

A new species of the genus *Plumarius* Philippi (Hymenoptera: Plumariidae) from Brazil

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Key words: Hymenoptera; Plumariidae; *Plumarius*; new species; semiarid area; Neotropics; Brazil.

A new species of *Plumarius* Philippi is described from males collected in semiarid areas of Northeast Brazil. The genus is reported from Brazil for the first time.

Introduction

The family Plumariidae is an aberrant group of “primitive” aculeate wasps allied to the Bethyridae, geographically limited in their distribution to the arid and semiarid areas of subtropical South America and southern Africa (Nagy, 1973; Day, 1977; Finnamore & Brothers in Goulet & Huber, 1993). The described genera are known almost exclusively from male specimens. The genus *Plumarius* Philippi, 1873, comprises nine described Neotropical species from Chile and Argentina (Nagy, 1973). The males are winged and distinguished by the following characters: head with interorbital line strongly divergent posteriorly; antenno-ocular distance as long as or shorter than one-fourth of distance between antennal sockets; anterior ocellus strongly directed forward, and situated more or less between antennal sockets; frons separated from eye by a deep infraorbital groove and carina; clypeal lobe produced anteriorly and apically broadly rounded, their length nearly equal to their basal width; the bristles of antenna 5-6 times as long as width of a flagellar joint; second submarginal cell of fore wing broadly pentagonal and at most half as broad as first (Nagy, 1973; figs 10-12).

Only three females specimens, putatively of a species of *Plumarius* (Evans, 1966; Brothers, 1974) are known; they are apterous and have hypogaecic habits.

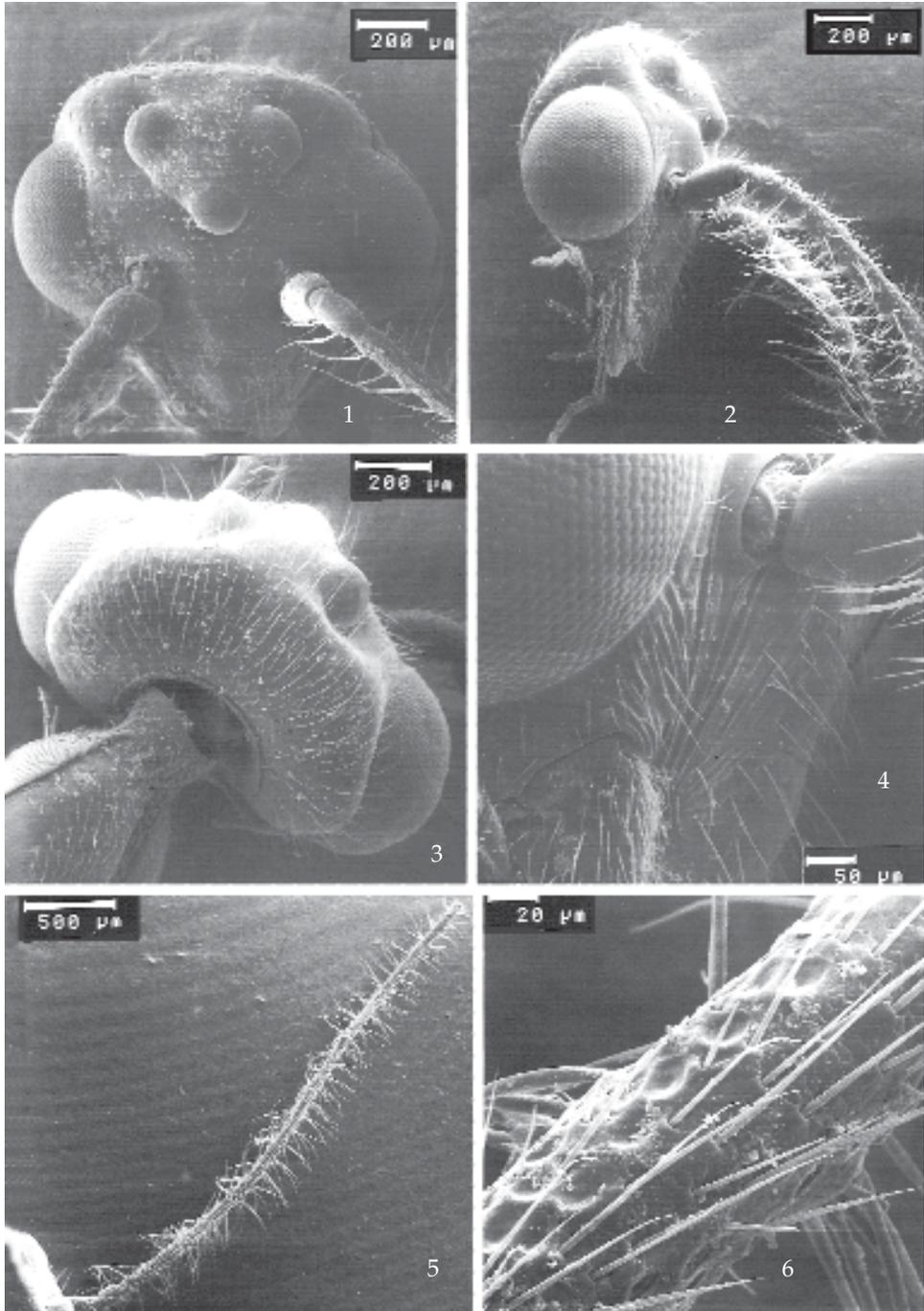
For the identification of the family Plumariidae, see Finnamore & Brothers in Goulet & Huber (1993) and for the terminology of the enervation, see Wharton et al. (1997). The genus *Plumarius* can be identified with keys provided by Nagy (1973) and Brothers (1974).

The material has been collected by Malaise and yellow pan traps in semiarid areas of Rio Grande do Norte State, Northeast Brazil, during August-December, 1999.

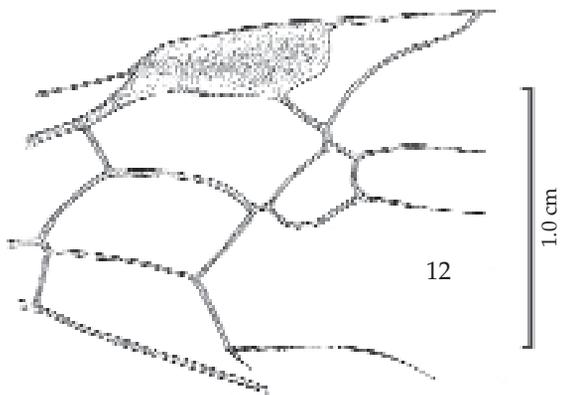
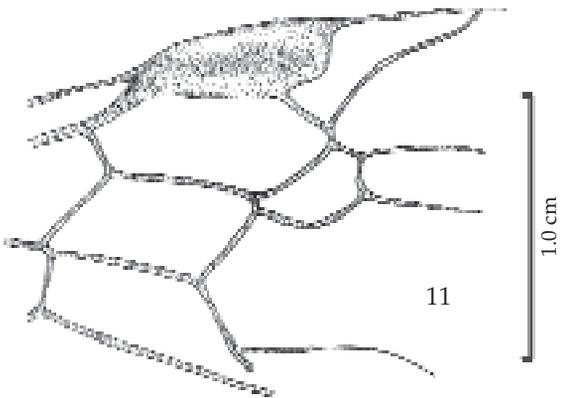
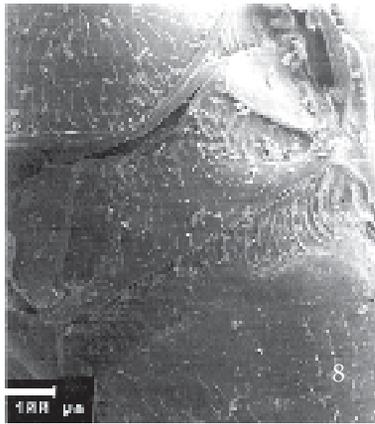
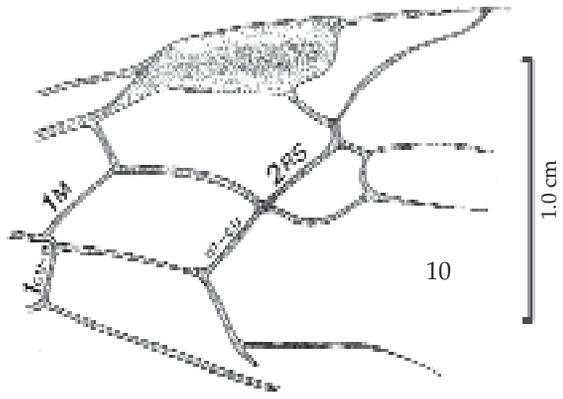
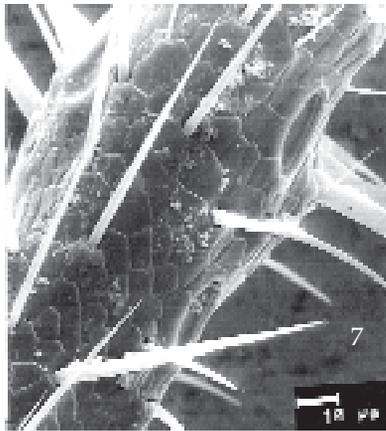
Description

Plumarius brasiliensis spec. nov.
(figs 1-15)

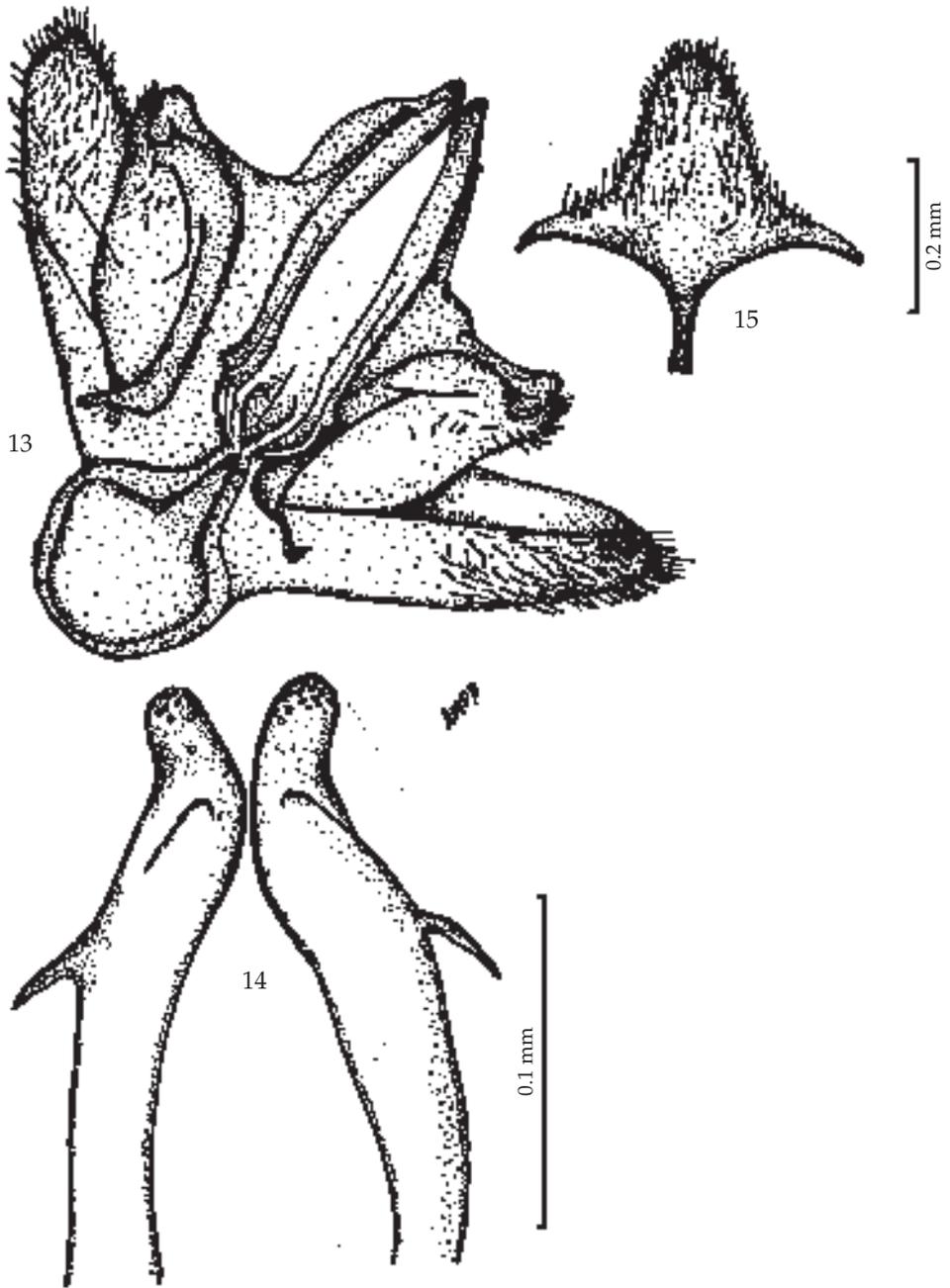
Material.— Holotype, ♂ (DCBU), “Brazil, Rio Grande do Norte, Água Branca, 6.x.1999, Malaise trap”.



Figs 1-6, *Plumarius brasiliensis* spec. nov., ♂, paratype. 1, head, dorso-frontal aspect; 2, head, lateral aspect; 3, head, dorsal aspect; 4, gena and face; 5, antenna; 6, flagellomere.



Figs 7-12, *Plumarius brasiliensis* spec. nov., ♂, paratype. 7, flagellomere; 8, detail of metanotum and base of propodeum, dorsal aspect; 9, mesosoma, dorsal aspect; 10-12, detail of fore wing.



Figs 13-15, *Plumarius brasiliensis* spec. nov., ♂, paratype. 13, male genitalia; 14, aedeagus; 15, hypopygium (= apical sternite).

Paratypes (30 ♂♂) (DCBU, MZSP, RMNH): 25.viii.1999, Malaise trap (3 ♂♂), 1.ix.1999, Malaise trap (4 ♂♂), 1.ix.1999, yellow pan trap (1 ♂), 8.ix.1999, Malaise trap (2 ♂♂), 8.ix.1999, yellow pan trap (6 ♂♂), 29.ix.1999, Malaise trap (1 ♂), 29.ix.1999, yellow pan trap (1 ♂), 6.x.1999, Malaise trap (4 ♂♂), 6.x.1999, yellow pan trap (1 ♂), 13.x.1999, Malaise trap (4 ♂♂), 20.x.1999, yellow pan trap (1 ♂), 3.xi.1999, Malaise trap (1 ♂), 16.xii.1999, Malaise trap (1 ♂).

Holotype, ♂, length about 5.9 mm. Body yellowish to light brown; head dark brown; pterostigma pale yellow to light brown; tegulae pale yellow, legs and metasoma pale yellow; mesosoma yellow; mandible and median area of clypeus yellow; tip of mandible dark brown; malar space slightly shorter than width of scape, shining and sparsely punctate, in anterior half finely crested. Clypeal disc broadly rounded at apex (fig. 1), surface broadly shining and carinulate only on the lateral above corners (fig. 4); the carinulate area separated from shining median area by a row of punctures. Face broadly shiny, laterally with moderately strong striations. Frontal area shiny, with a few scattered and small punctures in superior one third, front produced before base of clypeus as one fourth of width of scape. Antenno-ocular distance slightly shorter than diameter of an antennal socket (figs 2, 4). Anterior ocellus situated above level of upper border of antennal sockets by its minimum diameter (figs 1, 2). Vertex finely, transversely aciculate but not crested, and sparsely punctate (fig. 3). Antenna with conspicuous erect bristles, and consisting of 13 well-defined segments (fig. 5), 6-13 with a variety of prominent sensory pores (figs 6, 7). Mesoscutum polished and shiny, sparsely clothed with superficial, setiferous punctures (fig. 9); propodeum shiny, uniformly declivous, without distinct dorsal surface; anterior transverse area well impressed and carinulate (figs 8, 9); pre-scutellar sulcus carinulate; mesopleurum smooth and convex. Metasoma elongate, slightly flattened dorso-ventrally. Wings hyaline; fore wing m-cu arising directly in line with 2RS (fig. 10), (RS+M)b absent; veins 1M and 1cu-a of fore wing separated by a short vein 1CUa (fig. 10) Genitalia (fig. 13) basically simple; without noteworthy reductions or specializations. The small basal ring and the form of the aedeagus (figs 13, 14) and volsellae (fig. 13) are reminding of the Bethyliidae (Evans, 1966). The apical sternite (fig. 15) is a simple, tongue-shaped structure similar to that of certain Formicidae or Bethyliidae, and quite unlike the pseudosting of most Scoliidae (Evans, 1966).

Variation.— Length body 3.0-6.3 mm. The second submarginal cell of fore wing may be quadrangular (figs 10,12) or pentagonal (fig. 11); vein m-cu arising distad of 2RS (fig. 11), vein (RS+M)b absent or vein m-cu arising basad of 2RS and (RS+M)b often present (fig. 12).

Female.— Unknown.

Distribution.— Brazil.

Etimology.— The name refers to Brazil (South American), where the new species has been collected.

Using the key by Nagy (1973), *Plumarius brasiliensis* spec. nov. runs near *P. andrei* Bischoff and *P. baloghi* Nagy, but the enervation of the fore wing, the antenno-ocular distance and the genitalia are different, especially the aedeagus with its lateral projections apically and the less convex parameres indicate that *P. brasiliensis* is a separate species.

Acknowledgements and abbreviations

We are grateful to Odair A. Fernandes for collecting the material, our colleague Paloma Helena Fernandes Shimabukuro to the invaluable aid in the sorting the specimens, and FAPESP (Fundação de Amparo e Apoio à Pesquisa do Estado de São Paulo) and CNPQ (Conselho Nacional de Desenvolvimento Científico e Tecnológico) for financial support.

Abbreviations: DCBU stands for the Departamento de Ecologia e Biologia Evolutiva, Universidade Federal de São Carlos, São Carlos, SP, Brazil, MZSP for the Museu de Zoologia da Universidade de São Paulo, São Paulo, SP, Brazil and RMNH for the National Museum of Natural History, Leiden, The Netherlands.

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