Systematics of the South American genus
Plumarius Philippi, 1873,
with descriptions of new species
(Hymenoptera, Plumariidae)

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ABSTRACT
This contribution presents the study of a first group of species of Plumarius Philippi, 1873, as the result of an extensive survey of the morphological variation present in males. The survey uncovered many useful characters to distinguish between the numerous species of the genus. The studied group consists of Plumarius hirticornis (André, 1909) and the following four new species: Plumarius willinki Fidalgo n. sp., Plumarius filipalpis Roig-Alsina n. sp., Plumarius spiniferus Roig-Alsina n. sp. and Plumarius gradifrons Diez n. sp. A characterisation of the group, descriptions and illustrations are provided. A lectotype is designated for Konowiella hirticornis André, 1909.

RÉSUMÉ

KEY WORDS
Chrysidoidea, Plumariidae, Plumarius, taxonomy, morphology, South America, new species.

MOTS CLÉS
Chrysidoidea, Plumariidae, Plumarius, taxonomie, morphologie, Amérique du Sud, espèces nouvelles.
INTRODUCTION

The family Plumariidae Bischoff, 1914 has been the subject of several recent contributions (Diez et al. 2007, 2010; Diez 2008; Diez & Roig-Alsina 2008) dealing with the description of new genera, the relationships of the genera within the family and the addition of new species to the until recently monotypic genus Plumaroides Brothers, 1974.

The family presently includes seven genera, four of which are monotypic: Myrmecopterina Day, 1977, Maplurius Roig-Alsina, 1994, Mapluroides Diez, Fidalgo & Roig-Alsina, 2007 and Pluroides Diez, Roig-Alsina & Fidalgo, 2010. Two other genera have a few described species: Myrmecopterina Bischoff, 1914 (Enderlein 1914; Brues 1924) and Plumarios (Diez 2008), while Plumarius Philippi, 1873 is a species-rich genus with twelve described species (Nagy 1973; Pérez D’Angelo 1974; Papp 2000; Penteado-Díaz & Scatolini 2003) and numerous undescribed species.

Plumariid wasps have a strong sexual dimorphism. Females are apterous, prognathous, have a flattened body and short legs with strong spiniform setae and stout femora (Evans 1966; Diez 2008), which suggest subterranean habits, although nothing is known on the biology of the group. Currently, a specimen described by Diez (2008) as the female of Plumarios tiphis Diez, 2008 has been attributed to Bethylidae Halliday, 1839 (Quintero & Cambra 2010). This matter is still under discussion, and further studies on morphology and molecular biology will determine the correct position of this specimen. Males are hypognathous, have long, slender legs and large wings with a characteristic venation, which includes an enormous pterostigma. Females are rarely collected, but males, which are attracted to lights at night, have accumulated in collections.

Plumariids occur in southern Africa and in South America, from Ecuador and Brazil to Chile and Argentina, with maximal diversity in the xeric regions of the latter two countries. Studies on the phylogeny of the family (Roig-Alsina 1994; Carpenter 1999; Diez et al. 2010; Brothers 2011) suggest two major lineages, both represented in the two continents. Myrmecopterina from South Africa and Plumarius from South America are the sister-group to the remaining genera, of which Myrmecopterina from Africa is the sister-group to the other four genera, all restricted to western and southern Argentina.

The distribution of Plumarius was discussed by Bradley (1972), who indicated its presence in Ecuador, Peru, Chile, Argentina and the state of Mato Grosso in Brazil. Recently Penteado-Díaz & Scatolini (2003) broadened the distribution of the genus, describing a new species from the state of Rio Grande do Norte, in northeastern Brazil and Quintero & Cambra (2010) reported the first record of the family Plumariidae from Paraguay.

The genus Plumarius and its type species P. niger were described by Philippi (1873) from Chile and attributed to the family Evaniidae Hedicke, 1939. The genus was not recognised by other hymenopterists, and André (1909) described the new genus and species Konowiella hirticornis based on specimens from Mendoza, Argentina, communicated to him by W. Konow, but he was doubtful about the affinities of the new taxon, and did not assign it to any family. Later, André (1913) and Bischoff (1914) published two further new species under Konowiella. It was Bradley (1921) who called attention to the affinity of Plumarius and Konowiella, proposing the synonymy of the two genera. All these works were based on the study of males only. Evans (1966) described the female of Plumarius for the first time, but refused to name his specimens, because of the outstanding sexual dimorphism and difficulty in associating the sexes. Nagy (1973) presented a revision, based on male specimens, of the species described to that time and added five new species, three from Chile and two from Argentina. A second female was described by Pérez D’Angelo (1974) from Chile as P. coquimbo. Recently, two new species based on males have been described, one from Argentina (Papp 2000) and another from Brazil (Penteado-Díaz & Scatolini 2003).

The present contribution deals with the study of a first group of species, as the result of an extensive survey of the morphological variation present in male Plumarius, which has uncovered many useful characters to distinguish between its numerous species.
MATERIAL AND METHODS

All studied specimens are males.

Terminology follows that of previous contributions (Roig-Alsina 1994; Diez et al. 2010), except as explained below.

The posterior surface of the head presents an extensive genal bridge, which covers most of the oral cavity. The area covering the oral cavity is convex, allowing space for the mouthparts; this convexity is called the suboral swelling. The suboral swelling is usually separated from the preoccipital carina, sometimes connected to it by a narrow, tapering, extension of the swelling, or by a carina. The genal bridge in some species is separated from the malar area by a carina, called the genal carina (Fig. 1C). Most measurements of the head are taken in frontal view, placing the upper margin of the head and the apex of the clypeus in the same focal plane. A diagram of these measurements is presented in Figure 1A. The distance between the torulus and the lateral ocellus is measured from the upper margin of the socket to the nearest point on the lower margin of the ocellus (Fig. 1A, a). The distance between the torulus and the clypeus is measured from the lower margin of the socket to the midpoint of the epistomal suture (Fig. 1A, b). The position of the median ocellus on the face varies considerably among species. Its position is indicated with respect to an imaginary line uniting the upper margins of the toruli, called the supra-torular line (Fig. 1A, c). When the median ocellus is above this line, the distance from its lower margin to the line is compared to the maximum diameter of the ocellus. The length of the malar area is taken at the level of the anterior mandibular condyle (Fig. 1B). The area below the toruli down to the upper margin of the clypeus is called the supraclypeal area. The pronotum laterally, parallel to the posterior margin, bears a carina, running from the level of the pronotal lobe downwards, called the pronotal lateral carina (Fig. 1D). The hind trochanter of nearly all species, and the hind coxa of several species, bear ventrally a specialised area, the ventral setose area (Fig. 2). The nomenclature used for the wing venation is shown in Figure 1F (following Brothers 2011). The nomenclature used for the genitalia is shown in Figure 1E.

ABBREVIATIONS

Repositories
IADIZA Instituto Argentino de Investigación de Zonas Aridas, Mendoza;
IFML Instituto Fundación Miguel Lillo, Tucumán;
MACN Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires;
MLP Museo de La Plata, La Plata;

Description

cu-a transverse vein;
DC discal cell;
M medial vein;
MC marginal cell;
Rs3 third abscissa of radial sector vein;
Rs4 fourth abscissa of radial sector vein.

SYSTEMATICS

Order HYMENOPTERA Linnaeus, 1758
Family PLUMARIIDAE Bischoff, 1914
Genus Plumarius Philippi, 1873

REMARKS

The species-group treated in this contribution includes P. hirticornis (André, 1909) and four new species described below. The hirticornis species-group, as it is here defined, may not be monophyletic, but given the large diversity of Plumarius and the poor knowledge of its species, we have considered it a useful first step to delimit certain preliminary species-groups until a phylogenetic analysis is possible.

The group can be identified by the following combination of characters, which separate it from other species of Plumarius, including those already named.

1) The hind coxa bears on the under surface a specialised setose area. This area, at least in P. hirticornis (André, 1909) and four new species described below. Roig-Alsina 1994). With the exception of P. spiniferus Roig-Alsina n. sp., which only has a coxal setose area, other species of this group also bear a setose area on the ventral surface of the hind trochanter (Fig. 2). All other species of Plumarius known to us bear a setose area on the hind trochanter only.
2) The median ocellus is either crossed by the supra-torular line, or it is above this line by a distance shorter than the ocellar diameter. This feature excludes from the group *P. andrei* (Bischoff, 1931), *P. baloghi* Nagy, 1973, *P. brasiliensis* Penteado-Díaz & Scatolini, 2003, *P. niger* and *P. tumidulus* Papp, 2000, which have the median ocellus above the supra-torular line by a distance at least as long as the ocellar diameter.

3) The vertex is smooth and shiny, at most with weak punctures behind the lateral ocellus. This differs from *P. chilensis* Nagy, 1973 and *P. densepunctatus* Nagy, 1973, which have the vertex punctate or rugose.

4) The suboral swelling is well separated from the preoccipital carina, although sometimes connected to it by a ridge. This differs from *P. striaticeps* (André, 1913) in which the suboral swelling reaches the occipital carina.

5) The anterior surface of the scutum is sparsely to moderately punctate. This characteristic differs from *P. argentinus* Nagy, 1973, which has the anterior surface of the scutum densely, rugosely punctate.

**Plumarius hirticornis** (André, 1909)  
(Fig. 3)


**Distribution.** — Argentina, provinces of Santiago del Estero, Catamarca, La Rioja, San Juan and Mendoza.

**Diagnosis.** — Bigibbous aspect of face in lateral view, due to convex clypeus and convex supra-carapaceal area.
South American genus *Plumarius* Philippi, 1873 (Hymenoptera, Plumariidae)

**Fig. 1.** — **A, B.** *Plumarius hirticornis* (André, 1909), lectotype; **A**, head, frontal view (a, distance between antennal socket and lateral ocellus; b, distance between antennal socket and clypeus; c, supra-torular line); **B**, head, lateral view; **C-F.** *Plumarius* sp.; **C**, head, ventral view; **D**, pronotum, lateral view; **E**, genital capsule, ventral view; **F**, wings (wing veins: M, RS; cells: DC, MC). Abbreviations: see Material and methods. Scale bars: 0.5 mm.
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1.0× diameter of lateral ocellus; postocellar distance 1.1× ocellocular distance. Antennocular distance 0.8× diameter of torulus; interantennal distance 5.0× antennocular distance. Vertex smooth, without striae, but with small punctures behind and between ocelli. Torulus closer to lateral ocellus than to clypeus (23:30). Lateral ocelli in frontal view below upper margin of head. Median ocellus crossed by supratorular line (Fig. 3A). Genal carina absent. Area between preoccipital carina and suboral swelling longer than length of swelling (1.3:1.1), without median longitudinal carina, but in larger specimens swelling continued by brief ridge (Fig. 3B). Malar area shorter than apical width of first flagellomere (7.0:9.5); with lateral striae. Supraclypeal area, in frontal view with striae and punctures on central region, and lateral striae evident; in lateral view gibbous (Fig. 3C). Epistomal suture distinct. Clypeus 1.1× wider than long, with lateral striae; with apico-lateral area scarcely bent forwards. Proportional lengths of segments of maxillary palp, from base to apex, ?:11:14:16:15:16 (first segment not measured).

Scape basally rounded. First flagellomere 4.9× as long as apical width, its length shorter than sum of lengths of scape and pedicel (47:59).

**Mesosoma**

Pronotum with area anterior to pronotal lobe smooth, not forming lower pocket; pronotal lateral carina distinct. Notaulus scarcely marked, as long as admedian line, with evident punctures. Metapostnotum with longitudinal striae reaching posterior margin. Propodeum transverse, swollen behind spiracle. Forewing: marginal cell with anterior margin 3× as long as posterior margin; vein Rs3 shorter than Rs4 (16:24); vein M separated from cu-a by 0.3× length of cu-a, discal cell rectangular. Pterostigma pilose. Hind wing: veins cu-a and M interstitial. Forebasitarsus without outer lateral spines. Hind coxa and hind trochanter with ventral setose area; hind basitarsus 1.4× as long as middle basitarsus; inner hind tibial spur 1.2× as long as outer spur.

**Metasoma**

Genital capsule of lectotype not dissected, Figure 3D depicts genitalia of specimen from 7 km N of Santa Térésita, La Rioja. Aedeagus with apical lateral spines.

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**REDESCRIPTION OF LECTOTYPE**

Length: 10 mm. Colour pale brown, with darker head. Body with short, sparse, evenly distributed setae. Body moderately sculptured, with fine punctures on supraclypeal area and small, dense punctures on anterior surface of scutum.

**Head**

1.1× wider than high in frontal view. Inner margins of orbits converging ventrally. Ocellocular distance 1.0× diameter of lateral ocellus; postocellar distance 1.1× ocellocular distance. Antennocular distance 0.8× diameter of torulus; interantennal distance 5.0× antennocular distance. Vertex smooth, without striae, but with small punctures behind and between ocelli. Torulus closer to lateral ocellus than to clypeus (23:30). Lateral ocelli in frontal view below upper margin of head. Median ocellus crossed by supratorular line (Fig. 3A). Genal carina absent. Area between preoccipital carina and suboral swelling longer than length of swelling (1.3:1.1), without median longitudinal carina, but in larger specimens swelling continued by brief ridge (Fig. 3B). Malar area shorter than apical width of first flagellomere (7.0:9.5); with lateral striae. Supraclypeal area, in frontal view with striae and punctures on central region, and lateral striae evident; in lateral view gibbous (Fig. 3C). Epistomal suture distinct. Clypeus 1.1× wider than long, with lateral striae; with apico-lateral area scarcely bent forwards. Proportional lengths of segments of maxillary palp, from base to apex, ?:11:14:16:15:16 (first segment not measured).

Scape basally rounded. First flagellomere 4.9× as long as apical width, its length shorter than sum of lengths of scape and pedicel (47:59).

**Mesosoma**

Pronotum with area anterior to pronotal lobe smooth, not forming lower pocket; pronotal lateral carina distinct. Notaulus scarcely marked, as long as admedian line, with evident punctures. Metapostnotum with longitudinal striae reaching posterior margin. Propodeum transverse, swollen behind spiracle. Forewing: marginal cell with anterior margin 3× as long as posterior margin; vein Rs3 shorter than Rs4 (16:24); vein M separated from cu-a by 0.3× length of cu-a, discal cell rectangular. Pterostigma pilose. Hind wing: veins cu-a and M interstitial. Forebasitarsus without outer lateral spines. Hind coxa and hind trochanter with ventral setose area; hind basitarsus 1.4× as long as middle basitarsus; inner hind tibial spur 1.2× as long as outer spur.

**Metasoma**

Genital capsule of lectotype not dissected, Figure 3D depicts genitalia of specimen from 7 km N of Santa Térésita, La Rioja. Aedeagus with apical lateral spines.

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**Fig. 2. — Plumarium filipalpis Roig-Alsina n. sp.: setose areas on hind coxa (Cx) and hind trochanter (Tr), ventral view. Scale bar: 0.1 mm.**
Fig. 3. — *Plumarius hirticornis* (André, 1909): A, B, paratype from the province of La Rioja, Santa Teresita, head, frontal view (A) and ventral view (B); C, paratype from Argentina, province of Mendoza, Lavalle, El Retamo, head, lateral view; D, genital capsule, ventral view. Scale bars: 0.5 mm.
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Variation
Length: 7.0-12.0 mm. In some specimens the setose area on the hind coxa is reduced to a rather narrow line of hairs. The distance between M and cu-a on the forewing varies from 0.2× to 0.6× the length of cu-a.

Plumarius willinki Fidalgo n. sp. (Fig. 4)


Type locality. — Argentina, province of Mendoza.

Distribution. — Argentina, province of Mendoza.

Etymology. — The species is named after Abraham Willink, distinguished Argentinean hymenopterist.

Diagnosis. — Large ocelli reaching upper margin of head in frontal view; triangular, apically pointed seventh tergum.

Description of holotype
Length: 5.0 mm (paratypes: 4.1-6.6 mm). Colour light brown with the head mostly dark. Body with short, sparse, evenly distributed setae; weakly sculptured.

Head
1.2× wider than high in frontal view; wider in dorsal view than width of scutum between tegulae (47:44). Inner margin of orbits converging ventrally. Ocellocular distance 0.6× diameter of lateral ocellus; postocellar distance 2.0× ocellocular distance. Antennocular distance 0.6× diameter of torulus; interantennal distance 5.7× antennocular distance. Vertex smooth, without striae or punctures anteriorly and weakly punctate behind lateral ocellus. Torulus closer to lateral ocellus than to clypeus (10:17). Lateral ocelli in frontal view reaching upper margin of head. Median ocellus crossed by supra-torular line (Fig. 4A). Genal carina present, distinct. Length of area between preoccipital carina and suboral swelling shorter than length of swelling (8:11); this area without median longitudinal carina (Fig. 4B). Malar area longer than apical width of first flagellomere (15:8), finely striate anteriorly. Supraclypeal area in frontal view with lateral striae extending to above upper level of torulus; medially with rounded, smooth elevation without striae and punctate. Epistomal suture evident. Clypeus 1.4× wider than long, with lateral striae; with apico-lateral area scarcely bent forwards; apically not truncate; in lateral view weakly rounded medially (Fig. 4C). Proportional lengths of segments of maxillary palp, from base to apex, 15:10:14:12:15. Scape without basal swelling or projection. First flagellomere 5.7× as long as apical width, with lateral striae; with apico-lateral area scarcely bent forwards; apically not truncate; in lateral view weakly rounded medially (Fig. 4C). Proportional lengths of segments of maxillary palp, from base to apex, 15:10:14:12:15. Scape without basal swelling or projection. First flagellomere 5.7× as long as apical width, its length subequal to sum of lengths of scape and pedicel (32:33).

Mesosoma
Area anterior to pronotal lobe with weak striae; pronotal lateral carina distinct, forming lower pocket. Notaulus weakly marked, as long as admedian line. Anterior surface of scutum without striae, weakly punctate. Metapostnotum with fine longitudinal striae reaching posterior margin. Propodeum transverse, swollen behind spiracle. Forewing: marginal cell with anterior margin 2.1× as long as posterior margin; length of veins Rs₃ and Rs₄ subequal (25:26); vein M separated from cu-a by 0.2× length of cu-a; discal cell rectangular. Pterostigma pilose. Hind wing: veins cu-a and M interstitial. Forebasitarsus with five outer lateral spines. Hind coxae and hind trochanter with ventral setose areas; length of middle basitarsus and hind basitarsus subequal (31:34); inner hind tibial spur 1.2× as long as outer spur.

Metasoma
Seventh tergum triangular, apically pointed. Genitalia as Figure 4D, aedeagus with apical lateral spines.

Variation
In some specimens the dark brown colour of the head is restricted to an area on the vertex. Other specimens have a dark brown metasoma. The distance between M and cu-a on the forewing varies from 0.2× to 0.3× the length of cu-a.
Plumarius filipalpis Roig-Alsina n. sp. (Fig. 5)

Type Locality. — Argentina, province of San Juan, Paso del Agua Negra.

Distribution. — Argentina, provinces of Salta, Jujuy, La Rioja and San Juan, and Peru, department of Puno.

Etymology. — The name of this species refers to its slender, long maxillary palps.

Diagnosis. — Slender, long segments of maxillary palps.

Description of holotype


Head

1.1× wider than high in frontal view; in dorsal view narrower than width of scutum between tegulae (49:57). Inner margin of orbits converging ventrally. Ocellcular distance 1.2× diameter of lateral ocellus; postocellar and ocellcular distances equal. Antennococular distance 0.7× diameter of torulus; interantennal distance 3.0× antennococular distance. Vertex smooth, without striae or punctures anteriorly, and weakly punctate behind lateral ocellus. Torulus closer to lateral ocellus than to clypeus (8:20). Lateral ocelli in frontal view below upper margin of head. Median ocellus crossed by supra-torular line (Fig. 5A). Genal carina present, distinct. Length of area between preoccipital carina and suboral swelling subequal to length of swelling (7:8); this area bearing median longitudinal carina (Fig. 5B). Malar area longer than apical width of first flagellomere (20:12), striate anteriorly. Supraclypeal area in frontal view, with lateral striae extending to above upper level of torulus; medially with rounded elevation without punctures or striae. Epistomal suture evident. Clypeus 1.3× wider than long, with lateral striae; with apico-lateral area bent forwards; apically truncate; in lateral view, weakly rounded medially (Fig. 5C). Proportional lengths of segments of maxillary palp, from base to apex, 10:10:15:25:23:20. Scape without basal swellings or projections. First flagellomere 8.0× as long as apical width, its length subequal to sum of lengths of scape and pedicel (32:33).

Mesosoma

Area anterior to pronotal lobe smooth; pronotal lateral carina distinct, forming lower pocket. Notaulus marked, as long as admedian line, with evident punctures around notaulus and between notaulus and admedian line; anterior margin of scutum aciculate. Metapostnotum with fine longitudinal striae reaching posterior margin. Propodeum transverse, swollen behind spiracle. Forewing: marginal cell with anterior margin 2.3× as long as posterior margin; vein Rs3 shorter than Rs4 (32:35); vein M separated from cu-a by 0.3× length of cu-a; discal cell rectangular. Pterostigma with median scarcely pilose area. Hind wing: veins cu-a and M interstitial. Forebasitarsus without outer lateral spines. Hind coxa and hind trochanter with ventral setose areas; hind basitarsus 1.3× as long as middle basitarsus; inner hind tibial spur 2.1× as long as outer spur.

Metasoma

Genitalia as in Figure 5D; aedeagus with apical lateral spines.

Variation

Specimens from Peru and Jujuy have a pale spot between the upper margin of the toruli and the median ocellus. The anterior margin of the clypeus varies from rather truncate to roundly produced. The median longitudinal carina between the preoccipital carina and the suboral swelling is weak to absent in some specimens from Salta. The mesoscutum presents distinct, large punctures between and around the notauli; in some specimens (Puno, La Rioja and Cachi) this punctuation is extended laterally, but away from the anterior margin. The distance between M and cu-a on the forewing varies from 0.1× to 0.5× the length of cu-a. Most specimens come from high altitudes in the Andes mountains, except a specimen from La Rioja.

Plumarius spiniferus Roig-Alsina n. sp.

(Fig. 6)

South American genus *Plumarius* Philippi, 1873 (Hymenoptera, Plumariidae)

**Etymology.** — The name of this species refers to the ventro-basal spiniform projection of the scape.

**Diagnosis.** — Scape with basal spiniform projection; lack of apical lateral spines on aedeagus; large median ocellus, placed above supra-torular line.

**Description of Holotype**
Length: 6.5 mm (paratypes: 4.5-7.6 mm). Colour dark brown, with mandibles, antennae and legs light

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**Fig. 5.** — *Plumarius filipalpis* Roig-Alsina n. sp.: A, paratype from the province of Jujuy, Agua de Castilla, head, frontal view; B, paratype from Peru, Puno, Sillustani, head, ventral view; C, paratype from the province of Jujuy, Agua de Castilla, head, lateral view; D, genital capsule, ventral view. Scale bars: 0.5 mm.
brown. Body with short, sparse, evenly distributed setae. Species weakly sculptured.

**Head**
1.4× wider than high in frontal view; width, in dorsal view, subequal to width of scutum between tegulae (31:32). Inner margin of orbits converging ventrally. Ocellocular distance 1.5× diameter of lateral ocellus; postocellar distance 0.9× ocellocular distance. Antennocular distance 1.0× diameter of torulus; interantennal distance 2.8× antennocular distance. Vertex smooth, without striae or punctures anteriorly, and weakly punctate behind lateral ocellus. Torulus closer to lateral ocellus than to clypeus (1.3:1.5). Lateral ocelli in frontal view below upper margin of head. Median ocellus above supra-torular line by 0.8× its maximum diameter (Fig. 6A). Genal carina present, distinct. Length of area between preoccipital carina and suboral swelling subequal to length of swelling (11:10); this area without median longitudinal carina (Fig. 6B). Malar area longer than apical width of first flagellomere (17:10), finely striate anteriorly. Supracylpeal area in frontal view, with lateral striae extending to above upper level of torulus; medially with rounded elevation with striae and evident punctures. Epistomal suture distinct. Clypeus 1.2× wider than long, with lateral striae; with apico-lateral area scarcely bent forwards; apically not truncate. Proportional lengths of segments of maxillary palp from base to apex, 15:10:15:12:15. Scape with a ventral-basal spiniform projection (Fig. 6C). First flagellomere 2.8× as long as apical width, its length shorter than sum of lengths of scape and pedicel (25:29).

**Mesosoma**
Area anterior to pronotal lobe smooth; pronotal lateral carina distinct, not forming lower pocket. Notaulus weakly marked, as long as admedian line. Anterior surface of scutum weakly striate and punctate. Metapostnotum with fine longitudinal striae reaching posterior margin. Propodeum transverse, swollen behind spiracle. Forewing: marginal cell with anterior margin 2.6× as long as posterior margin; vein Rs3 longer than Rs4 (30:35); vein M separated from cu-a by 0.4× length of cu-a; discal cell rectangular. Pterostigma pilose. Forebasitarsus without outer lateral spines. Hind coxa and hind trochanter with ventral setose areas; hind basitarsus 1.4× as long as middle basitarsus; inner hind tibial spur 2.0× as long as outer spur.

**Metasoma**
Genitalia as in Figure 6D; aedeagus without apical lateral spines.

**Variation**
The specimen from Patquia lacks striae on the supracylpeal area, which is sparsely punctate and smooth, shiny between punctures.

**Plumarium gradifrons** Diez n. sp.
(Fig. 7)

**Type Material.** — Holotype: Argentina, province of La Rioja, Patquia, Breyer, 1♂ (MACN en-9891).
Fig. 6. — *Plumarius spiniferus* Roig-Alsina n. sp.: A, paratype from Argentina, province of La Rioja, Anguiñán, Chilecito, head, frontal view; B, holotype, head, ventral view; C, another paratype from Argentina, province of La Rioja, Anguiñán, Chilecito, head, lateral view (the structure is spiniform, but the profile photo does not show well); D, genital capsule, ventral view. Scale bars: 0.5 mm.
Head
1.2× wider than high in frontal view; wider in dorsal view than width of scutum between tegulae (49:45). Inner margin of orbits converging ventrally. Ocellocular distance 0.9× diameter of lateral ocellus; postocellar distance 1.7× ocellocular distance. Antennocellar distance 0.6× diameter of torulus; interantennal distance 5.5× antennocellar distance. Vertex smooth, without striae or punctures. Torulus closer to lateral ocellus than to clypeus (10.5:20). Lateral ocelli in frontal view below upper margin of head. Median ocellus above supra-torular line by 0.3× its maximum diameter (Fig. 7A). Genal carina present, distinct. Length of area between preoccipital carina and suboral swelling subequal to length of swelling (1.1:1.2); this area without median longitudinal carina (Fig. 7B). Malar area longer than width of first flagellomere (1.2:0.9), without striae. Supraclypeal area, in frontal view, with distinct lateral striae and central smooth elevated area; in lateral view with step-like protuberance (Fig. 7C). Epistomal suture distinct. Clypeus 1.5× wider than long, with lateral striae; with apico-lateral area scarcely bent forwards. Proportional lengths of segments of maxillary palp from base to apex, ?:10:15:14:9:10. Scape basally with ventral rounded, compressed expansion (Fig. 7C). First flagellomere 5.8× as long as apical width, longer than sum of lengths of scape and pedicel (34:29).

Mesosoma
Area anterior to pronotal lobe smooth, not forming lower pocket; pronotal lateral carina distinct. Notaulus marked, as long as admedian line; anterior surface of scutum weakly punctate. Metapostnotum without longitudinal striae reaching posterior margin. Propodeum transverse, swollen behind spiracle. Forewing: marginal cell with anterior margin 2.4× as long as posterior margin; vein Rs3 shorter than Rs4 (17:22); vein M separated from cu-a by 0.4× length of cu-a, discal cell rectangular. Hind wing: veins cu-a and M interstitial. Forebasitarsus without outer lateral spines. Hind coxa and hind trochanter with ventral setose areas; hind basitarsus 1.3× as long as middle basitarsus; inner hind tibial spur 1.3× a long as outer spur.

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Fig. 7. — Plumarius gradifrons Diez n. sp.: A, B, paratype from the province of San Juan, Ruta 141 km 173 c, Caucete, head, frontal view (A) and ventral view (B); C, paratype from the province of La Rioja, 5 km S of Udpinango, head, lateral view; D, genital capsule, ventral view. Scale bars: 0.5 mm.
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