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A new species of *Cassida* L. from Australia (Coleoptera: Chrysomelidae: Cassidinae)

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ABSTRACT. *Cassida polymeriae* new species, is described from Queensland, Australia. It belongs to the small group of Australian species related to *Cassida denticulata* BOHEMAN, 1856, characterized by small body size and simple claws. It feeds on *Polymeria calycina* BROWN (Convolvulaceae). *Dichondra repens* J. R. & G. FORSTER (Convolvulaceae) is recorded as a new host plant for *Cassida denticulata* BOH.

Key words: entomology, taxonomy, new species, new host plant, Coleoptera, Chrysomelidae, Cassidinae, *Cassida*, *Polymeria calycina*, Australia.

INTRODUCTION

The genus *Cassida* LINNAEUS, 1758 with 428 described species is the most speciose genus within the family Cassidinae (BOROWIEC 1999 a, BOROWIEC and ŚWIĘTOJAŃSKA 2010). The genus is distributed throughout the Old World with two native species in North America (SPAETH 1927, MAJKA and LeSAGE 2008). Most species occur in tropical Asia and Africa with a great centre of diversity in Madagascar (BOROWIEC unpublished data). A large number of species (approximately 160) is known from the Oriental region, many of them described recently (BOROWIEC 1995, 1999 b, 2001, 2002 a, b, 2009, 2010; BOROWIEC and GHATE 2004; BOROWIEC and ŚWIĘTOJAŃSKA 1996, 1997; BOROWIEC and TAKIZAWA 1991; MEDVEDEV and EROSHKINA 1988; SEKERKA and BOROWIEC 2008; ŚWIĘTOJAŃSKA and BOROWIEC 2002). Australian members of the genus were revised recently (BOROWIEC 1990) and only one species has been described subsequently (BOROWIEC

2006) and another reduced to synonymy (BOROWIEC 1994). Currently 9 species have been recorded from the Australian mainland. They form two distinct groups separated morphologically and partly geographically.

The first group, which includes *Cassida denticulata* BOHEMAN, 1856, *Cassida mera* GERMAR, 1848, *Cassida navicella* BOHEMAN, 1862 and *Cassida sappho* BOHEMAN, 1862 occurs mostly in south-eastern Australia in the states of South Australia, Victoria, New South Wales and extending as far north as southern Queensland. Species of this group are characterized by: small size, body length always less than 5.6 mm (usually under 5 mm); elytra short oval to oval, strongly convex; elytral disc with regular row of punctures; explanate margin of elytra narrow and strongly declivous; clypeus punctate, antennae short; claws simple and ventrites partly brown to black. The host plants of this group of species have been unknown hitherto but the junior author observed feeding of *Cassida denticulata* BOH. on *Dichondra repens* J. R. & G. FORSTER, a member of the family Convolvulaceae. This group of species is unique to Australia and has no close extralimital relatives.

The second group, which includes *Cassida aureola* (SPAETH, 1915), *Cassida compuncta* (BOHEMAN, 1855), *Cassida diomma* BOISDUVAL, 1835, *Cassida queenslandica* BOROWIEC, 2006 and *Cassida sexguttata* BOISDUVAL, 1835 occurs mostly in northern and north-eastern Australia (*C. diomma* and *C. sexguttata* also occur in the Papuan subregion and *C. compuncta* has been introduced to Fiji) with only *C. compuncta* extending to south-eastern Australia. Species of the group are characterized by: moderate size, body length 5.0-6.6 mm (usually more than 5.5 mm); elytra almost circular, moderately convex, puncturation of disc usually disturbed by elytral relief (except *C. aureola* and *C. queenslandica*); explanate margin of elytra broad, subhorizontal; clypeus impunctate; antennae more or less elongate; claws apparently appendiculate (simple but appearing appendiculate due to projecting distal flanks of the last tarsal segment) and ventrites always uniformly yellow. Host plants are known for *C. compuncta* (*Ipomoea cairica* L. (SWEET) (HAWKESWOOD et al. 1997)) and *C. diomma* (*Ipomoea batatas* (L.) Lam. and *Ipomoea triloba* L. (HAWKESWOOD 1998)). This group of species has many relatives in the Oriental and Afrotropical regions, usually classified in the subgenus *Taiwania* SPAETH, 1913 but according to BOROWIEC (2007) the subgenus is polyphyletic and many unrelated species have been classified within *Taiwania* only because they possess appendiculate or apparently appendiculate tarsal claws.

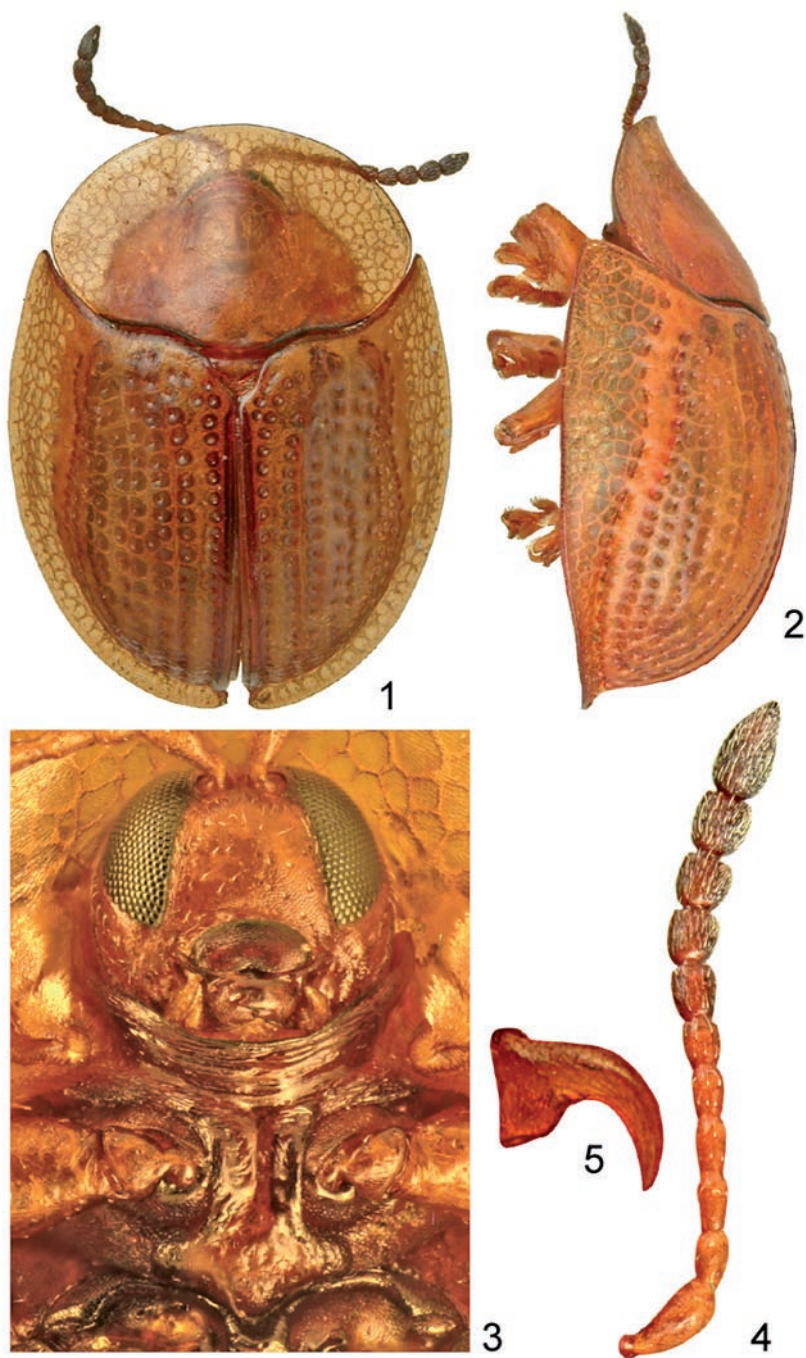
Here we describe a new species of *Cassida* from Australia belonging to the first group of species. It was collected in south-eastern Queensland and, with *C. denticulata* and *C. sappho*, it is the third species of the group from Queensland.

DESCRIPTION OF A NEW SPECIES

Cassida polymeriae n. sp.

ETYMOLOGY

Named after its host plant *Polymeria calycina* BROWN (Convolvulaceae).



1-5. *Cassida polymeriae* n. sp.: 1 – dorsal, 2 – lateral, 3 – head and prosthernum, 4 – antennae, 5 – tarsal claw

TYPE MATERIAL

Holotype: [Australia]: "SEQ: 27°54'S 152°41'E/16 km N Boonah/14-15.xii.1996 Burwell/on *Polymeria calycina*/Convolvulaceae" // QMTxxxx; five paratypes with same data as holotype; two paratypes: "AUSTRALIA, Queensland/Dirranbandi/ 1 VII 1983 (holotype and four paratypes preserved in the Queensland Museum, Brisbane, Australia, three paratypes preserved in the collection of the Department of Biodiversity and Evolutionary Taxonomy, University of Wrocław, Poland).

DIAGNOSIS

The new species belongs to the group of endemic Australian species close to *Cassida denticulata*. It differs from all four other species in the group by its impunctate explanate elytral margins (more or less punctate in other species). *Cassida mera* differs by its coarsely punctate pronotal disc and very coarsely punctate elytral rows with the intervals half the width of the rows (pronotal disc impunctate and elytra moderately punctate with the intervals as wide as to slightly wider than the rows in *C. polymeriae*). *Cassida denticulata* differs in having the elytral margin at the sutural apex deeply emarginate, thus the suture is extended into a sharp spine, and the explanate elytral margin usually has a dark posterolateral spot (the suture is not extended into a spine and the explanate elytral margin lacks spots in *C. polymeriae*). *Cassida navicella* is larger with relatively narrower elytra (body length 4.50-5.50 [mean 5.1] vs. 3.80-4.85 [mean 4.4] mm in *C. polymeriae* and length/width ratio 1.41-1.58 vs. 1.32-1.48 in *C. polymeriae*). At first glance *Cassida sappho* most closely resembles *C. polymeriae* but, in addition to its punctate explanate elytral margins, the punctuation of the elytral disc is fine, the elytral rows are not impressed and the elytra are usually darkly patterned (punctuation of the elytral disc is slightly coarser, the rows are distinctly impressed, especially on the slope, and the elytra are unpatterned in *C. polymeriae*).

DESCRIPTION

Length: 3.80-4.85 mm (mean 4.44, $n = 8$), width: 2.80-3.35 mm (mean 3.15, $n = 8$), width of pronotum: 2.25-2.865 mm, length of pronotum: 1.60-1.85 mm, body length/width ratio: 1.32-1.48, width/length ratio of pronotum: 1.41-1.56. Body short-oval (fig. 1). Sexual dimorphism indistinct, males slightly stouter than females.

Dorsum uniformly ochre-yellow (fig. 1). Ventriles mostly ochre-yellow, thorax more or less infusate, borders of thoracic plates especially darkened, in extreme cases ventral half of metasternal plate brown. Abdomen more or less infusate in middle, in extreme cases with central brown spot with diffuse borders. Legs and clypeus uniformly ochre-yellow. Antennal segments 1-6 yellow then antenna gradually infusate to apex.

Pronotum broadly oval with maximum width approximately in middle, sides broadly rounded, no basal corners; disc moderately convex, indistinctly separated from explanate margin; surface of disc alutaceous, impunctate, only with extremely fine and scarce pricks; surface of explanate margin alutaceous, impunctate, transparent with honeycomb structure. Base of elytra only slightly wider than pronotum (fig. 1), humeri moderately protruding anteriorly, angulate (fig. 2). Elytra on sides regularly rounded, widest slightly in front of mid-length; elytral disc from slightly depressed to regularly

convex (paratypes from Dirranbandi have elytral disc less convex than series from Boonah), without tubercles or impressions, highest point approximately at mid-length of elytra (fig. 2). Elytral punctation arranged in regular rows, moderately coarse and moderately dense, distance between punctures mostly as wide as, to slightly wider than puncture diameter. Marginal row distinct, regular, its punctures as coarse as those on sides of disc. Rows on whole length impressed, very shallowly in anterior half, deeply on slope (paratypes from Dirranbandi have elytral rows slightly more impressed than series from Boonah). Intervals distinct, in sutural half of disc two to three times wider than rows, intervals 1, 3 and 5 slightly wider than intervals 2 and 4. Intervals 4 and 6 closed and convex at apex. Marginal interval distinct, broad, distinctly wider than two submarginal intervals. Surface of intervals alutaceous, impunctate. Explanate margin moderately broad, its maximum width equal to 1/5 width of elytral disc, strongly declivous in anterior half, subhorizontal in, apical 1/6 of length. Surface of explanate margin regular, impunctate, alutaceous. Epipleura lacking pubescence.

Antennae moderately elongate, ratio of lengths of antennal segments: 100: 58: 60: 65: 55: 52: 60: 55: 55: 63: 107, segment 3 approximately as long as segment 2 and slightly shorter than segment 4; segment 10 approximately as long as wide (fig. 4).

Clypeus broad, approximately 1.4 times as wide as long, clypeal lines indistinct, running along margin of eyes and converging in an arch at apex. Clypeal plate slightly convex, without impressions, its surface alutaceous with several small, setose punctures. Labrum very shallowly emarginate (fig. 3). Prosternal process in central part parallel sided and shallowly impressed along mid-line, apex strongly expanded, trilobate (fig. 3).

Claws simple (fig. 5).

HOST PLANT

Convolvulaceae: *Polymeria calycina* BROWN. This is a newly recorded host genus for the subfamily Cassidinae (BOROWIEC and ŚWIĘTOJAŃSKA 2010).

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