

## The two new species of *Kaveinga* from Indonesia (Coleoptera: Carabidae: Rhysodini)

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**Taxonomy, description, new species, Coleoptera, Carabidae, Rhysodini, *Kaveinga*, Indonesia, Lesser Sunda Islands, West Timor, Tanimbar Islands, Yamdena**

**Abstract.** Two new species of *Kaveinga* (*Kaveinga*) from Indonesia, *Kaveinga* (*Kaveinga*) *timorensis* sp. nov. from Nusa Tenggara Timur province (Timor Is.) and *Kaveinga* (*Kaveinga*) *jakli* sp. nov. from Maluku province (Tanimbar Islands, Yamdena) are described, illustrated and compared with related congeners.

### INTRODUCTION

The nominotypical subgenus of the genus *Kaveinga* R. T. Bell & J. R. Bell, 1978 including sixteen described species belongs to the largest taxa of subtribus Rhysodina. The whole genus was revised by R. T. Bell & J. R. Bell in 1979. Two additional species of *Kaveinga* (*Kaveinga*) were described later (R. T. Bell & J. R. Bell 1985, 2000), but so far no species has been known from the island Timor or Yamdena. The purpose of the present paper is to describe two additional species, one from the Indonesian part of Timor (Nusa Tenggara Timur province) and second from the Indonesian province Maluku, more precisely from Yamdena, the largest of the Tanimbar Islands, both belonging to the mentioned subgenus *Kaveinga* (s. str.).

### MATERIAL AND METHODS

The paper is based on the study of type material of the new species described below and available consubgenera (*K. abbreviata* (Lea, 1904) and *K. kukum* R. T. Bell & J. R. Bell, 1979) from the author's collection. The specimens included in this study are deposited in the following private collection:

OHPC Oldřich Hovorka, private collection, Praha, Czech Republic.

Measurements were made with an MBS-10 stereoscopic microscope, at magnifications of 8x, 16x and 32x. Measurements of body parts and corresponding abbreviations used in the text are as follows:

EL = elytral length - length of left elytron measured from humerus to apex;

EW = elytral width - maximal width of both elytra combined;

HL = length of head - measured from apex of clypeus to posterior margin of median lobe;

HW = width of head - maximal width of head (including eyes);

PL = pronotal length - length of pronotum measured along midline;

PW = pronotal width - maximal width of pronotum;

TL = total length - length measured from the apex of left mandible (mandibles closed) to the apex of left elytron.

The morphological terms used in the present study are adopted from R. T. Bell & J. R. Bell (1978, 1979).

The type specimens of newly described species are provided with locality label and red printed label: “*Kaveinga (Kaveinga) / timorensis* (or *jakli*) sp. nov. / HOLOTYPE (or PARATYPE) / det. O. Hovorka, 2019”.

## DESCRIPTION

### *Kaveinga (Kaveinga) timorensis* sp. nov.

(Figs. 1-2)

**Type material.** Holotype (♀) labelled: “Lesser Sundas, West Timor / Amarassi distr., 300 m / Buraen env., 7-14.4.2007 / St. Jakl lgt.”, (OHPC). Holotype is damaged: right hind (metathoracic) leg is missing and only femur is present in left one.

**Description.** Habitus - the new species is medium-sized, habitually very similar to its congeners (Fig. 1). Body colour (including antennae) is dark brown to brown-black, legs are slightly lighter, brown to brown-red, with femora slightly darker than tibiae and tarsi. Palpomeres yellow-brown. Body elongate, narrow. TL 5.9 mm. Head exactly as long as wide. Pronotum slightly wider than head (PW:HW 1.20), slightly longer than wide (PL:PW 1.14), widest in the anterior third of length. Elytra elongate (EL:EW 2.31), widest at the anterior quarter of length.

Head (Fig. 1) quadrate, with large eyes. Antennomere I strongly pollinose dorsally, antennomeres II-V with narrow apical band of pollinosity through insertions of apical setae, but without any basal pollinose band. Basal setae present on antennomeres VII-X. Antennomeres VI-X with narrow apical ring of minute setae. Antennal segment XI without stylet, only 1.07 times longer than wide. Median lobe elongate, in anterior part covered by pollinosity, which occurs laterally at the level of posterior part of parafrontal boss and as the stripe of pollinosity gradually extends anteriorly, glabrous area is narrowing towards clypeus, which is relatively broadly separated from glabrous part of median lobe by band of pollinosity as wide as width of parafrontal boss; sides of posterior part of median lobe are broadly emarginate. Clypeal setae present; clypeus with one conspicuous anterior pit. Parafrontal boss elongate, only very narrowly separated from median lobe, not distinctly separated from antennal rim. Orbital groove narrow, but distinct, reaching approximately the level of posterior margin of eye. Temporal lobe about as wide as long, anteriomedial margins oblique, converging posteriorly, medial angle obtuse, touching median lobe; one temporal seta present, inserted in prominent puncture; occipital angle slightly prominent, somewhat lobate; temporal lobe with overhang in lateral view. Eyes very large, only slightly convex; postorbit pollinose. Postorbital or suborbital tubercle and gular ridge absent. Mentum with



Figs. 1-2: Holotype of *Kaveinga (Kaveinga) timorensis* sp. nov., length 5.9 mm: 1- habitus, dorsal view; 2- habitus, ventral view.

few small punctures and transverse grooves, submentum smooth, pollinose only along gular groove; about dozen of prelabial setae and one pair of large postlabial setae present.

Pronotum (Fig. 1) relatively short, only slightly longer than wide, its sides convex in anterior third, then nearly rectilinear; widest point approximately at the anterior third of length, slightly narrowed at the base, more strongly at apex. Lateral pronotal margin not sinuate anterior to obtuse hind angle; shallow emargination present between hind angle and base. Lateral setae absent, but angular seta present. Paramedian grooves deep, pollinose, approximately as wide as outer carina. Anterior tip of inner carina pollinose, so that glabrous area appears abbreviated anteriorly; posterior part of inner carina distinctly narrowed, but not pointed, that of outer carina more strongly narrowed. Marginal grooves relatively broad. Prosternal carinae distinct (Fig. 2), long, but not by a long sight reaching anterior prosternal margin. Both prosternum and proepisternites anteriorly widely pollinose, pollinosity going posteriad along prosternal carinae and lateral margins of proepisternites. Prosternal process

with pollinose fovea between procoxae and deep transverse pollinose impression with deeper central fovea posteriorly.

Elytra (Fig. 1) narrow, cylindrical, humeral tubercle well developed, projecting anteriorly, but not laterally. Elytral striae impressed, wide, distinctly pollinose and strongly punctate, stria punctures at least 0.5 as wide as interval; intervals distinctly convex. Stria II with 1 (left elytron) or 2 (right elytron) setae in apical fourth, stria IV with 4 setae in posterior half, stria VII with 5 setae near apex. Abdominal sternites III-VI indistinctly punctate only in transverse, uninterrupted, strongly pollinose sulcus, rest of surface not punctured with exception of sternite VI, which is coarsely punctured throughout and bears one pair of setae near posterior margin. Mesotibia is very distinctly serrulate on lateral margin.

Male unknown.

**Differential diagnosis.** The *K. timorensis* sp. nov. is the first species of the genus *Kaveinga* known from the Timor. The species belongs without doubts to Group I of the nominotypical subgenus as defined by R. T. Bell & J. R. Bell (1979: 397). The Group I is characterized by deep, pollinose elytral striae, subcarinate intervals and abdominal sterna with complete (not interrupted) transverse sulci. The group is formed by eight species - four species of *K. pignoris*-complex from Solomon Islands and Santa Cruz Islands, all described by R. T. Bell & J. R. Bell (1979) - *K. kukum*, *K. nudicornis*, *K. pignoris* and *K. ulteria*, than by *K. abbreviata* (Lea, 1904) from Australia (Queensland), *K. fibulata* R. T. Bell & J. R. Bell, 1979 from New Britain, *K. poggii* R. T. Bell & J. R. Bell, 1985 from D'Entrecasteaux Islands (Goodenough Is.) and *K. waai* R. T. Bell & J. R. Bell, 2000 from Moluccas (Ambon), so far westernmost known species of the group.

The new species differs from known congeners by the following combination of characters: head is not wider than long; elytral striae and transverse sulci on abdominal sternites are deep and pollinose; pronotum relatively short and broad, PL:PW 1.14; parafrontal boss not pollinose, elongate, separated from median lobe by very narrow linear pollinose band, not distinctly separated from antennal rim; outer pronotal carina about as wide as inner carina; paramedian groove about as wide as outer carina; pronotum without marginal setae, only angular seta present; basal setae present on antennomeres VII-X.

Most characters are shared with *K. abbreviata* and *K. poggii*; *K. abbreviata* differs by differently shaped parafrontal boss, which is distinctly separated from antennal rim, by presence of basal setae only on antennomeres VIII (or IX)-X, by differently shaped clypeus separated more broadly from median lobe, by shorter pronotum (PL:PW maximally 1.10) etc.; *K. poggii* differs by inner carina of pronotum acutely pointed posteriorly and parafrontal boss round and broadly separated from both antennal rim and median lobe. These two species seem to be at the moment the nearest relatives of *K. timorensis* sp. nov. Other species of Group I of *Kaveinga* (s. str.) differs by much more elongate pronotum, PL:PW minimally 1.20 (all species of *pignoris*-complex and *K. fibulata*) or by presence of precoxal and pronotal marginal setae (*K. waai*).

**Name derivation.** The species is named after the island of origin - Timor.

***Kaveinga (Kaveinga) jakli* sp. nov.**

(Figs. 3-4)

**Type material.** Holotype (♀) labelled: "Indonesia, Tanimbar Isls / Yamdena Isl, Lorulun vill. env. / 20 km NE of Saumlaki, 150 m / 25.11.-24.12.2006, St. Jakl lgt.", (OHPC). Paratype: (1 ♀): the same data as holotype (OHPC).

**Description.** Habitus - the new species is medium-sized, habitually very similar to its congeners (Fig. 3). Body colour (including antennae) is dark brown to brown, legs are slightly lighter, brown to brown-red, with femora slightly darker than tibiae and tarsi. Palpomeres yellow-brown. Body elongate, narrow. TL 5.4-5.7 mm. Head as long as wide. Pronotum slightly wider than head (PW:HW 1.17-1.19), slightly longer than wide (PL:PW 1.14-1.15), widest at the anterior third of length. Elytra elongate, EL:EW 2.34-2.40, widest at the anterior quarter of length.

Head (Fig. 3) quadrate, with large eyes. Antennomere I strongly pollinose dorsally, antennomeres II-V with narrow apical band of pollinosity through insertions of apical setae, but without any basal pollinose band. Basal setae present on antennomeres VII-X. Antennomeres VI-X with narrow apical ring of minute setae. Antennal segment XI without stylet, about 1.3 times longer than wide. Median lobe similar as in previous species. Clypeus separated from median lobe relatively narrowly by band of pollinosity, which is narrower than width of parafrontal boss (but in paratype is median lobe connected with clypeus by very narrow glabrous strip); sides of posterior part of median lobe are broadly emarginate. Clypeal setae present; clypeus with one conspicuous anterior pit. Parafrontal boss more or less triangular, very distinctly separated both from median lobe and antennal rim. Orbital groove distinct, relatively wide, reaching approximately the level of posterior margin of eye. Temporal lobe slightly longer than wide, anteriomedial margins oblique, converging posteriorly, medial angle obtuse, overlapped by median lobe; one temporal seta present, inserted in prominent puncture; occipital angle slightly prominent, somewhat lobate; temporal lobe with overhang in lateral view. Eyes very large, only slightly convex; postorbit pollinose. Postorbital or suborbital tubercle and gular ridge absent. Mentum not punctured, with few shallow transverse grooves, submentum smooth, pollinose only along gular groove; about 14-16 prelabial setae and two pairs of large postlabial setae present.

Pronotum (Fig. 3) relatively short, only slightly longer than wide, its sides convex in anterior third, than nearly rectilinear; widest point approximately at the anterior third of length, slightly narrowed at the base, more strongly at apex. Lateral pronotal margin slightly but distinctly sinuate anterior to obtuse hind angle; shallow emargination present between hind angle and base. Lateral setae absent, angular seta present. Paramedian grooves deep, pollinose, narrower than outer carina. Anterior tip of inner carina pollinose, so that glabrous area appears abbreviated anteriorly; posterior part of inner carina distinctly narrowed, but not pointed, that of outer carina is slightly narrowed. Marginal grooves relatively broad. Prosternal carinae distinct (Fig. 4), long, slightly curved, extended about 70% of distance to anterior prosternal margin. Both prosternum and proepisternites anteriorly widely pollinose, pollinosity going posteriad along prosternal carinae and lateral margins of proepisternites, more extensive than in previous species. Prosternal process with pollinose fovea between procoxae and deep transverse pollinose impression with deeper central fovea posteriorly.





Figs. 3-4: Holotype of *Kaveinga (Kaveinga) jakli* sp. nov., length 5.7 mm: 3- habitus, dorsal view; 4- habitus, ventral view.

Elytra (Fig. 3) narrow, cylindrical, humeral tubercle well developed, projecting anteriorly, but not laterally. Elytral striae impressed, wide, distinctly pollinose and strongly punctate, strial punctures about 0.4-0.5 as wide as interval; intervals distinctly convex. Stria I with 1-2 setae in apical fifth, stria II with 1 basal seta and 2 setae in apical fourth, stria IV with 5-6 setae along whole length, 1-2 setae are in preapical cavity formed by merging of striae II-IV, stria VII with 7-9 setae near apex. Abdominal sternites III-VI indistinctly punctate only in transverse, uninterrupted, strongly pollinose sulcus, rest of surface not punctured with exception of sternite VI, which is coarsely punctured throughout and bears one pair of setae near posterior margin. Mesotibia is distinctly serrulate on lateral margin.

Male unknown.

**Differential diagnosis.** The *K. jakli* sp. nov. is the first species of the genus *Kaveinga* known from the Tanimbar Islands. Together with the previous species (see above), it belongs without doubts to Group I of the nominotypical subgenus as defined by R. T. Bell & J. R.

Bell (1979: 397). The only other species known from Moluccas is *K. waai* from Northern Moluccas (Ambon), which is evidently not closely related to *K. jakli* sp. nov.

The new species differs from known congeners by following combination of characters: head is not wider than long; elytral striae and transverse sulci on abdominal sternites are deep and pollinose; pronotum relatively short and broad, PL:PW 1.14-1.15; parafrontal boss not pollinose, triangular, distinctly separated from both median lobe and antennal rim; outer pronotal carina about as wide as inner carina; paramedian groove narrower than outer carina; pronotum without marginal setae, only angular seta present; basal setae present on antennomeres VII-X.

Other species of Group I of *Kaveinga* (s. str.) differs by much more elongate pronotum (all species of *pignoris*-complex and *K. fibulata*) or by presence of precoxal and pronotal marginal setae (*K. waai*). Most character states are again shared with *K. abbreviata* and *K. poggii*, as in previous species. *K. abbreviata* differs by presence of basal setae only on antennomeres VIII (or IX)-X, by differently shaped median lobe separated more broadly from clypeus, by shorter pronotum (PL:PW maximally 1.10) etc., *K. poggii* differs by inner carina of pronotum acutely pointed posteriorly, differently shaped clypeus and parafrontal boss round and more broadly separated from antennal rim. As mentioned, other species sharing many characters is *K. timorensis* sp. nov., which differs by parafrontal boss not distinctly separated from antennal rim, wider paramedian grooves, only one pair of postlabial setae and reduced elytral chaetotaxy.

**Name derivation.** The species is dedicated to its collector, Stanislav Jákł.

ACKNOWLEDGEMENT. I am very grateful to my colleague Stanislav Jákł (Prague, Czech Republic) for the kind donation of the material of Rhsodini.

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Received: 13.12.2019

Accepted: 20.12.2019

Printed: 31.3.2020

