

**A new cuckoo wasp of the genus *Ceratochrysis* in amber from the Dominican Republic (Hymenoptera: Chrysididae)**

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**ABSTRACT.** The remains of a new species of cuckoo wasp (Aculeata: Chryridoidea: Chrysididae) are described and figured from a male preserved in Early Miocene (Burdigalian) amber from the Dominican Republic. *Ceratochrysis dominicana* sp. n. (Chrysidinae: Chrysidini) is the first chrysidid described in Dominican amber as well as the first fossil of the genus. The species is distinguished from modern congeners.

**KEY WORDS:** Chryridoidea, Aculeata, Burdigalian, Miocene, palaeontology, taxonomy.

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INTRODUCTION

Cuckoo wasps, or gold wasps (family Chrysididae), are frequently brilliant metallicly coloured wasps parasitic or cleptoparasitic on a variety of hosts ranging from walking-sticks, silk moths, and sawflies, to a diversity of species in the Euaculeata (i.e., Vespoidea and Apoidea). This cosmopolitan family consists of approximately 3000 modern species but only a handful of fossil records. Species have been described in Baltic, Canadian, and Siberian ambers (BRUES, 1933; EVANS, 1969, 1973; KROMBEIN, 1986) as well as from Tertiary compressions of the United States (COCKERELL, 1907; ROHWER, 1909). While chrysidids have been known from Dominican amber for quite some time, none have been described. Herein I provide the first formal description of a cuckoo wasp in Early Miocene (Burdigalian) amber from the Dominican Republic. The fossil is a new species of the principally Nearctic genus *Ceratochrysis* COOPER. Today the genus *Ceratochrysis* occurs in the western United States and northern Mexico, with only *Ceratochrysis quadrituberculata* (CAMERON) truly extending southward into tropical habitats. No modern species are known from the West Indies. *Ceratochrysis* species have been reported as parasites of Sphecidae (Ammophilinae), Crabronidae (Crabroninae) and Vespidae (Eumeninae) (KIMSEY &

BOHART 1990) of which only Crabroninae have been documented in Dominican amber (e.g., BENNETT & ENGEL 2006).

A general account of chrysidoid geological history can be found in GRIMALDI & ENGEL (2005) and ENGEL (2005). Morphological terminology generally follows that of KIMSEY & BOHART (1990). The age and origin of Dominican amber is reviewed by ITTURALDEVINENT & MACPHEE (1996) and GRIMALDI & ENGEL (2005).

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### SYSTEMATIC PALAEOLOGY

Parvorder: Aculeata SCOPOLI 1763  
Superfamily: Chryridoidea LATREILLE 1802  
Family: Chrysididae LATREILLE 1802  
Subfamily: Chrysidinae LATREILLE 1802  
Tribe: Chrysidini LATREILLE 1802  
Genus: *Ceratochrysis* COOPER 1952

### *Ceratochrysis dominicana* sp. n.

(Figs 1–2)

### Diagnosis

Vertex without glabrous, knob-like tubercles (Fig. 1); first flagellar article elongate, more than three times as long as broad, without elongate setae ventrally; transverse frontal carina present, faint, weakly and broadly M-shaped; malar space approximately 1.5 median ocellar diameters (MOD) in length; pronotum about as long as mesoscutellum; metatibia with dense patch of elongate setae on inner apical margin (“tassel”); apical margin of third metasomal tergum rounded, without medial emargination, denticles, or angulate corners, with subapical row of pits indented.

### Description

♂: Total body length 4.26 mm; forewing length 2.97 mm. Integument shining, head and mesosoma black with strong metallic gold hue, metasoma dark brown with strong metallic hue; legs and tegula brown, not marked with white maculations; sterna without spots. Head wider than long (Fig. 2), length 0.81 mm, width 1.0 mm; face minutely and contiguously punctured, except medially, with narrow and faint cross-ridging; facial foveae



**Fig. 1.** Dorsal aspect of holotype male of *Ceratochrysis dominicana* sp. n. (AMNH, DR-14-1200) in Early Miocene (Burdigalian) amber from the Dominican Republic.

absent; vertex and gena contiguously and coarsely punctured, punctures large and deep (Fig. 1). Scapal basin not depressed; scape elongate, about twice length of first flagellar article; first flagellar article elongate, longer than malar space, 3.6 times longer than wide, distinctly longer than second flagellar article, without elongate setae ventrally. Malar space approximately 1.5 MOD in length. Mandible simple. Transverse frontal carina present, faint, weakly and broadly M-shaped. Vertex without glabrous, knob-like tubercles.



**Fig. 2.** Ventral and facial (inset) aspects of holotype male of *Ceratochrysis dominicana* sp. n. (AMNH, DR-14-1200) in Early Miocene (Burdigalian) amber from the Dominican Republic.

Pronotum about as long as mesoscutellum, with well defined dorsolateral corners and distinct dorsolateral and dorsoventral ridges that are weakly carinate (more rounded in typical *Ceratochrysis*) (Figs 1–2). Mesoscutum with notauli faint but present and complete; intertegular distance 0.80 mm. Metanotum broadly rounded in profile. Mesopleuron with well developed and complete mesepisternal and scrobal sulci, horizontally divided by scrobal sulcus. Nota contiguously and coarsely punctured, punctures large and deep as those on vertex (Fig. 1), integument between punctures (where evident) smooth and shining. Propodeum with similar contiguous punctures, punctures a bit more irregular and appearing more areolate; propodeum without medial tooth. Forewing with basal confluent with 1cu-a, arched near base; marginal cell closed, apex acute, Rs terminating on anterior margin of wing, extending near to wing apex (Fig. 1); first submarginal cell and discoidal cell closed by tubular and pigmented veins (Fig. 1); M and Cu beyond first submarginal and discoidal cells vestigial; veins brown, membrane hyaline. Metatibia with dense patch of elongate setae on inner apical margin (“tassel”); arolia present.

Metasomal terga punctured, punctures smaller than those of mesosomal nota, separated by 0.5 times a puncture width or less, integument between punctures imbricate. Apical margin of third metasomal tergum rounded, without medial emargination, denticles, or angulate corners, with subapical row of pits indented. Sterna imbricate and impunctate.

### Holotype

Holotype ♂ depicted in Figs 1–2; DR-14-1200; Early Miocene (Burdigalian) amber, Dominican Republic (specific mine unknown); deposited in the Amber Fossil Collection, Division of Invertebrate Zoology, American Museum of Natural History, New York.

### Etymology

The specific epithet is a reference to the country from which the amber originates; *i.e.*, the Dominican Republic. This is the first *Ceratochrysis* from the Dominican Republic, or even from the entire West Indies. Furthermore, this is the first chrysidid formally described from Dominican amber.

### Comments

Among genera of New World Chrysidini the species can be placed in *Ceratochrysis* by the combination of the elongate first flagellar article; face with faint, median cross-ridging; presence of a transverse frontal carina; scapal basin not depressed; absence of facial foveae; complete discoidal cell in the forewing; Rs terminating on anterior wing margin; and absence of a medial tooth on the propodeum. Within *Ceratochrysis* the fossil is generally most similar to males of *C. declinis* BOHART, *C. nearctica* (MOCSÁRY), and *C. thysana* BOHART which also possess a metatibial “tassel”, lack tubercles on the vertex, have a malar space less than 3 MOD, and have the first flagellar article less than five times longer than wide (but still greater than three times longer than wide). Unlike modern *Ceratochrysis*

species the fossil has a pronotum that is about as long as the mesoscutellum and with more pronounced dorsolateral corners. In modern species the pronotum is distinctly shorter than the mesoscutellum while in the fossil the pronotum is about the same length as the mesoscutellum, in this respect resembling the apparently related genus *Caenochrysis* KIMSEY & BOHART. From the latter genus, however, the fossil differs by the more typical features of *Ceratochrysis* outlined above.

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