

## ***Alinia carinata* gen. et sp. n. (Hymenoptera, Sphecidae, Crabronini) from South America\***

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**Abstract.** A new genus and a new species of digger wasp of the tribe Crabronini (Hymenoptera, Sphecidae), *Alinia carinata* gen. et sp. n., is described from a female specimen from Brazil.

**Key words:** Hymenoptera; Sphecidae; systematics (new genus and species).

During the examination of numerous collections of digging wasps which came to the collection of the Zoological Museum of Moscow State University (ZMSU) from Vasily Nikolayevich Alin, who lives in São Paulo, Brazil, one specimen was found that differed sharply from all known genera of digging wasps of the tribe Crabronini. A description of the new genus and new species, *Alinia carinata* gen. et sp. n., is offered below.

**ALINIA** Antropov, gen. n.

**Etymology.** The genus is named in honor of V. N. Alin.

♀. Eyes bare, inner orbits sharply convergent downward, anterior ommatidia considerably enlarged. Antennal pits very close to each other and to inner orbits. Antennal depression on frons without carinae on sides and in upper part. Medial line of lower part of frons depressed. Above ends of scapes frons with sharp corner (at most right angle) bordered with acute carina. Upper part of frons almost flat. Flat and shiny areas present instead of orbital pits. Ocellar triangle with obtuse angle, from anterior ocellus posteriorly medial groove reaching middle of vertex. Punctuation of vertex somewhat coarser and considerably sparser than on frons before ocellar triangle. Genae and cheeks simple. Occipital carina not closed, lower ends with acute teeth sharply curving outwardly and distant from hypostomal carina as far as width of mandibles. Hypostomal carina complete. Mandibular pits closed by hypostomal processes. Palpal formula 6+4. Mandibles tridentate at apex, with acute basal tooth on inner margin and ventral margin even. Scape with 1 external carina. Pronotum with broad, semitransparent apical plate curved posteriorly and with transverse ridge posterior to it. Ridge of pronotum without carinae dorsally and with shallow medial depression. Mesonotum simple, notaulices in form of deep grooves, prescutellar groove with transverse ridges. Postopercular carinae extending into ommatules and acetabular carinae connected ventrally and curved posteriorly. Verticulus developed, ventrally slightly curved anteriorly, forming trace of sternaulus. Hyposternaulus and mesopleuralus absent. Scutellum and metanotum simple. Propodeum with outlined punctate dorsal area and smooth posterior and lateral surfaces divided by lateral carinae; legs not modified. Recurrent vein of forewing connected with submarginal cell slightly distad of middle, marginal cell truncate terminally. Jugal lobe of hindwing equal to submedial cell. Abdomen sessile pygidial area at apex compressed laterally and bordered with distinct lateral carinae.

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Type species *Alinia carinata* Antropov, sp. n.

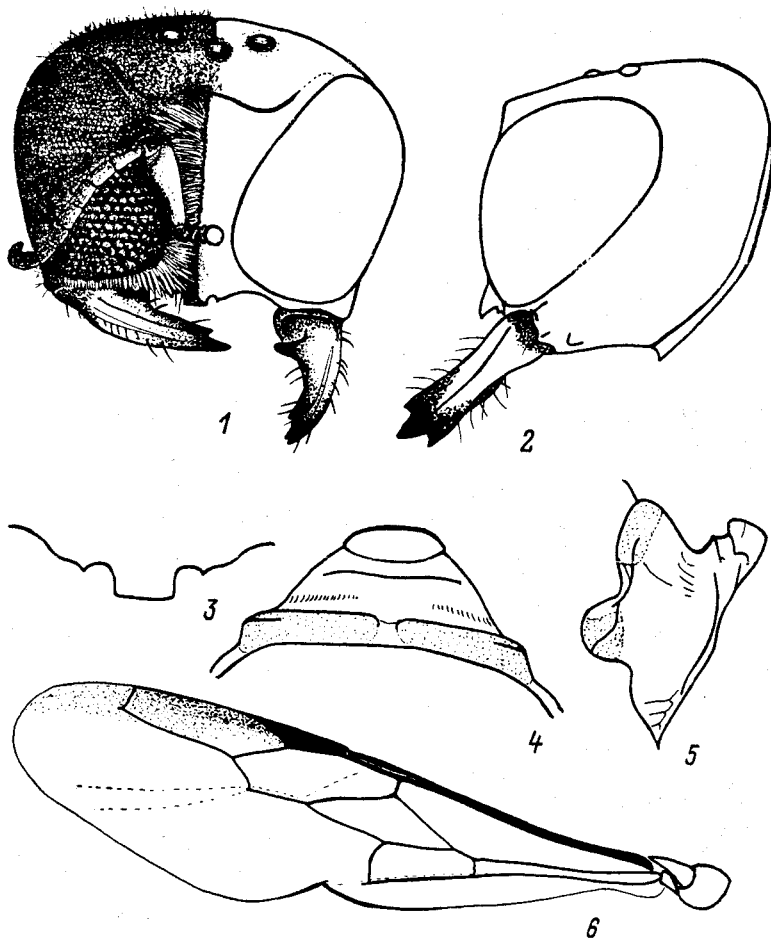
**Distribution.** Brazil.

**Diagnosis.** In its characters, primarily in forewing venation, the new genus should be placed close to 2 groups of genera of the tribe Crabronini. Primarily in presence of transverse frontal carina and greatly enlarged anterior ommatidia it is similar to the group of predominantly Oriental species including *Towada*, *Piymoides*, and *Leclercqia*. The new genus differs from all members of this group in obtuse ocellar triangle, dense pubescence of depression of lower part of frons, scapes with 1 external carina, tridentate apices of mandibles, medial pit of carina of pronotum, presence of acetabular carinae, laterally compressed pygidial area with complete lateral carinae. The new genus also differs from *Leclercqia* and *Towada* in the unclosed occipital carina, from *Piymoides* and *Towada* in transverse rugulae of prescutellar groove, from *Leclercqia* in postocellar groove and absence of postscutellar depression, and from *Towada* in presence of verticulus. Secondly in obtuse-angled ocellar triangle, medial depression of carina of pronotum, and verticulus the new genus is similar to 2 genera, *Chimila* (S America) and *Chimiloides* (Australia), from which it differs in enlarged anterior ommatidia, occipital carina separated from hypostomal carina, scapes with 1 external carina, tridentate apices of mandibles, and jugal lobe of hindwing as long as submedial cell. The new genus also differs from *Chimila* in having the mesonotum without microcarinae, the rugulose prescutellar groove, and in the presence of an acetabular carina; and from *Chimiloides* in the pronotal carina being absent on the upper side; considerably lesser development of sculpturation of mesonotum, scutellum, and propodeum; absence of carinae on tarsi and tibia; and laterally compressed pygidial area of ♀.

*Alinia carinata* Antropov, sp. n.

♂. Head (Figs. 1, 2) anteriorly round and distinctly transverse. Clypeus (Fig. 3) with rectangular process in middle and 2 weak teeth laterad of it; apical part of process with small triangular area, from apex of which acute medial carina extends to antennal pits. Lateral parts of clypeus hidden by transversely flattened silver setae, medial area with longer setae, directed from tentorial pits to medial carina and antennal pits. Antennal pits contiguous and reaching inner orbits. Frons divided into 2 parts by transverse carina concave in middle and convex laterally. Lower part of frons with deep medial depression covered by dense, flattened, silver setae, hiding its sculpturation and directed toward medial line and inner orbits. Upper part of frons almost flat, shiny, evenly punctate (intervals between punctations equaling or 1.2-2 times diameter). Orbital pits in form of flat, narrow, shiny areas distinctly bordered only posteriorly. Ocelli in obtuse triangle, distances between inner orbit and lateral ocellus and between lateral ocelli equalling each other, twice diameter of lateral ocellus, and twice distance between lateral ocellus and anterior ocellus, from which narrow medial stripe extends posteriorly to middle of vertex. Punctuation of vertex anteriorly, as well as upper part of frons, and posteriorly, finer and denser. Upper part of frons and vertex pubescent with sparse, pale, light erect setae shorter than diameter of anterior ocellus. Genae highly developed, shiny, with sparse, decumbent, and semidecumbent setae, in lower part 1.5 times diameter of lateral ocellus. Occipital carina highly developed, not closed, in upper part and on sides rounded, with acute teeth on lower ends, curved outwardly and distant from hypostomal carina by width of base of mandibles. Hypostomal carina well developed and in middle on outer side with transverse carinae. Mandibular pits completely separated mesally by longitudinally depressed hypostomal processes. Mandibles at apex with 3 teeth and strong basal tooth on inner margin. Antennae relatively short. Scape flattened in middle, 3.2 times as long as maximal width, with only 1 longitudinal transparent lateral carina. 3rd antennal segment 1.5 times as long as maximal width, 4-6th segments slightly longer than wide, 12th segment twice as long as wide, and 7-11th segment as wide as long.

Pronotum (Figs. 4, 5) narrowed anteriorly, with oval, semitransparent marginal stripe, curving



Figs. 1-6. *Alinia carinata* gen. et sp. n.: 1, 2) head in anterior and lateral views; 3) anterior marginal stripe of clypeus; 4, 5) pronotum in dorsal and lateral views; 6) forewing.

outward posteriorly with acute carina posterior to pronotum. Carina of pronotum in anterior view with transverse carinae; with weak medial depression, round, dorsally without transverse carina, and laterally with narrow carina merging into humeral calli. Propleura with blunt external tubercles. Mesonotum shiny, densely punctate (intervals between punctations generally as long as diameter of punctation), in upper part, rugulose between punctations. Scutellum shiny anteriorly, with scattered punctations posteriorly, as well as entire postscutellum, with longitudinal rugulae and punctations between them. Sides of metathorax in dorsal view convex, with fine transverse rugulae and smooth below. Legs relatively short and not modified. Midtibia in apical part and posteriorly with punctate dorsal area; deep, distinct medial groove; smooth and punctate only on sides of posterior part; separated from shiny lateral parts by distinct lateral carinae bearing on their inner side short transverse carinae. Pubescence of thorax and propodeum consisting of erect silver setae anteriorly and dorsally and with semidecumbent silver setae laterally and ventrally, diameter of which equal to diameter of posterior ocellus.

Abdomen sessile; 2 anterior tergites with sparse and fine punctations, with smooth intervals;

tergites III and IV not distinct, microscopic; rugulose; tergite V with dense fine punctations; tergite VI smooth, with coarse punctations laterally and at base of pygidial area, latter narrowed to apex and bordered by lateral carinae. Sternite II smooth, with transverse carina at base, fine and densely punctate hairy spots on sides and coarse, sparse punctations in middle; sternites III-V smooth, with apical cilia of long, erect hairs; sternite VI smooth at base, at apex with 2 longitudinal depressions bearing long erect setae.

Color predominantly black. Middle parts of mandibles; scapes; carina of pronotum (except medial emargination and humeral tubercles); axillae; scutellum; anterior margin of alula; entire tarsi; fore- and midtibia (except inner black spots); hindtibia in basal half apices of forefemora and midfemora; and also foretrochanters and midtrochanters yellow mesally. Basal half of flagellum, spots near apices of mandibles, apical plate of pronotum, most of alulae, upper surfaces of foretrochanters, and midtrochanters and apex of segment VI brownish ferrugineous.

Length of body 7.1 mm, length of forewing 4.5 mm.

♂ unknown.

**Material.** Holotype: ♀, Brazil, São Paulo, 17.II.1981 (V. Alin). Type spm. preserved in collection of ZMSU.