

9-30-1955

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1955-6

DUSENIA: VI (5)
Dia 30 de Setembro de 1955

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Asidae - Anthophorinae
Hymenoptera - Apoidea - Canephorulini

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Canephorulini, a tribe of South American bees

(Hymenopt.- Apoidea)

C. D. MICHENER¹⁾, W. E. LA BERGE²⁾, and J. S. MOURE¹⁾

In 1944 one of us (Michener) regarded the South American bee genus *Canephorula* as a relative of the tribe Eucerini but as specimens were not then available to him, no firm action was taken with regard to the systematic position of the genus. Both sexes of *Canephorula apiformis* (Friese), the only known species of the genus, are now available to us. It seems probable that the genus is related to the Eucerini, but it exhibits so many unique characters that it must be placed in a separate tribe, the Canephorulini, of the Anthophorinae. The principal reason for placing *Canephorula* with the Eucerini is that it agrees with that tribe in having very long paraglossae. It seems likely that this is an indication of relationship but the similarity in this character may result from convergence. In all probability *Canephorula* arose from an ancestral pre-eucerine, to the characters of which evolution has added many specializations.

In the following description of *Canephorula*, the characters which are believed to be of tribal significance in separating it from the Eucerini are italicized. Because of these characters, the genus would run to the vicinity of Melitomini and Centridini (= Hemisiini) in Michener's (1944) key to tribes of Anthophorinae.

Canephorula Friese³⁾

Corbicula Friese, 1908 (not Megerle, 1811), Flora og Fauna, 10:59; Friese, 1908, Zeitschr. Hymenopterologie Dip-terologie, 8:170.

1) Universidade do Paraná, Curitiba, Paraná, Brasil.

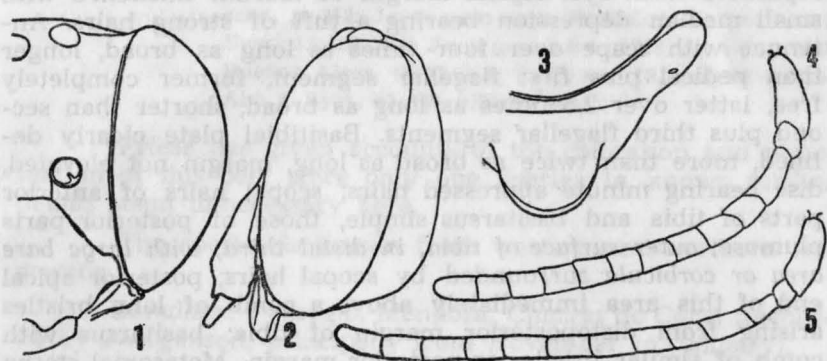
2) University of Kansas, Lawrence, Kansas, U. S. A.

3) There is some confusion as to the authorship of *Canephorula*. Sandhouse (1943), for example, credits the name to Joergensen. The name was proposed in a footnote, apparently written by Friese and obviously signed by him, in a paper by Joergensen. The fact that Joergensen uses the name higher on the same page, without bibliographical or other reference to *Canephora* or *Corbicula* and without mentioning characters, would not seem to be reason for crediting the name to Joergensen.

Canephora Friese, 1908 (not Huebner, 1822), Flora og Fauna, 10:94; Friese, 1908, Beiheft Deutsche Ent. Zeitschr., p. 94.

Canephorula Friese, 1909, in Joergensen, Deutsche Ent. Zeitschr., p. 212; Ducke, 1912, Zool. Jahrb., abt. f. Syst., 34:97; Friese, 1920, Zool. Jahrb., abt. f. Syst., 43:461 (illustrations).

A genus of moderate sized, robust bees, in general form similar to many species of *Melissodes*. Vertex flattened (not convex as in Melitomini); lateral parts of clypeus bent back parallel to axis of body; apical margin of clypeus broadly bilobed; malar space absent. Mandible slender, simple; labrum more than twice as broad as long; distal part of galea shorter than face; *maxillary palpus nearly two-thirds as long as distal part of galea*, six segmented, second and third segments subequal and longer than any of the others; first segment of labial palpus much longer than second; galea particularly broad, at level of maxillary palpi as wide as distance between antennal sockets, lateral margin curled under as separate lamella which terminates abruptly before apex of galea; outer margin of galea, especially apically, with long hairs directed downward; first two segments of labial palpus unusually broad; paraglossa flat, straplike, ending in sharp point, reaching about to middle of second segment of labial palpus. Thorax similar to that of Eucerini; upper part of propodeum subhorizontal; metanotum strongly convex but basically subhorizontal. Pterostigma very small, shorter than prestigma, margin in marginal cell straight, oblique. *Distal parts of wings without hairs, distinctly papillate; basal parts with very few hairs*. Venation of fore wings similar to that of Eucerini, marginal cell slightly shorter than distance from apex to wing tip, apex bent gradually from wing margin; third submarginal cell, on vein M, slightly longer than first, markedly longer than second, which receives first m-cu in distal fourth; second m-cu received near apex of third submarginal cell; vein M shorter than first m-cu. Jugal lobe of hind wing nearly as long as cubital cell, *vein cu-v nearly as long as second abscissa of M + Cu*. Legs rather ordinary in form and ornamentation; tibial spurs rather small and slender; inner claw of posterior leg broadened (as in some *Diadasia*). Metasoma with plumose hairs on terga generally distributed but denser both basally and apically on most terga; pygidial plate rather large, bearing minute hairs, *posterior end broadly rounded* and projecting beyond remainder of apical tergum, carina around it weak; gradulus of apical tergum not bent posteriorly at sides.

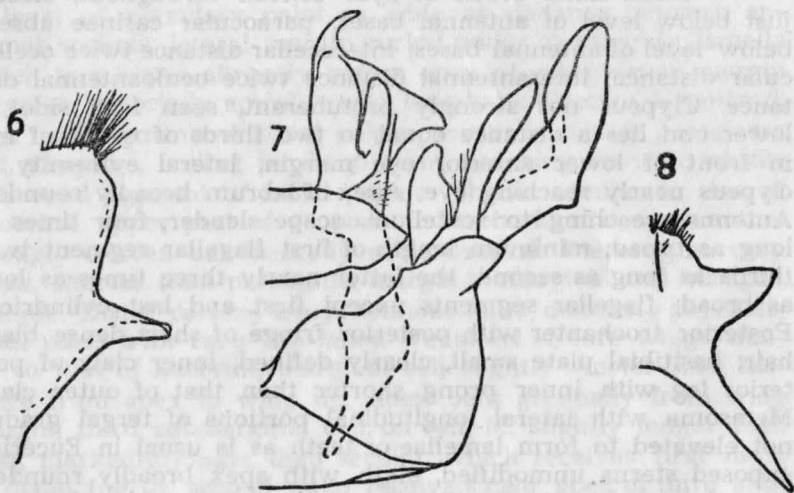


Canephorula apiformis (Friese) 1 and 2, front and lateral views of head of male. 3, seventh tergum of male. 4, antenna of female. 5, antenna of male.

Male: Inner orbits of eyes convex throughout, closest just below level of antennal bases; paracocular carinae absent below level of antennal bases; interocellar distance twice ocellular distance; interantennal distance twice oculoantennal distance. Clypeus not strongly protuberant, seen from side its lower end lies a distance equal to two thirds of width of eye in front of lower anterior eye margin, lateral extremity of clypeus nearly reaching eye. Apex of labrum broadly rounded. Antennae reaching to scutellum, scape slender, four times as long as broad; minimum length of first flagellar segment two-thirds as long as second, the latter nearly three times as long as broad; flagellar segments except first and last cylindrical. Posterior trochanter with posterior fringe of short dense black hair; basitibial plate small, clearly defined; inner claw of posterior leg with inner prong shorter than that of outer claw. Metasoma with lateral longitudinal portions of tergal graduli not elevated to form lamellae or teeth as is usual in Eucerini; exposed sterna unmodified, sixth with apex broadly rounded; seventh sternum simple (fig. 8), without evidence of the inner and outer plates found in Eucerini; gonocoxite without dorso-apical point, with group of long spicules ventroapically; gonostylus with three lobes from base, an inner robust one, an outer long flat one which is longer than the gonocoxite, and an intermediate slender one; volsellae absent.

Female: Inner orbits of eyes converging below; paracocular carinae complete; ocellular distance about three fourths of interocellar distance; clypeus little protuberant, its lower end lying a distance equal to half of width of eye in front of lower anterior eye margin; lateral extremity of clypeus well

separated from eye. Apical margin of labrum thickened with small median depression bearing a tuft of strong hairs. Antennae with scape over four times as long as broad, longer than pedicel plus first flagellar segment, former completely free, latter over 2.5 times as long as broad, shorter than second plus third flagellar segments. Basitibial plate clearly defined, more than twice as broad as long, margin not elevated, disc bearing minute appressed hairs; scopal hairs of anterior parts of tibia and basitarsus simple, those of posterior parts plumose; *outer surface of tibia, in distal third, with large bare area or corbicula surrounded by scopal hairs*; posterior apical end of this area immediately above a comb of long bristles arising from distoposterior margin of tibia; basitarsus with comb of similar bristles on posterior margin. Metasomal sterna densely covered with short but almost scopalike hairs; *gradulus of second sternum slightly arched posteriorly in middle*, that of sixth tergum (unlike male) connected to pygidial plate as in Eucerini.



Canephorula apiformis (Friese), male. 6, eighth metasomal sternum. 7 genitalia, right half, dorsal view. 8, seventh metasomal sternum.

Canephorula apiformis (Friese)

Corbicula apiformis Friese, 1908, Flora og Fauna, 10:60; Friese, 1908, Zeitschr. Hymenopterologie Dipterologie, 8:171.

Canephora apiformis, Friese, 1908, Flora og Fauna, 10:94; Friese, 1908, Beiheft Deutsche Ent, Zeitschr., p. 94; Jensen-Haarup, 1908, Flora og Fauna, 10:107.

Canedhorula apiformis, Joergensen, 1909, Deutsche Ent. Zeitschr., p. 212; Joergensen, 1912, Zool. Jahrb., abt. f. Syst., 32:162, 227; Joergensen, 1912, An. Mus. Nat. Buenos Aires, (3) 15:323; Friese, 1920, Zool. Jahrb., Abt. f. Syst., 43:469 (illustrations).

Friese has given accounts of the coloration and punctuation of this bee; since only one species is known further details seem unnecessary here.

The species is known from western and northern Argentina.

Mendoza: Pedregal, Mendoza, Chacras de Coria (recorded by Joergensen, principally from November to January).

Tucumán: (2000 meters altitude; locality not given, November).

Salta: (locality not given, March).

La Rioja: Patquía, March, 1951; Cobullar, November 14, 1944.

ACKNOWLEDGMENTS

We wish to acknowledge the aide of the Campanha Nacional de Aperfeiçoamento de Pessoal de Nível Superior, Rio de Janeiro; the Rockefeller Foundation, New York; the John Simon Guggenheim Memorial Foundation, New York; and the Conselho Nacional de Pesquisas, Rio de Janeiro.

We are grateful also, for the loan of specimens, to Dr. Carlos Alberto Campos Seabra of Rio de Janeiro.

RESUMO

CANEPHORULINI, tribu de abelhas da América do Sul

Em trabalho anterior (1944) um dos autores (Michener) aproximou *Canephorula apiformis* dos Eucerini. Certamente o parentesco está confirmado pelo grande alongamento das paraglossas, porém uma série de especializações ocorridas na evolução deste grupo, aconselha separação em tribu diversa. Como principais caracteres indicam-se: os palpos maxilares aproximadamente dois terços do comprimento da parte distal da gálea; as asas distalmente papiladas, sem pêlos, e estes muito escassos na parte basal; cu-v quase tão longo como a 2.^a abscissa de $M + Cu$; placa pigidial com a ponta largamente arredondada, saliente; o 7.^o esterno do macho simples, sem vestígios das placas interna e externa dos Eucerini; os gonocoxitos sem ponta dorso-apical; os gonóstilos com 3 lóbulos basais; a face externa das tíbias posteriores das fêmeas no terço distal formando corbícula e o grádulo do 2.^o esterno ligeiramente recurvo no meio.

A única espécie conhecida habita o oeste e norte da Argentina.

LITERATURE CITED

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Sandhouse, Grace A., 1943, The type species of the genera and subgenera of bees, Proc. U. S. Nat. Mus., 92:519-619.

ACKNOWLEDGMENTS

We wish to acknowledge the aid of the Comisión Nacional de Apicultores de la Provincia de Río Negro, the Fundación de Estudios Agrícolas de Río Negro, the John Simon Guggenheim Memorial Foundation, New York, and the Comisión Nacional de Pecuaria de la Provincia de Río Negro, Río Negro, Argentina, for the loan of specimens to Dr. Carlos ...

RESUMEN

CAMPUS BREVIPES, una especie de Andócebi de ...
 En el trabajo anterior (1954) por los autores (Michener) ...
 con el espécimen tipo de Euclyptus, ...
 volúmenes pero grande longitudinally ...
 de especialidades occidenales en ...
 los en tribu diversa. Como principales caracteres ...
 maxilar y ...
 de ...
 en parte basal, ...
 para ...
 en ...
 Euclyptus ...
 ...
 ...

