

## A new species of *Carabodes* (Acariformes: Carabodidae) from Venezuela

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**Abstract:** A new species, *Carabodes venezolanus* is described from Venezuela. A comparison with related species and genera is done.

**Key words:** Acariformes, Oribatid, Carabodid, *Carabodes*, new species, Venezuela.

In 1978 Mahunka described the genus *Klapperiches* for his new species *Klapperiches nigrosetosus* from Dominican Republic. Reeves (1997) found this genus in Puerto Rico and Bahamas and described the new species *Klapperiches littoristicus* from Southern Florida. Studying the oribatid fauna of Venezuela we found a new species which seems related with this genus but, as we explain below, *Klapperiches* diagnosis is not clear and its separation from *Carabodes* C. L. Koch, 1835 is difficult so we decided to include the new species in *Carabodes*. Concerning the monotypic genus *Bakobodes* described from Borneo also by Mahunka (1996), its notogaster shape very similar to the new species but, as it occurs with *Klapperiches* its separation from *Carabodes* is neither clear.

### DESCRIPTION

*Carabodes venezolanus* n.sp.  
(Figs. 1A, 1B, 1C & 1D)

Examined material. 36 ex. (Holotype and 25 Paratypes are preserved in lactic acid, rest

are preserved in a slide with "Hoyer"): Venezuela, Isla Margarita, Cerro El Copey National Park (600 m above sea level). Litter and earth under a "copey" tree (*Ficus* sp. a common species of strangler fig). May, 12, 1994. E. Ruiz leg. All the specimens are stored in the collection of the Department of Entomology (Biological Sciences Faculty, Complutense University, Madrid, Spain).

*Derivatio nominis:* specific epithet is after Venezuela, the country where it was found.

*Measurements.* Total length 350-490  $\mu\text{m}$ ; width 170-280  $\mu\text{m}$ .

*Integument.* Generally well sclerotized, yellowish ochre and covered by a cryptic coat made with surrounding particles.

*Prodorsum* (Fig. 1A): wide, without any sculpture except in the lateral regions which are slightly foveate. The lamellae are very lateralized, being rather narrow. Lamellar setae are inserted at the anterior part of the lamellae, being strong, arched and barbed on its convex surface. Rostral setae are strong and smooth being inserted between the lamellar setae. Bothridia laterally opened and located in the posterior part of the prodorsum, at its outer margins. Sensillus with a thick and medium

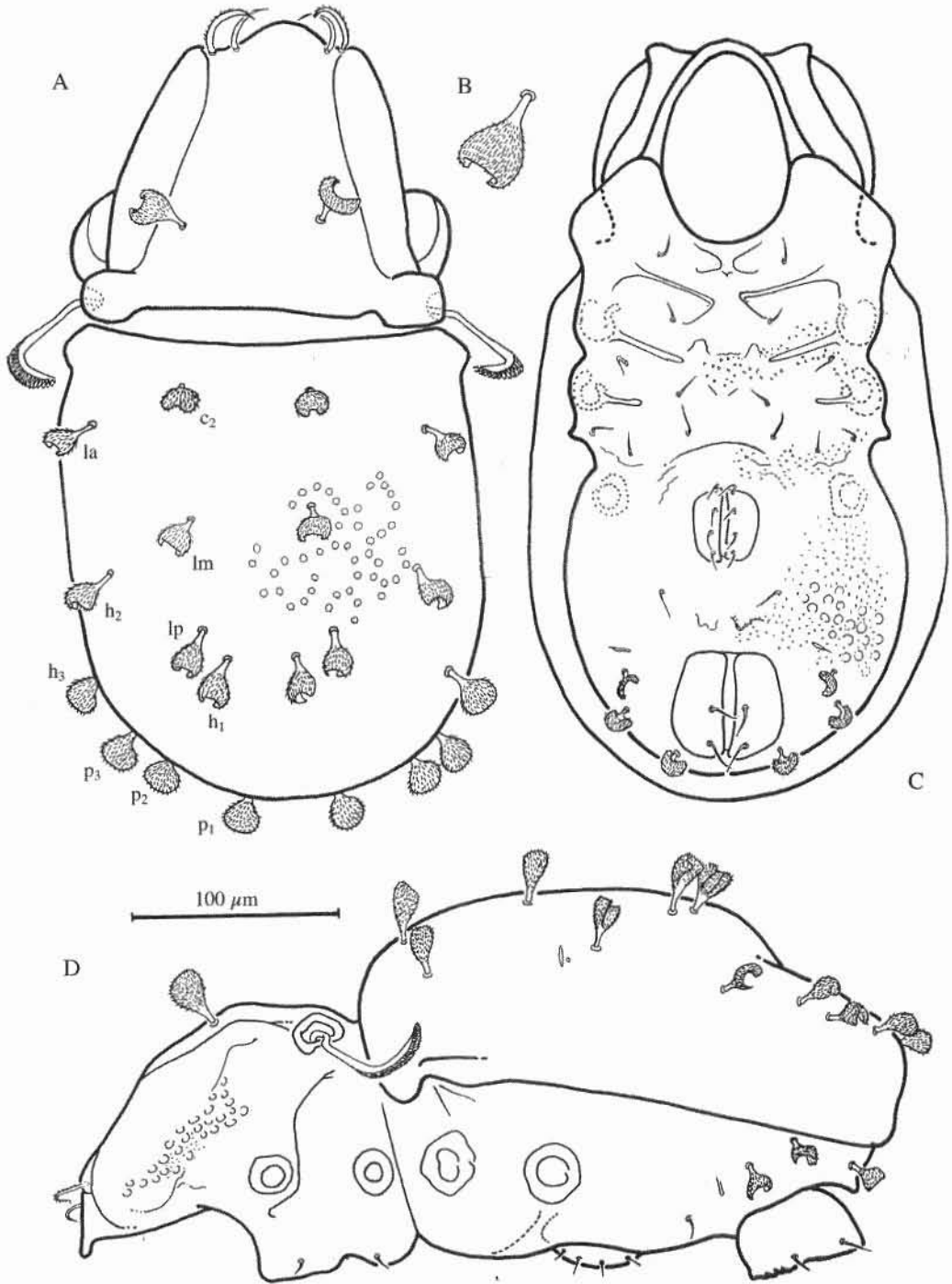


Fig. 1. *Carabodes venezolanus* n. sp. A- Dorsal view, B- Notogastral seta, C- Ventral view, D- Lateral view. Scale bar is for Figs. 1A, 1C & 1D. Fig. 1B has a higher magnification.

lengthed tail, bulked and curved at its end forming a brush shaped head which is densely barbed on its convex side (scopate sensillus). Interlamellar setae spoon shaped, densely barbed on convex surface and similar to notogastral setae.

Notogaster: short and wide, almost square. Dorsosejugal suture with straight anterior margin, without any separation between prodorsum and notogaster. Surface tuberculate; tubercles with an irregular distribution. Notogaster is convex in its anterior and medial parts but it is clearly flattened in its posterior part (Fig. 1D). Perhaps this feature is related with the peculiar distribution of the ten pairs of notogastral setae. These setae (Fig. 1B) are very similar to interlamellar setae, and some of them are more or less moved from their theoretical position. Pair  $h_1$  is moved forwards and so this pair is close to pair  $lp$ . Pair  $h_2$  are also moved forwards. Setae  $p_1$ ,  $p_2$ ,  $p_3$  and  $h_3$  are aligned at the lateral and posterior margins.

The ventral region (Fig. 1C) has a thin cerotegumentary granulation. Epimeral setae are simple, setiform, short and smooth. Epimeral setal formula 1,1,3,3 being pairs  $1_b$  and  $1_c$  absent. Genital plates are smaller than anal plates being clearly separated (slightly more than the length of genital plates). Genital plates have four pairs of short, thin and small setae aligned in the inner margin of each plate, more or less equidistant. Two pairs of smooth and thin anal setae slightly longer than genital setae. The ventral plate is foveate mainly at its lateral margins. One pair of adgenital setae smooth and thin. Three pairs of adanal setae spoon shaped as interlamellar and notogastral setae although adanal setae are slightly smaller.

Legs are similar to that of the "*minusculus*" species group as *C. minusculus* Berlese, 1923 or *C. willmani* Bernini, 1975, having the solenidia II, III and IV short, but in *C. vene-*

*zolanus* these solenidia are even shorter, wider and with rounded tip.

## DISCUSSION

*C. venezolanus* is similar to *Klapperiches littoristicus* described by Reeves (1997) from Southern Florida; *K. littoristicus* has also a tuberculate notogaster and its notogastral setae are spoon shaped too (although pairs  $h_1$  and  $h_2$  are not moved forwards as it occurs in *C. venezolanus*). But Reeves described his species into the genus *Klapperiches* proposed by Mahunka (1978) for *K. nigrosetosus* from Dominican Republic. Following Mahunka's description the diagnostic characters of *Klapperiches* are:

- (1) Genital plates are moved towards the anal plates being close together.
- (2) Adgenital setae absent.

*K. littoristicus* has feature (1) but not (2). In *C. venezolanus* adgenital setae are present and genital plates are far from anal plates (more than the length of genital plates). So we think that *K. littoristicus* belongs to the genus *Carabodes* C.L. Koch, 1835 and we think that separation between both genera is doubtful.

The new species is different from *Carabodes littoristicus* (Reeves, 1997) **n.comb.** for the following features:

- (1) Position of setae  $lp$  and  $h_1$  (close in *C. venezolanus* and separated in *C. littoristicus*).
- (2) Adanal setae spoon shaped in *C. venezolanus* and setiform in *C. littoristicus*.
- (3) Prodorsum is smooth in *C. venezolanus* and tuberculate in *C. littoristicus*.

Recently, Mahunka (1996) described from Borneo the monotypic genus *Bakobodes*. This

*carabodid* has 10 pairs of notogastral setae, being some of them more or less moved from their theoretical position; its notogastral anterior margin is straight (without any separation between prodorsum and notogaster), the notogaster is convex in its anterior and medial parts but it is clearly flattened in its posterior part. All these features agree with *C. venezolanus* but in any case *Bakobodes orangutan* Mahunka, 1996 (the type species) is very different from *C. venezolanus* concerning the prodorsum shape and having a different distribution and shape of the body setae. So, until the systematic of the family Carabodidae C.L. Koch, 1837 becomes clearer and the real value of the features used in the generic separation is resolved, we prefer not introducing more confusion in this family and describe the new species as belonging to *Carabodes*.

## RESUMEN

Se describe una nueva especie *Carabodes venezolanus* de Venezuela. Se realiza una comparación con especies y géneros próximos.

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