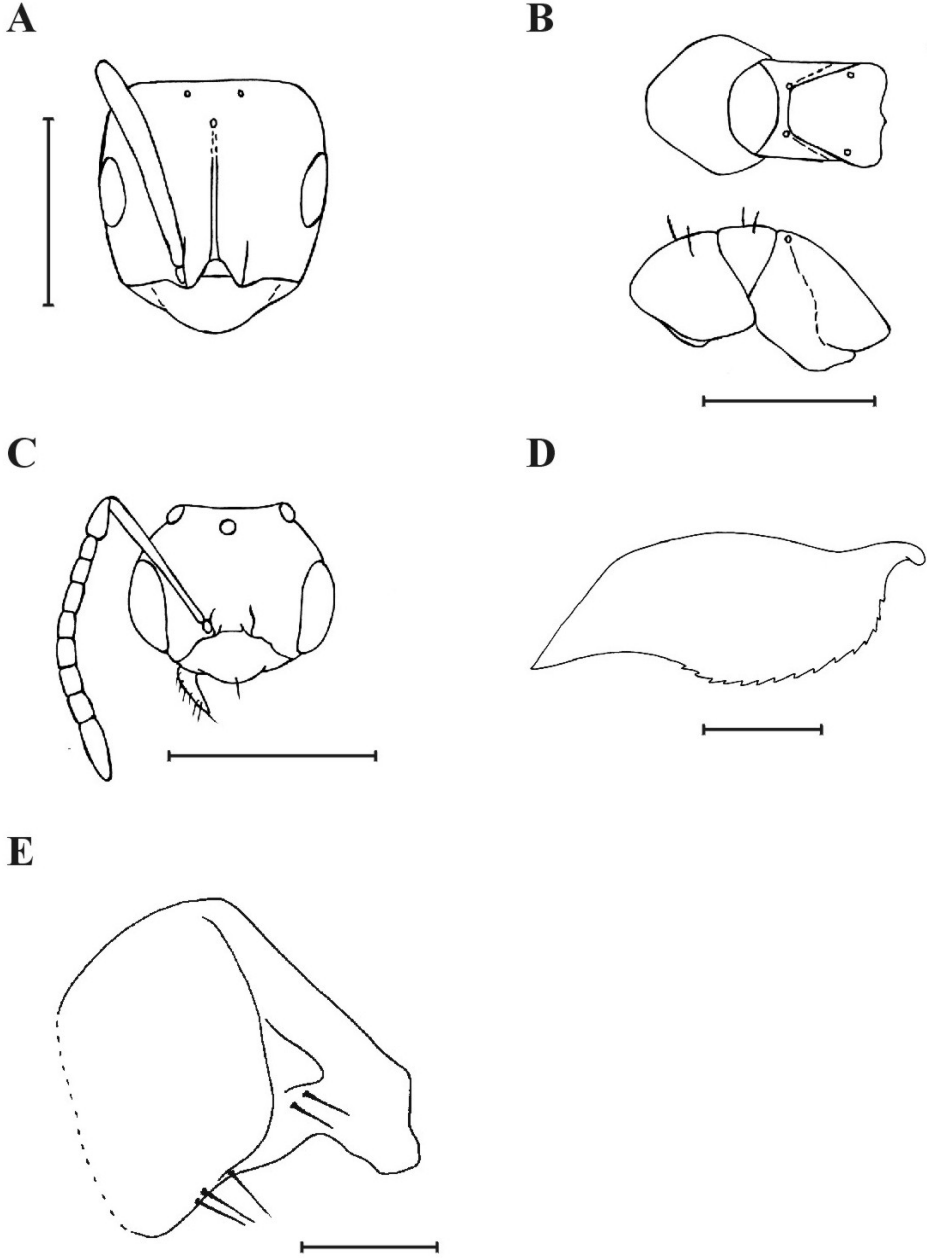


Figure 2

*Brachymyrmex bruchi* Forel: A. Head of worker, anterior or frontal view. B. Mesosoma (dorsal and lateral view) C. Head of a male. D. Aedeagus. E. Volsella.

**Dimensions of the specimen described:** TL: 1.3. HL: 0.53. HW: 0.35. IH: 153. EL: 0.18. EW: 0.16. IE: 114.29. IOD: 0.35. COD: 0.05. LS: 0.30. IS: 86.67. LF: 0.50. IF: 146.

Variations in the dimensions (n=1): TL: 1.4. WH: 0.46. HL: 0.35. IH: 133. EL: 0.18. EW: 0.16. IE: 114.29. IOD: 0.35. COD: 0.05. LS: 0.37. IS: 107. LF: 0.46. IF: 133.

**Material examined:** Type series: In the original publication, Forel (1912) included the description of a worker and a male, without mentioning the number of specimens or where they were housed.

**MACN**

- Filo Blanco, province of Catamarca, Argentina: 1) Syntypes: one male, col. C. Bruch 189. 4000 m.s.n.m. 12-II-1912. "Typus"; three workers, labeled Catamarca, Filo Blanco: Col. C. Bruch 189. "4000 m.s.n.m." "12-II-1912" "Typus"; one male labeled C. Bruch 189. 4000 m.s.n.m. 12-II-1912. "Cotypus".

Other material examined.

- Camarones, province of Chubut, Argentina: eight workers, "Wiederreccht" "1357".
- Catamarca, Argentina: two workers, col. C. Bruch. 189. "756".
- Catamarca, Argentina: one worker, col C. Bruch.
- Buenos Aires, Argentina: two workers, col. Bruch, 190. 24-XII-1914 "335":
- Tucumán, Argentina: two workers, 190, "647": "*B. bruchi rufipes*".

**MLP**

- Aconquija, province of Catamarca, Argentina: ten workers.
- Tucumán, Argentina: one worker, col. C. Bruch.

**Discussion**

The differences observed between *B. bruchi* Forel and *B. bruchi* var. *rufipes* Forel are based on the lighter color of *B. b.* var. *rufipes* Forel. We consider *B. bruchi* var. *rufipes* Forel a synonym of *B. bruchi* since the color is not a relevant character in this genus and specimens from the same colony may have different coloration.

***Brachymyrmex oculatus* Santschi**  
(Figs. 3)

*Brachymyrmex oculatus* Santschi 1919: 55 worker.

Type locality: Sierra de la Ventana, province of Buenos Aires, Argentina.

Distribution: Buenos Aires, Santa Fe, Entre Ríos, Córdoba, Chubut

**Worker**

**Diagnosis of worker:** TL: 0.71-0.92 mm. Light to dark brown in color, with lighter appendages. Scapes (0.35 - 0.46 mm) surpassing upper margin of head in frontal view for 1/4 (0.087 - 0.092 mm) of their length. Eyes placed on lower half of side of head. Metanotal groove very narrow.

**Description:** Color light to dark brown, with lighter appendages. Pubescence fine and sparse, not hiding integument, which is smooth and shiny on head; on mesosoma, integument shows rugose appearance due to fine punctuation and on mesonotum there are fine striae. Besides, there are six to eight hairs distributed this way: one pair along anterior margin of head and 2 - 3 pairs of hair on frontal lobes. Scapes overlapping upper margin of head in frontal view for 1/4 (0.11 mm) of their length. Length and width of antennomeres of funiculus as follows: first, 0.11- 0.04; second, 0.04 - 0.04; third, 0.06 - 0.04; fourth, 0.06 - 0.04; fifth, 0.09 - 0.04; sixth, 0.08 - 0.04; seventh, 0.09 - 0.05

and eighth, 0.18 - 0.06. Three ocelli present. Frontal groove ending at middle ocellus. Antennal scrobes barely marked. Head 1/10 wider than long, sub-quadrate; frontal triangle equilateral. Clypeus sub-trapezoidal. Eyes large (not reniform), with most of length on lower half of head side (Fig. 3A). Mesosoma rather convex in lateral view. Pronotum rounded dorsally, with promesonotal and metanotal sutures well marked (Fig. 3B). Propleuron elongate and with posterior end wider in lateral view. Mesonotum triangular (in lateral view), with promesonotal and posterior mesonotal sutures joining and ending in single one. Propodeum rectangular laterally; anterior face and posterior face of mesonotum meet at an angle of 170° or more (Fig. 3B). Gaster with long, erect hairs and placed on apical edge of each tergum.

**Dimensions of the specimens described:** TL: 0.92. HL: 0.48. HW: 0.41. IH: 116. EL: 0.13. EW: 0.12. IE: 120. IOD: 0.27. COD: 0.092. LS: 0.46. IS: 111. DEP: 0.115. LF: 0.36. IF: 75-100. Variations in the dimensions (n=25): TL: 0.71-0.92. HL: 0.39-0.51. HW: 0.36-0.43. IH: 105-129. EL: 0.13. EW: 0.09-0.12. IE: 120-150. IOD: 0.27-0.39. COD: 0.069-0.115. LS: 0.39-0.51. IS: 100-122. DEP: 0.092-0.115. LF: 0.27-0.39. IF: 75-100.

#### **Female**

Unknown.

#### **Male**

**Diagnosis of the male:** TL: 0.83 mm. Light brown head and darker gaster. Scapes (0.25mm) overlapping upper margin of head in frontal view for 1/7 to 1/8 (0.035 - 0.031 mm) of their length. Genitalia: aedeagal lobe truncated, with parallel margins, ventral margin dentate with 12 -15 teeth and a tapering base. Volsella triangular with the wider part exterior, with a narrow and blunt digitus at straight angles with the body of the volsella; cuspis narrow and somewhat arched at its inner end. Hairs placed in lines, along the posterior edge of body. Parameres hairy, with fewer than 20 - 25 hairs.

**Description:** Light brown head, gaster darker. Appendages same color as body. Head sparsely and finely pubescent. Integument smooth and shiny. Clypeus sub-trapezoidal, with few long erect hairs (about two to three times as long as fine pubescence). Head lacking long, erect hairs, except on mouth parts. Frontal groove well marked. Antennal scrobes well defined. Frontal lobes very small. Large eyes on lower half of head (Fig. 3C). COD: 0.02 mm. Notauli present. Posterior wing with five hamuli. Scapes overlapping upper margin of head in frontal view for 1/7 to 1/8 (0.035 - 0.031 mm) of their length. Mesosoma sparsely pubescent and with sculpture of longitudinal and transverse furrows that render a reticulated appearance. Genitalia: aedeagal lobe truncated, with parallel margins, ventral margin dentate with 12 -15 teeth and tapering base (Fig. 3D). Volsella triangular with outer wider part, with narrow, blunt digitus at straight angles with body of volsella (Fig. 3E); cuspis narrow and somewhat arched at its inner end. Hairs placed in rows, along posterior edge of body. Parameres hairy, with fewer than 25 hairs.

**Dimensions of the specimen described:** TL: 0.83. HL: 0.41. HW: 0.25. IH: 163.64. EL: 0.16. EW: 0.16. IO: 100. IOD: 0.23. COD: 0.023. LS: 0.25. IS: 100. LF: 0.37. IF: 145.45. Variation in the dimensions (n=2): TL: 0.83. HL: 0.41. HW: 0.25. IH: 163.64. EL: 0.16. EW: 0.16. IE: 100. IOD: 0.23. COD: 0.023. LS: 0.25. IS: 100. LF: 0.37. IF: 145.45.

**Type series:** In the original publications, Santschi (1919, 1923) included the description of the worker but did not specify the number of specimens. He deposited his material in the C. Bruch collection.

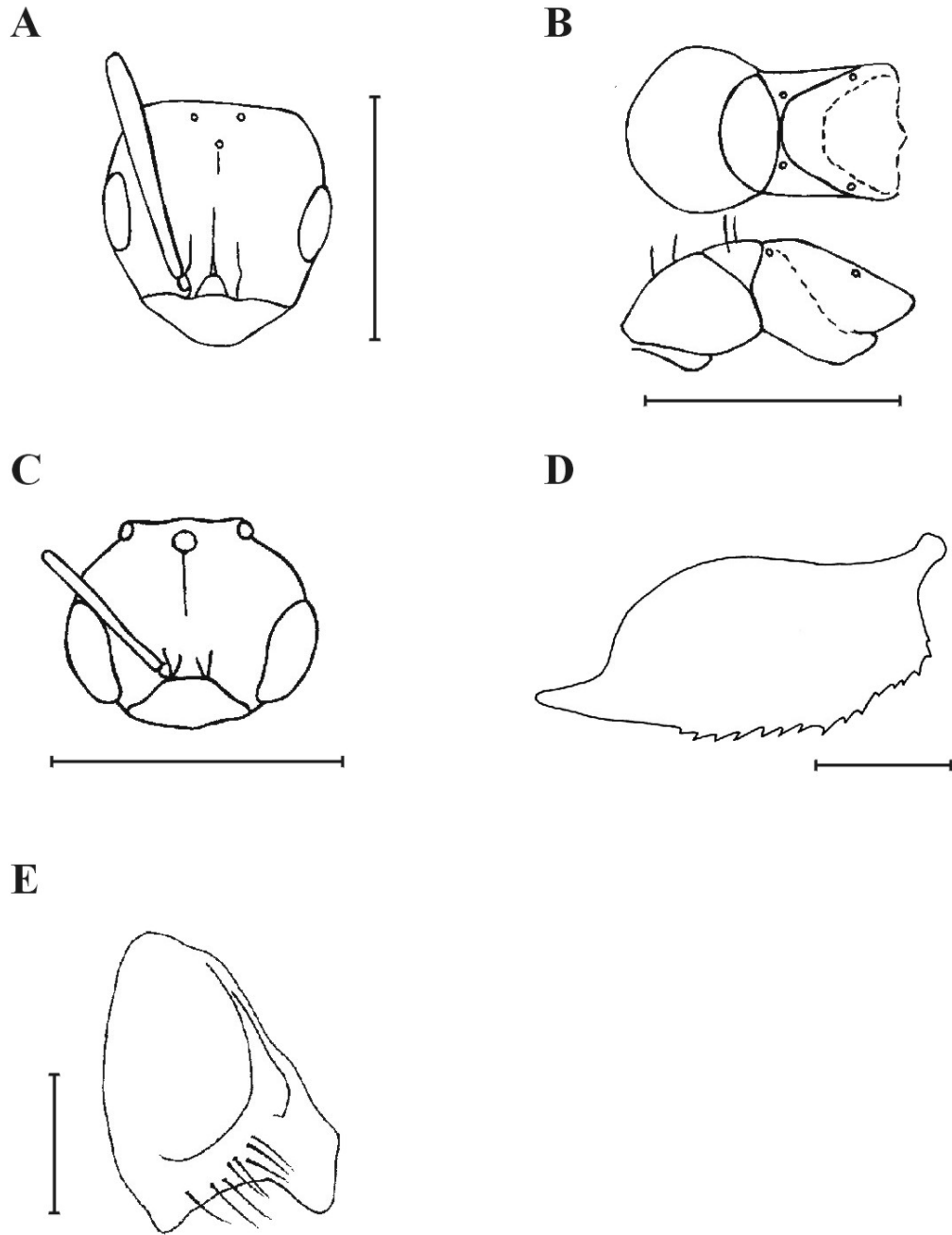


Figure 3  
*Brachymyrmex oculatus* Santschi: A. Head of worker. B. Mesosoma (dorsal and lateral view) C. Head of male. D. Aedeagus.  
E. Volsella.

**Lectotype (here designated).**

**MACN:** Sierra de la Ventana, province of Buenos Aires, Argentina: one male, labelled "Typus" and "454". Paralectotype: Sierra de la Ventana, province of Buenos Aires, Argentina: four workers labelled "Typus" and "454".

**Material examined**

**MACN:**

- Santa Fe (Fives Lilles), Argentina, twelve workers, col. Weiser.
- Entre Ríos, Argentina: six workers, col. C. Bruch, labeled "1051" and "1049".
- Estación Sosa, province of Entre Ríos, Argentina: three workers, labeled "524".
- Puerto Madryn, province of Chubut, Argentina: two workers and two males

**MLP:**

- Corrientes, Argentina: one worker labelled "190" and "1049".
- Villaguay, province of Entre Ríos, Argentina: one worker labeled "1049".

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**REFERENCES CITED**

- Emery, C. 1905. Studi sulle formiche della fauna neotropica. XXVI. *Bull. Soc. Ent. Ital.* 37:107-194, 47 figs.
- Forel, A. 1912. Formicides neotropiques. Part IV. Sous-famille Myrmicinae (suite). Part V. Sous-famille Dolichoderinae. Part VI. Sous-famille Camponotinae. *Mem. Soc. Ent. Belg.* 20:1-92.
- Kempf, W.W. 1972. Studia Entomológica. *Rev. Internac. de Entomología*. Vol. XV: IV+512 pp.
- Mayr, G. L. 1868. Formicidae novae americanae collectae a Prof. P. de Strobel. *Ann. Soc. Nat. Modena*, 3:161-178.
- Roger, J. 1863. Die neu aufgefuehrten Gattungen und Arten meines Formicidenverzeichnisses, nebst Ergaenzungen einiger frueher gegebenen Beschreibungen. *Berl. Ent. Zeitschr.* 7: 131-214.
- Santschi, F. 1919. Nouveaux Formicides de la Republique Argentine. *An. Soc. Cient. Argent.* 87:37-57, 6 figs.
- \_\_\_\_\_. 1923. Revue des fourmis du genre *Brachymyrmex* Mayr. *An. Mus. Nac. Hist. B. Aires*, 31:650-678, 4 est.
- \_\_\_\_\_. 1929. Nouvelles fourmis de la Republique Argentine et du Brasil. *An. Soc. Cient. Argent.* 107:273-316, 36 figs.

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