

Description of the first endemic *Polistes* Latreille, 1802 from Sulawesi (Hymenoptera: Vespidae: Polistinae)

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A new species of *Polistes* Latreille, 1802 from Sulawesi, namely *Polistes* (*Polistella*) *celebensis* Selis, **sp. nov.**, is described and figured. This is the first endemic species of this genus from Sulawesi.

Polistes is a large genus of social wasps distributed worldwide, comprising more than 200 species. Of this genus, 33 taxa are recorded from Indonesia, many being endemic to single islands or small archipelagos, with the widespread species *Polistes* (*Gyrostoma*) *tenebricosus* Lepeletier, 1836 and *Polistes* (*Polistella*) *sagittarius* de Saussure, 1853 being the only species recorded from Sulawesi (Carpenter 1996; Nugroho *et al.* 2012; Kojima *et al.* 2007). Sulawesi is one of the places with the highest rate of endemic species, counting 71 taxa of Vespidae, of which 39 are endemic (Nugroho *et al.* 2012; Selis 2016, 2017). Due to the wide distribution of *Polistes* in Indonesia as a whole, and the biodiversity present on Sulawesi, the presence of an endemic *Polistes* species from the island was expected, but no species were described until now. In this study the first endemic species of *Polistes* from Sulawesi is described and figured.

Key words: Hymenoptera, Vespidae, Polistinae, *Polistes*, new species, Sulawesi

Material and methods

The adult morphology and coloration were observed on pinned, dried specimens under a Seben Incognita III stereoscopic microscope.

The photos of the specimens were taken with a Jessop lens mounted on a Canon EOS 1300D.

“Body length” indicates the length in dorsal view of head, mesosoma and the first two metasomal terga combined. Metasomal terga, metasomal sterna and antennal flagellomeres are abbreviated as T, S and F respectively.

Measurements were taken using a digital Vernier caliper (accuracy ± 0.1 mm).

In reproduction of labels, single slash (/) divides lines on same label and double slash (//) divides labels.

The acronyms used are as follows:

MSNVE Museo Civico di Storia Naturale, Venezia, Italy;

MSVI Private collection of Marco Selis, Viterbo, Italy.

Polistes (*Polistella*) *celebensis* Selis, **sp. nov.** (Figs. 1–5)

Material examined. Holotype, ♀, pinned: “ID—Sulawesi, Maros / Bantimurung Nat. Park. / IV.2016 // *Polistes* (*Polistella*) *celebensis* / Selis, **sp. nov.** / HOLOTYPE ♀ / Det. Marco Selis 2018” (MSNVE). Paratype, ♀, same data as holotype (MSVI).

Diagnosis. This species can be differentiated from all other Indonesian *Polistella* species by the following combination of characters: jugal lobe present and not reduced, posterior ocelli separated by more than one ocellar diameter, T1 broad, fore wing with apical spot, pronotum strongly punctured and without striae, propodeum strongly striate, black coloration with extensive reddish-brown markings and yellow lines.

Description. *Female.* Body length 11.5–12 mm; fore wing length 11.5–13.8 mm.

Head in frontal view 1.1× as wide as high (Fig. 3); in dorsal view temples converging behind. Vertex flattened and sloping down behind posterior ocelli. Gena in lateral view 0.6× as wide as eye; occipital carina fine but quite distinct, absent in ventral third of gena. Inner eye margins weakly convergent ventrally. Antennal sockets closer to inner eye margin than to each other; interantennal space very weakly convex. Clypeus in frontal view about as wide as high, apex slightly truncate in the middle (Fig. 3); in lateral view weakly and regularly convex from base to apex; length of lateral margin of clypeus lying along inner eye margin longer than diameter of antennal socket and 1.5× as long as the length of malar space. Antennal scape 3× as long as its maximum width; F1 3.3× as long as its maximum width, 1.2× as long as the length of F2 and F3 combined; F2–F4 longer than wide; F5–F6 equally as long as wide; F7–F9 wider than long; F10 bullet-shaped (Fig. 4).



FIGURES 1–5. *Polistes (Polistella) celebensis* Selis, **sp. nov.** ♀. 1, Habitus in dorsal view. 2, Habitus in lateral view. 3, Head in frontal view. 4, Antenna in lateral view. 5, S2 in lateral view.

Pronotal carina sharply raised, produced into thin lamella, slightly sinuate backward on lateral sides, reaching ventral corner of pronotum, weakly depressed in the middle. Mesoscutum weakly convex, 1.1× as long as wide between tegulae. Scutellum flattened on disc, with anterior margin placed above level of mesoscutum. Disc of metanotum flat, anterior margin produced in a border slightly elevated from level of scutellum. Posterior face of propodeum widely and shallowly excavated medially, more or less smoothly passing into lateral faces.

T1 0.8× as long as its apical width, in lateral view perpendicularly elevated just behind reception of suspensory ligament, then weakly convex to the apex. S2 in lateral view regularly and strongly convex from base to apex (Fig. 5). Clypeus with deep punctures, denser in the basal half, becoming sparse and larger apicolaterally, each bearing sharply pointed golden bristle becoming longer apically; tomentum restricted to the dorsal half of clypeus. Mandible with scattered deep punctures. Frons covered with small flat-bottomed punctures; ocular sinus punctured like frons dorsally, impunctate ventrally. Gena with sparse, small and shallow punctures, ventral third with coarser punctures. Pronotum with very dense and coarse flat-bottomed punctures, interspaces reduced to sharp reticulation. Mesoscutum punctured like pronotum, but punctures very shallow and becoming obsolete posteriorly. Scutellum with oblique deep punctures. Metanotum smooth with very fine punctures. Mesepisternum with very dense rounded flat-bottomed punctures, interspaces equal to smaller than punctures diameter, becoming sparser anteroventrally. Dorsal plate of metaepisternum with indistinct punctures; ventral plate with moderately dense flat-bottomed punctures. Propodeum transversely striate, striae stronger on transition from posterior to lateral faces, some punctures between striae on anterior margins of lateral faces. Metasoma finely reticulate and dull, with extremely fine and indistinct sparse punctures; some distinct deeper punctures on apical sterna. Mainly covered in dense reddish-golden pubescence, silvery on propodeum and lateroventral sides of mesosoma; metasoma with extremely short and dense pubescence hiding whole surface; longer apically bent setae are present in between pubescence, denser on frons, metanotum and sterna.

Color. Black; following parts red: basal half of clypeus, triangular spots on apex of clypeus, interantennal space, spots laterally to antennal sockets, mandibles, ventral half of gena, short line between posterior ocellus and eye, pronotum, scutellum except posterior border, large oblique marking from anterior to posterior margin of mesepisternum, median longitudinal line on mesosternum, ventral plate of metaepisternum, almost whole T2, thin border between black and yellow on T1 and T3–T5, T6, median part of S1, almost whole S2, transverse band in middle of S3, ventral face of all coxae, almost whole fore and mid legs, dorsal line on hind femora, ventral line on hind tibia; following parts yellow: ventral half of clypeus, ventral half of inner eye margin, ventral margin of malar space, rectangular patch on mandibles, thin line on dorsal half of outer eye margin, anterior and posterior margin of pronotum, anterior margin of scutellum and metanotum, lateral longitudinal lines on posterior face of propodeum, short line on mesepisternum near mesepimeron, short line on posterior margin of dorsal plate of metaepisternum, posteroventral corners of episterna, propodeal valves, laterally enlarged posterior band on T1, laterally sinuate posterior band on T2–T5, lateral lines on S1, laterally sinuate posterior band on S2–S4, variably shaped irregular markings on all coxae, basal spot on inner face of fore femur, apical spots on all femora and tibiae; tarsi and antennae ferruginous; wings brownish-fuscous with apical purplish spot on marginal cell.

Male. Unknown.

Distribution. Indonesia: Sulawesi.

Etymology. The specific name of this species refers to Celebes, the old name for Sulawesi.

Remarks. The black coloration with extensive red markings and some yellow lines seems to be common in Vespidae from Sulawesi, indicating the existence of a mimicry complex. Species showing this coloration include: *Lissepipona variabilis* Giordani Soika, 1994, *Lissodynerus celebensis* Selis, 2017, *Parancistrocerus cylindricus* (de Saussure, 1862), *Parancistrocerus cylindroides* Giordani Soika, 1994, *Stenodyneriellus insularis* (Smith, 1858), *Stenodyneriellus rubroclypeatus* Giordani Soika, 1994, *Stenodyneriellus rufoflavus* Selis, 2016, *Ropalidia pilosa* (Smith, 1858) and *Ropalidia plebeja* (de Saussure, 1862). More intensive studies will probably lead to the discovery of other species involved in this mimicry ring.

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