

## **A new species of *Archaeocindis* KAVANAUGH & ERWIN, 1991 (Coleoptera: Carabidae: Cicindini) from the south of Iran**

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### Abstract

*Archaeocindis hormozensis* sp.n. from Hormozgan Province, Iran, is described and illustrated. The new species is compared to *Archaeocindis johnbeckeri* (BÄNNINGER, 1927), which hitherto was the only known species of *Archaeocindis* KAVANAUGH & ERWIN, 1991.

Key words: Carabidae, *Archaeocindis*, Cicindini, Iran

### Zusammenfassung

*Archaeocindis hormozensis* sp.n. aus der Provinz Hormozgan (Iran) wird beschrieben und abgebildet. Die neue Art wird mit *Archaeocindis johnbeckeri* (BÄNNINGER, 1927) verglichen, welche bisher die einzige bekannte Art der Gattung *Archaeocindis* KAVANAUGH & ERWIN, 1991 gewesen war.

### Introduction

Hitherto, the tribe Cicindini BÄNNINGER, 1927 comprised two genera and two species (KAVANAUGH & ERWIN 1991). *Cicindis* BRUCH, 1908, with the type species *Cicindis horni* BRUCH, 1908 is distributed in South America, specifically only in Argentina. *Archaeocindis* KAVANAUGH & ERWIN, 1991, with the type species *Archaeocindis johnbeckeri* (BÄNNINGER, 1927) is currently known from southern Iran and Kuwait (STORK 1982, KAVANAUGH & ERWIN 1991, AZADBAKHSH & NOZARI 2015).

Even though several studies have been conducted on this subject, the phylogenetic position of the Cicindini and their relationships with other tribes of the Carabidae is still unclear (KAVANAUGH & ERWIN 1991, ERWIN & ASCHERO 2004, ROIG-JUÑENT et al. 2011).

BÄNNINGER (1927) described *Cicindis johnbeckeri* based on a single specimen from Bushehr Province in southern Iran (holotype illustrated in Figs. 1, 2). KAVANAUGH & ERWIN (1991) erected the new genus *Archaeocindis* to accommodate this species. Main distinguishing characters of this genus are the presence of an anterior pair of supraorbital setigerous punctures and a serrate apical margin of the elytra.

The species of Cicindini are rarely collected and nocturnal, and their habitats are restricted to a muddy saline environment. It has been reported that the adult beetles can be collected at night by a net or by hand, when they are running on the mud adjacent to pools, or at UV and mercury vapor lights, and sometimes can be obtained from pitfall traps placed very near the water's edge (ERWIN 2007).



Figs. 1–2: Holotype of *Archaeocindis johnbeckeri*: (1) dorsal habitus; (2) label. © Beulah Garner, The Natural History Museum, London.

From 2012 to 2016, the author made several attempts in Bushehr Province to re-collect *Archaeocindis johnbeckeri*, but was never successful. It is assumed that this species became extinct in this region, chiefly because its characteristic habitats, the salty-grounded sea shores, were destroyed by conversion of the shoreland into cities and ports.

However, in 2017 the author could by chance find some *Archaeocindis* specimens in a muddy saline environment in Hormozgan Province, more than 1000 km distant from the type locality of *A. johnbeckeri*. Taxonomic studies on the newly collected specimens showed that they belong to an unknown species that is described in the following.

#### Material and methods

The studied material is deposited in the following collections:

- Sac Private Collection of Saeed Azadbakhsh, Bandar Abbas (Iran)
- ZMUT Zoology Museum of Tehran University, Karaj (Iran)

Acronyms for measurements:

- BL body length measured from apex of clypeus to apex of elytra  
BW maximum body width (= elytra width)  
EL elytral length along suture  
PL pronotum length (measured along mid-line)  
PW maximum width of pronotum

## Taxonomy

### *Archaeocindis* KAVANAUGH & ERWIN, 1991

Diagnosis: Head with one pair of supraorbital setiferous punctures. Area between posterior margin of eye and postgenal groove slightly depressed. Antennomeres 1 to 4 glabrous (except apical setae); antennomeres 5 to 11 densely and evenly pubescent. Mandible long. Ligula deeply emarginated apically. Elytral apical margin serrate.

### *Archaeocindis hormozensis* sp.n. (Figs. 4, 6–8)

Type material: Holotype (male): Iran, Hormozgan Province, Bandar Abbas, 20.III.2017, 27°10'04.0"N. 56°12'57.3"E, sea shore, leg. S. Azadbakhsh (ZMUT). Paratypes: 7 males, 10 females, same data as the holotype (SAc).

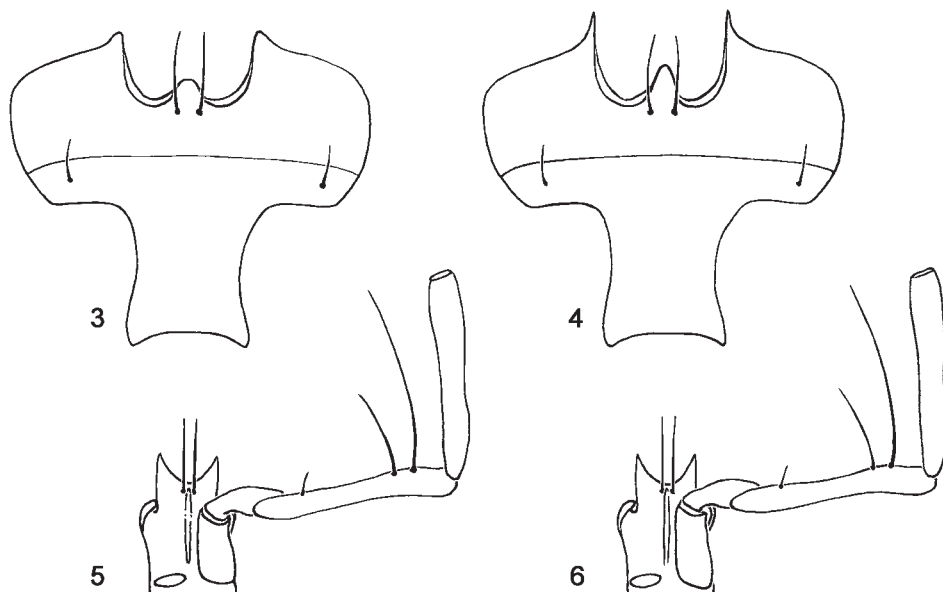
Description: Size and dimensions: BL 10.1–11.0 mm (holotype: 10.67 mm), BW 4.32–4.71 mm (holotype 4.57 mm), PW 2.91–3.17 mm (holotype 3.08 mm), PL 1.7–1.85 mm (holotype 1.8 mm), EL 6.15–6.7 mm (holotype 6.5 mm).

Colour: Body light yellowish, appendages and lateral borders of body pale. Elytra with sutural area darker, pale yellowish margin irregularly shaped.

Head smooth with one pair of supraorbital setiferous punctures. Frontal furrows absent, but frons with several superficial wrinkles, darker in middle. Labrum with 6 apical setae, slightly wider than the antennal scape (0.984 / 0.86). Clypeus with straight anterior margin bearing two lateral setae. Mandibles long, smooth, with dark inner margin. Labial palpomeres long; penultimate segment with three setae at leading side. Mentum with deep anteromedial emargination bearing a medial tooth at its base; posterior of this tooth one pair of paramedial setiferous punctures; epilobes rounded and toothed, without setae. Submentum broad anteriorly, only slightly narrower than mentum, with one pair of lateral setiferous punctures.

Pronotum broad, wider than long, with greatest width larger than head width across eyes, slightly cordate, narrowed basally; anterior margin wider than basal margin; disc markedly convex and smooth, darker than sides; apical margin smooth and markedly bisinuate; lateral margin crenulate or faintly serrate, arcuate, with basal sinuation shallow and long; basal angles obtuse, slightly projected posteriorly; posterior transverse impression smooth, narrow and deep, laterally extended to basal fovea; basal foveae anteriorly deeper than posteriorly.

Elytra convex, wider than pronotum, widest distinctly behind middle; lateral margins faintly and apical margins distinctly serrate; basal margin complete; humeri distinct, without humeral tooth; striae very fine and intervals flat and smooth, impunctate; interval



Figs. 3–6: (3, 4) Mentum and submentum of (3) *Archaeocindis johnbeckeri* (after KAVANAUGH & ERWIN 1991) and (4) *A. hormozensis* sp.n. (5, 6) Ligula and labial palpomeres of (5) *Archaeocindis johnbeckeri* (after KAVANAUGH & ERWIN 1991) and (6) *A. hormozensis* sp.n.

3 without any pore; coloration very similar to *Cicindis horni*, anterior, lateral and posterior margin with distinct pale patches.

All legs long and slender; femora covered with sparse and long setae, front tarsomeres 1 to 4 in males widened and with pads of adhesive setae ventrally.

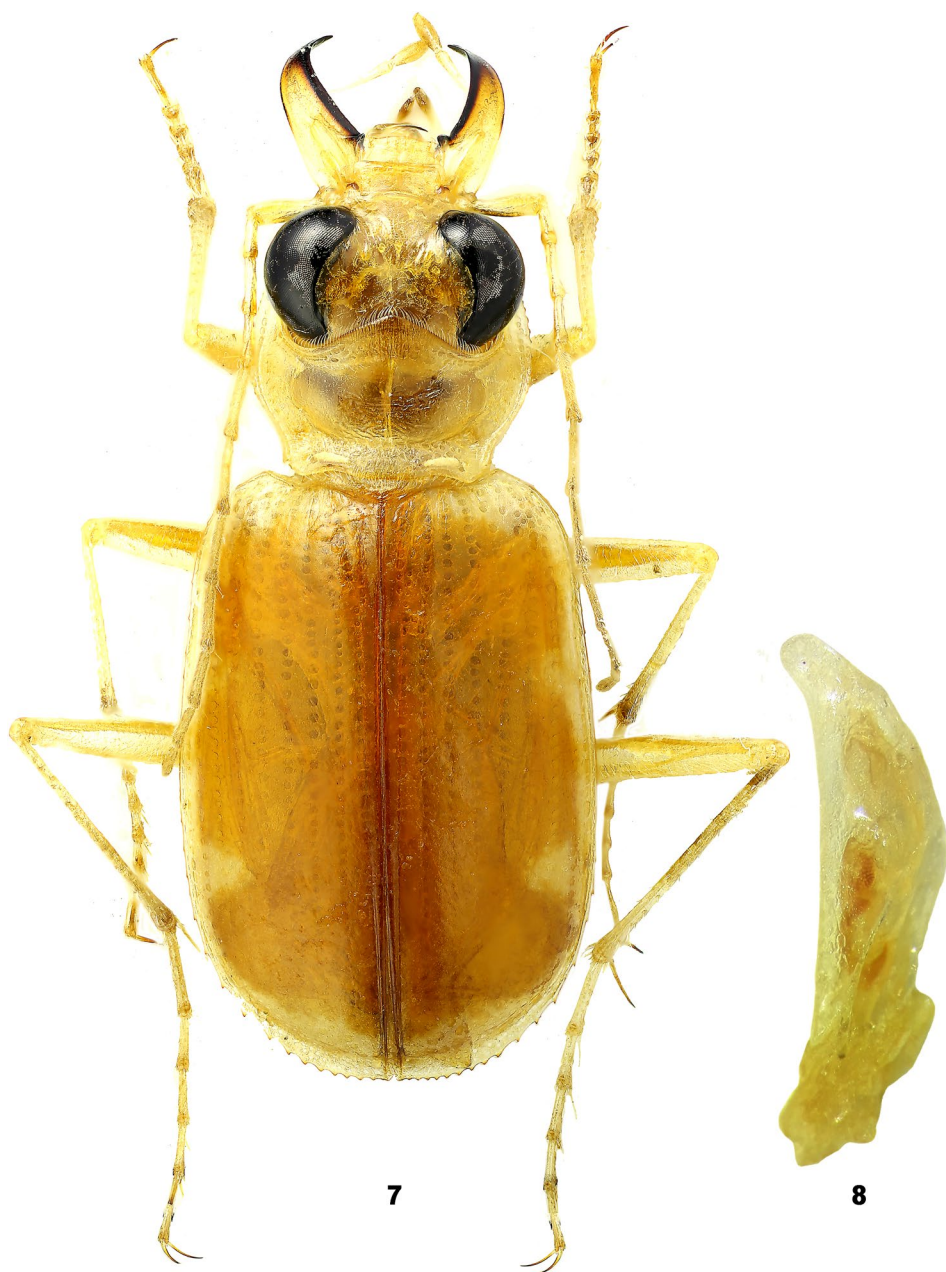
Aedeagus as in Figure 8. Unfortunately almost all specimens were freshly hatched and because of this their aedeagi were not yet completely chitinised.

**Comparative notes:** In habitus and body colour, the new species resembles *A. johnbeckeri*, but it can be distinguished by the structures of mentum, labial palpomeres and elytra. *Archaeocindis hormozensis* sp.n. is easily distinguished from *A. johnbeckeri* by the shape of the mentum, which has a slightly more projecting mentum tooth and more acute epilobe teeth (comp. Figs. 3 and 4). The first labial palpomere of *A. hormozensis* sp.n. is very long, about as long as the ligula and much longer than the second (short and subequal to second in *A. johnbeckeri*) (comp. Figs. 5 and 6). The maximum width of the elytra is distinctly behind middle in *A. hormozensis* sp.n., while in *A. johnbeckeri* it is at mid-length (comp. Figs. 1 and 7).

**Etymology:** The specific epithet refers to the type locality.

**Habitat:** The type locality is a salty-muddy tidal zone at the seashore of Bandar Abbas. The place is within a military protected area. I spent a lot of time in different coastal places with similar habitats around Bandar Abbas and also in Bushehr Province, but the species was not found there.

**Distribution:** Currently only known from the type area in the vicinity of Bandar Abbas in Hormozgan Province, Iran.



Figs. 7–8: *Archaeocindis hormozensis* sp.n. (paratype): (7) dorsal habitus; (8) median lobe of aedeagus. © Alexandr Anichtchenko.

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