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ISCHNORHYNCHINAE FROM COSTA RICA (HEMIPTERA-HETEROPTERA: LYGAEOIDEA: LYGAEIDAE) WITH DESCRIPTION OF ONE NEW SPECIES OF *KLEIDOCERYS*

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ABSTRACT

The subfamily Ischnorhynchinae is distributed worldwide and is represented by 3 genera *Kleidocerys*, *Neokleidocerys*, and *Polychisme* in the American Continent. Here, we report this subfamily for the first time from Costa Rica, redescribe *Kleidocerys virescens*, *Neokleidocerys goldmani*, *Polychisme poecilus*, and describe a new species, *Kleidocerys costaricensis* **n. sp.** A dorsal habitus illustration of the male, drawings of the male genitalia, and scanning electron micrographs of some morphological features are provided for this new species. A key to all Costa Rican species in the subfamily is presented.

Key Words: *Neokleidocerys*, *Polychisme*, Central America

RESUMEN

La subfamilia Ischnorhynchinae está distribuida mundialmente, en el Continente Americano está representada por tres géneros *Kleidocerys*, *Neokleidocerys* y *Polychisme*. Reportamos aquí por primera vez a la subfamilia para Costa Rica, incluyendo a *Kleidocerys virescens*, *Neokleidocerys goldmani*, *Polychisme poecilus* y la descripción de una nueva especie, *Kleidocerys costaricensis*. Ilustración dorsal del macho, dibujos de la genitalia del macho, y microfotografías de microscopio electrónico de algunas estructuras morfológicas de esta nueva especie. Una clave para todas las especies costarricenses de la subfamilia también se presenta.

Translation provided by the authors.

The lygaeid subfamily Ischnorhynchinae has worldwide distribution and was reviewed by Scudder (1962). This review included 15 genera, 54 species, and host plant information. Species in the genus *Kleidocerys* Stephens occur in the Palearctic, Nearctic, and Neotropical Regions. In the American Continent 12 species have been reported: *K. denticollis* Stål, *K. dimidiatus* Barber, *K. franciscanus* Stål, *K. modestus* Barber, *K. obovatus* Van Duzee, *K. ovalis* Barber, *K. pallipes* Brailovsky, *K. punctatus* Distant, *K. resedae* Panzer (with 2 subspecies *K. resedae fuscomaculatus* Barber and *K. resedae geminatus* Say), *K. suffusus* Barber, *K. virescens* Fabricius, and *K. hispaniola* Baranowski (Barber 1953; Scudder 1962; Baranowski & Slater 2005). Although Slater & Brailovsky (1986) transferred from Ischnorhynchinae the genus *Polichisme*, and put it in Artheneinae, later on Kerzhner (1997) transferred again this genus to Ischnorhynchinae.

This paper reports the first record of the subfamily for Costa Rica. The only reports from Central America are *K. punctatus* and *K. virescens* for Panama, *K. virescens* in Honduras and Guate-

mala (Scudder 1962; Slater 1964; Brailovsky 1976; Slater & O'Donnell 1995), *K. resedae geminatus* in Panama (Slater 1964), and *Neokleidocerys godmani* (Distant) and *Neokleidocerys salvini* (Distant) in Guatemala (Distant 1882). Slater & Brailovsky (1989) studied the genus *Neokleidocerys* and described *N. variolosus* from Peru, *N. salvini* from Mexico, and *N. godmani* from Panama and Venezuela. *Polychisme poecilus* (Spinola) has been recorded only for South America and *Polychisme ferruginosus* (Stål) for Colombia. Here we include *Kleidocerys costaricensis* **new species**, *Kleidocerys virescens*, *Neokleidocerys godmani*, and *Polychisme poecilus* as the first records of these species and genera for Costa Rica as well as a diagnostic key to all Costa Rican species.

MATERIALS AND METHODS

Specimens examined were borrowed from the Colección Nacional de Insectos from Instituto de Biología, UNAM, Mexico (CNIN), and from Colección Entomológica del Instituto Nacional de Biodiversidad, Costa Rica (INBIO). Some speci-

mens are deposited in the following institutions: Coleccion Entomologica del Instituto de Ecologia, A.C. (IEXA), and in The National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM). Scanning electron micrograph (SEM) images were taken with a JEOL JSM-5600LV Scanning Electron Microscope. Measurements are given in mm $\pm$ SE.

RESULTS

Kleidocerys costaricensis Cervantes and Brailovsky
new species,

Figs. 1-5

Type Specimens. Holotype. Male. COSTA RICA. Provincia Cartago, Crater Volcan Irazu, 3-

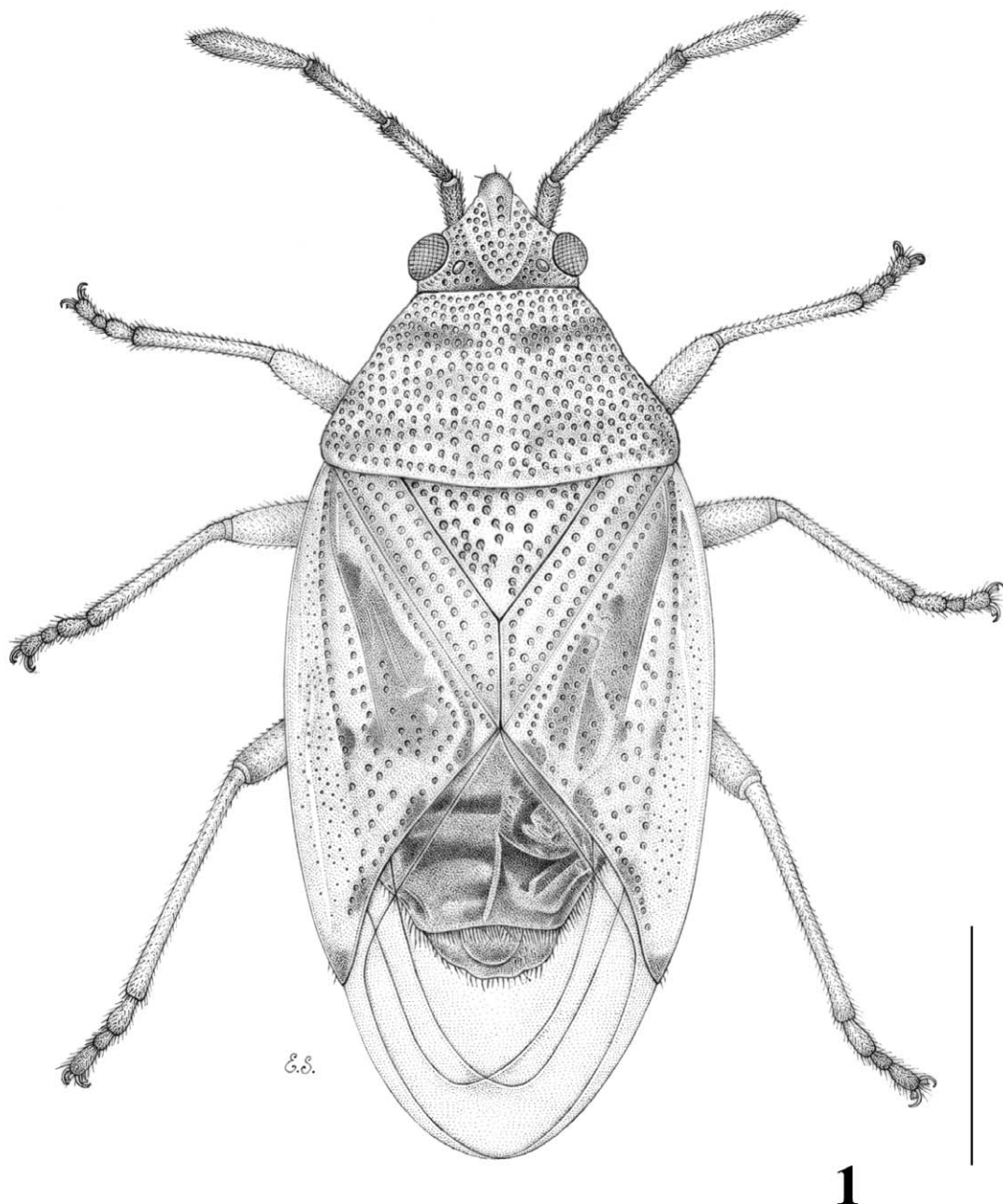
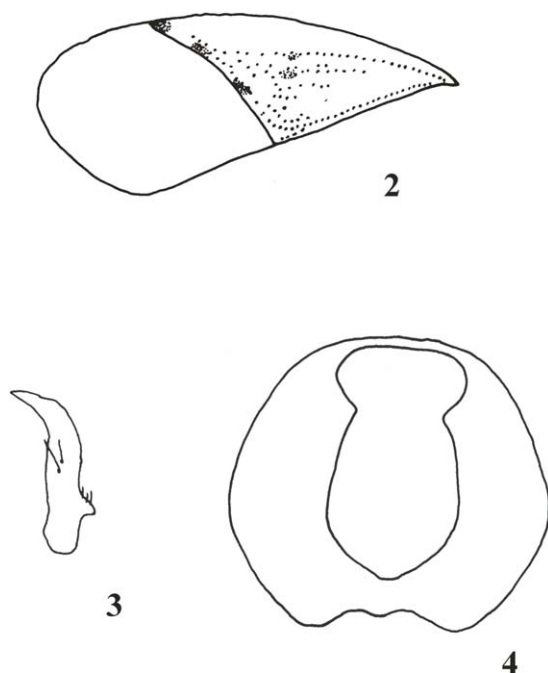


Fig. 1. Dorsal view of male of *Kleidocerys costaricensis*, **new species**.



Figs. 2-4. *Kleidocerys costaricensis* **new species**. 2. Hemelytra. 3. Paramere. 4. Male genital capsule.

IV-2007, H. Brailovsky, B. Kohlman, 3500 m (CNIN). Paratypes. 3 ♀ 8 ♂ Same data as Holotype (CNIN, IEXA, INBIO, USNM); 1 ♀ Provincia de Cartago, Cerro de la Muerte, Rt 2, InterAmerican Hwy. 27-II-1978, E.R. Snyder Hodges, 2700 m (USNM); 1 ♂ Provincia Limon, P. Int. La Amistad, Vallecito Los Sphagnum, 26-VI-2003, R. Gonzalez, A. Rodriguez, 2470 m, L.S. 339200_576850 #74152 (INBIO); 1 ♀ 1 ♂ Provincia Limon, P. Int. La Amistad, Valle del Silencio, Los Sphagnum, 27-IX-2003, R. Gonzalez, 25000 m, L.S. 339200 576850 #75024 (INBIO); 1 ♀ Provincia San Jose de Costa Rica, La Cima de Dota, 14-V-1993, M. Chavarria, 2300 m, L.S. 183500_548300 # 2154 (INBIO); 1 ♂ Provincia San Jose de Costa Rica, 14 miles N San Isidro del General, 10-VII-1974, L. and C.W. O'Brien, G.B. Marshall, 7300' (CNIN).

Diagnosis. This species can be differentiated from other species in the genus by the whitish corium and by the presence of 4 rectangular spots along the posterior corial margin.

Description. Head and pronotum variegated with amber, yellow, brown, and dark brown; head with 2 dark brown bands that run almost parallel to eyes and anterior lobe of pronotum with 2 cicatrices dark brown to black; punctures of head and pronotum widely distributed, those of head smaller; antenna with first and last segments dark brown to black, second and third segments yellow with base and apex dark brown; rostrum

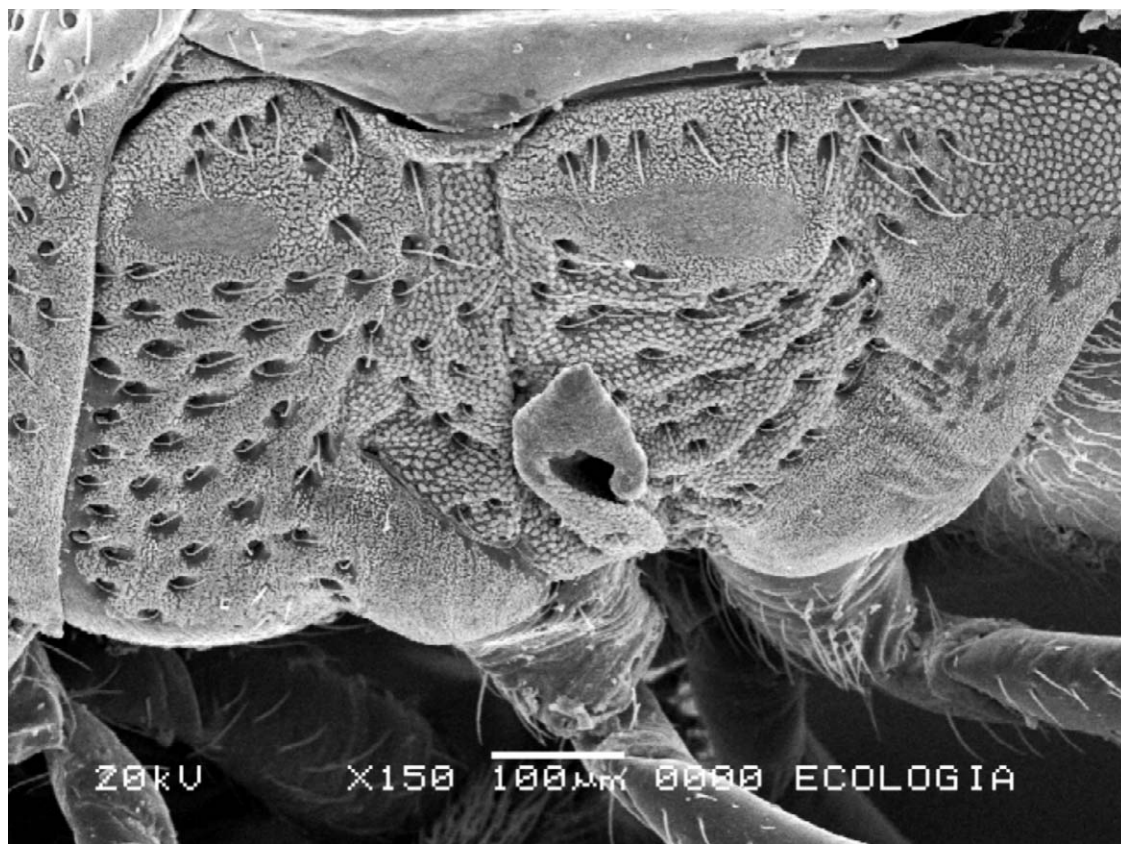
yellowish with last 2 segments dark brown and slightly surpassing metacoxae. Scutellum reddish brown to yellow with base usually darker; all covered with dense punctures. Clavus with 3 regular rows of punctures. Corium with 1 complete row of punctures parallel to the claval suture and 1 incomplete row with 3 to 5 punctures; corium usually whitish, although some specimens with translucent areas; in both cases punctures are distributed along the R+M vein and between R+M and discal area reaching posterior margin of corium; corium also with 2 rectangular dark brown spots mesially on the punctuated area between R+M and disc; and with 4 rectangular spots along posterior corial margin (Fig. 2). Legs with coxae and femora reddish yellow; tibiae and first tarsi yellow; other tarsi pale brown. Venter of head dark brown to black; propleura with anterior and posterior third yellowish, middle third dark brown; meso- and metapleura with anterior half dark brown and posterior half varying from whitish to yellow; pro-, meso- and metapleura with a darker delimited spot near dorsal margin. Peritreme of scent gland yellowish and with an elongated auricle with a pointed apex (Fig. 5). Abdominal venter with first 5 segments dark brown and rest of segments varying from red to yellow.

Male Genitalia. Opening of genital capsule with a mesial constriction (Fig. 3). Paramere with acute apex, internal margin entire and external margin with a prominent tubercle on basal third (Fig. 4).

Male Measurements ($n = 9$). Body length 3.75 ± 0.09 ; head length 0.41 ± 0.06 ; width across eyes 0.68 ± 0.02 ; interocular distance 0.39 ± 0.03 ; antennal segments: I 0.28 ± 0.03 , II 0.44 ± 0.03 , III 0.34 ± 0.03 , IV 0.48 ± 0.04 ; rostral segments: I 0.43 ± 0.03 , II 0.41 ± 0.02 , III 0.38 ± 0.03 , IV 0.29 ± 0.02 ; pronotum: length 0.74 ± 0.05 , width across anterior margin 0.62 ± 0.04 , width across humeral angles 1.3 ± 0.04 ; scutellum: length 0.45 ± 0.04 , width 0.7 ± 0.02 ; length claval commissure 0.38 ± 0.04 ; width across apex of clavus 1.63 ± 0.05 ; length hemelytra 2.73 ± 0.06 ; length membrane 1.29 ± 0.03 .

Female Measurements ($n = 3$). Body length 4.12 ± 0.25 ; head length 0.48 ± 0.1 ; width across eyes 0.72 ± 0.02 ; interocular distance 0.41 ± 0.04 ; antennal segments: I 0.29 ± 0.01 , II 0.48 ± 0.02 , III 0.33 ± 0.03 , IV 0.55 ± 0.05 ; rostral segments: I 0.43 ± 0.04 , II 0.44 ± 0.05 , III 0.38 ± 0.08 , IV 0.35 ± 0.05 ; pronotum: length 0.83 ± 0.06 , width across anterior margin 0.7 ± 0.01 , width across humeral angles 1.42 ± 0.08 ; scutellum: length 0.54 ± 0.04 , width 0.72 ± 0.02 ; length claval commissure 0.42 ± 0.02 ; width across apex of clavus 1.83 ± 0.14 ; length hemelytra 2.97 ± 0.11 ; length membrane 1.38 ± 0.08 .

Etymology. The species name refers to the country where specimens of this new species were collected.



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Fig. 5. Scanning electron micrograph of scent gland of *Kleidocerys costaricensis*, **new species**.

Distribution. Costa Rica

Discussion. This species differs from others in the genus *Kleidocerys*, by the presence of a whitish corium and the very sharp apex of the peritreme. It is very similar to *Kleidocerys modestus* Barber that is found only in United States, but *K. modestus* has an almost complete immaculated corium.

Kleidocerys virescens (Fabricius)

Acanthia virescens Fabricius, 1794. Ent. Syst. 4: 70

Redescription. Head and pronotum pale ochraceous, thickly covered with dark punctures. Hemelytra yellowish brown. Most of antennal segments ochraceous, basal segment brown, bases of segments III and IV dark brown. Rostrum extended to posterior coxae. Scutellum pale ochraceous, thickly, coarsely, and darkly punctuated at

base, a few coarse dark punctures along lateral margins, and a very characteristic central elongated dark spot. Corium, pale ochraceous, with 2 dark spots on disk and 4 along apical margin. Femora and apices of tibiae castaneous, tibiae and apices of femora pale ochraceous, tarsi ochraceous. Body length around 3.2 mm.

New Records. COSTA RICA. 1 ♂ Provincia Guanacaste, Estacion Pitilla, 9 km S. Santa Cecilia, VIII-1991, P. Rios, L-N-330200,380200 (INBIO); 3 ♀ 3 ♂ Provincia Guanacaste, Estacion Pitilla, 9 km S. Santa Cecilia, 31-III-29-IV-1992, K. Taylor, 700 m, L-N-330200,380200 (CNIN, IEXA, INBIO); 1 ♂ Provincia Guanacaste, Estacion Maritza, Lado Oeste del Volcan Orosi, VIII-1990, II curso Parataxonomos, 600 m, L-N-326900,373300 (INBIO); 1 ♂ Provincia Guanacaste, Rio San Lorenzo, Tierras Morenas, Z.P. Tenorio, IV-1992, F. Quesada, L-N- 287800, 427600 (INBIO); 6 ♀ 3 ♂

Provincia Heredia, Vara Blanca, Finca Georgina, IX-1989, Hanson, 2100 m; Provincia Heredia, Santo Domingo, Santa Rosa, INBIO parque, 1-XI-2004, R. Kriebel, 1100 m, L-N- 217300-526300 # 782365 (CNIN, IEXA, INBIO).

Distribution. Costa Rica, Guatemala, Honduras, Mexico, Panama, United States of America, and West Indies.

Discussion. This species is very similar to *Kleidocerys suffusus* Barber that is distributed in several islands in the Caribbean. *Kleidocerys virescens* is also recorded in the Caribbean but is widely distributed from the South of the USA to Central America. *Kleidocerys suffusus* differs from *K. virescens* by the reddish coloration of head, pronotum, and scutellum.

Neokleidocerys godmani (Distant)

Ischnorhynchus godmani Distant, 1882. Biol. Cent. Amer. 1: 193-194

Redescription. Head dark brownish orange, with 2 black maculae on posterior third of interocular space; tylus pale orange; most of juga and margin near eyes cover with a whitish cerumen; antennal segment I pale orange, segments II and III bright yellow with base and apex slightly darker; segment IV dark brown or reddish brown with base yellow; anterior lobe of pronotum dark brownish orange, posterior lobe yellowish orange with punctures slightly darker; scutellum with basal third yellowish orange and the rest reddish brown; clavus ochraceous with brownish orange punctures; corium hyaline, with punctures, a macula situated near middle third of endocorium, and a rectangular macula situated in the apical angle pale orange in color; membrane ambar. Ventrally the head and prothorax are pale orange with following areas black: posterior area of gula, and a long macula on propleura; rostral segments ochraceous with most of segment IV black; mesothorax dark orange with a fine whitish cerumen, acetabula ochraceous and mesosternum

black; metathorax dark orange with a fine whitish cerumen, acetabula and posterior margin whitish yellow; posterior margin of metathorax with a middle rectangular pale brown macula; coxae brownish orange with apex yellow; trochanter, tarsi and femora bright yellow; femora with a brown orange subapical ring; sternites brownish orange with brownish scattered areas. Body length between 4.5 and 5.1 mm.

New Records. COSTA RICA. 1 ♀ Provincia Guanacaste, Estacion Cacao, SW side Volcan Cacao, IX-1989, R. Blanco, C. Chavez, 1000-1400 m, 323300-375700 (INBIO).

Distribution. Costa Rica, Panama, Venezuela.

Polychisme poecilus (Spinola)

Pachymerus poecilus Spinola, 1852.

In Gay, Hist. Chile Zool. 7: 149

Description. This species can be distinguished by a single row of punctures along claval suture, and by the pronotum laterally carinated. General coloration dull yellowish; head slightly punctured with darker areas around juga; antenna and rostrum ochraceous, with base and apex of antennal segments paler; pronotum evenly punctured, with anterior margin and carina impunctated; scutellum strongly punctated, except the V shape that is pale; pleura densely punctured; legs ochraceous, with apex of tibia and all tarsi dark brown. Abdominal venter without punctures. Body length between 4.3 and 5 mm.

New Records. COSTA RICA. 1 ♀ Provincia Alajuela, Zarcero, Alfaro Ruiz, IV-V-1989, A. Del Valle, A. Solis, 1700 m, 240500, 493500 (INBIO); 1 ♂ Provincia Guanacaste, Miravalles, Volcan Miravalles, 4-VII-31-VIII-2005, J. Azofeita, 1900 m, Malaise trap, L-N 303100 410400 # 84550 (IEXA); 1 ♀ Provincia Heredia, Estacion Barva. Braulio Carrillo, IV-1990, A. Fernandez, 2500 m (INBIO).

Distribution. Argentina, Bolivia, Chile, Costa Rica.

KEY TO THE ISCHNORHYNCHINAE OF COSTA RICA

- 1— Corium with 2 rows of punctures along claval suture near inner angle and a complete row extending the whole length; pronotum laterally ecarinate 2
- 1'—Corium with 1 row of punctures along claval suture; pronotum laterally carinate
..... *Polychisme poecilus* (Spinola)
- 2— Pronotum with a distinct anterior constriction or collar; apical portion of corium broadly dark brown
..... *Neokleidocerys godmani* (Distant)
- 2'—Pronotum without a distinct anterior constriction or collar; apical portion of corium usually pale, with few small dark maculae all around corium. 3
- 3— Scutellum with a central elongate dark spot; length approximately 3.2 mm
..... *Kleidocerys virescens* (Fabricius)
- 3'—Scutellum without a central elongate dark spot; length more than 3.7
..... *Kleidocerys costaricensis*, **new species**

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