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SHORT NOTE

Notopeza, a new genus of Platypezidae (Diptera) from Chile

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Abstract. A new genus *Notopeza* gen. nov. is proposed for *Platypeza brunnescens* Collin, 1931. This species was originally described from a single female. The male is newly described and diagnostic features are illustrated. The new genus is diagnosed and its relationships are discussed.

Key words. Diptera, Platypezidae, Platypezinae, *Notopeza*, *Platypeza*, description, new genus, Chilean Region

Zoobank: http://zoobank.org/urn:lsid:zoobank.org:pub:C2ACADA1-65EC-40C8-A500-A5E2514A9F68

Introduction

It has long been recognised that *Platypeza brunnescens* Collin, 1931 is not closely related to other members of the subfamily Platypezinae recorded from South America. In preparing an account of this family for the forthcoming Manual of South American Diptera, it was necessary to address its generic position.

Platypeza brunnescens Collin, 1931 was described from a single uniformly brownish female collected by F. W. Edwards in southern Chile (Fig. 1). Collin (1931) figured the antenna and left hind tarsus, which were of the structure typical of most members of subfamily Platypezinae, and the apical part of the wing which had the unusual feature of vein M_{1+2} forking a little nearer to crossvein *dm-m* than to the wing margin. As he mentioned, this aspect of the venation and the absence of any contrasted body markings in the female resembled the European species then known as *Platypeza furcata* Fallén, 1826 but now placed in the genus *Bolopus* Enderlein, 1932 as *Bolopus furcatus*. At that time all members of the present subfamily Platypezinae were included in the genus *Platypeza* Meigen, 1803, sometimes known by the now invalid name *Clythia* Meigen, 1800. The female hind tarsus as figured by Collin (1931) has tarsomere 1 much shorter than tarsomeres 2–4 combined, tarsomere 2 shorter than 1, tarsomere 3 the longest, and tarsomeres 3 and 4 with membranous areas (termed "soles") on their anteroventral surface. This tarsal structure is common to all female Platypezinae except for *Protoclythia* Kessel, 1949 in which tarsomere 1 is the longest in both sexes.

The segregation of species groups within *Platypeza* into more natural genera began with recognition of *Protoclythia* by Kessel (1949) and was mainly elaborated by Kessel & Maggioncalda (1968), who described several new genera, mostly based on small differences in wing venation. More recently (Chandler 1994), this was considered to have been carried too far and several of their new genera were placed in synonymy with *Lindneromyia* Kessel, 1965 which is a large genus worldwide including most of the Platypezinae found in the tropics and southern hemisphere. The South American fauna of Platypezinae is poorly known, but all described species other than *P. brunnescens* evidently belong to *Lindneromyia* or to its close ally *Paraplatypeza* Kessel & Maggioncalda, 1968. A greater diversity in this subfamily is present in the Holarctic Region where ten genera are currently accepted; their phylogenetic relationships were discussed by Chandler (2001).

The discovery of the male of *P. brunnescens*, which is described for the first time here, has confirmed that it is not closely related to other South American Platypezinae. It resembles the Holarctic genera *Seri* Kessel & Kessel, 1966 and *Bolopus* Enderlein, 1932 in the wing venation, sharing with them the forking of vein M_{1+2} further from the wing margin than in other Platypezinae. These genera have this fork either equidistant or a little nearer to crossvein *dm-m* than to the wing margin, while it is always closer to the margin in other genera. The male terminalia of *P. brunnescens* are most similar to those of *Bolopus*, while it has setae on the male frons as in *Seri*. It differs from both in the more setose head, the male with long dense setae on the parafacials, the female with short but also dense parafacial setae.

Fig. 1. *Notopeza brunnescens* (Collin, 1931), holotype, female.

Seri was proposed by Kessel & Kessel (1966) for one North American species which had been described by Kessel (1961) as *Clythia dymka*, based on four females from California and Alaska, described as uniformly "smoke-colored bluish grey"; they had seen 15 more females, adding Yukon, British Columbia, Oregon and Idaho to its distribution, but no males. Cumming & Cumming (2011) extended the distribution to eastern North America with records from Maine and Ontario, including the first known male from Ontario, which they described and illustrated. Chandler (1974) concluded that the European species *Clythia obscuripennis* Oldenberg, 1916 (with a mainly dark brown male and brownish grey female) belonged to *Seri* when recording it as new to Britain and this assignment was confirmed by Chandler (2001). Only these two species are included in the genus; their male terminalia are similar, both with a slender elongate phallus but this is shorter relative to the hypandrium in *S. dymka*. *Platypeza furcata* was temporarily placed in their new genus *Plesioclythia* by Kessel & Maggioncalda (1968), who had not

Figs 2–3. *Notopeza brunnescens* (Collin, 1931), male head: 2 – dorsal view; 3 – lateral view.

then examined specimens, but Kessel & Buegler (1972) recognised that it was generically distinct on both adult and larval characters and established for it a new genus *Orthovena*. It was later realised that Enderlein (1932) had proposed the name *Bolopus* (in a key work to the German fauna), which thus had priority. It remains the only known species of this genus.

Chandler (2001) identified a clade including *Seri* and *Bolopus* together with *Polyporivora* Kessel & Maggioncalda, 1968. They share a more plesiomorphous larval structure compared to other Platypezinae, and the reduction or loss of the anteroventral spur at the apex of the mid tibia; they retain a well-developed posteroventral spur – other genera of Platypezinae have both spurs equally developed. *Polyporivora* otherwise resembles most other Platypezinae in the more distal position of the M_{1+2} fork and in having strongly developed sexual dimorphism in body coloration, with mainly black males and brightly marked females. These three genera also differ from other Platypezinae in their larval development being in polypore fungi, while larvae of other genera develop in agarics with a few records from puffballs. The larval stage is unknown in South American Platypezinae and, as noted by Chandler (2001: 61) and mentioned in Collin's (1931) description, both the anteroventral and posteroventral spurs on the mid tibia are well developed in *P. brunnescens*.

Material and methods

The holotype female of *Platypeza brunnescens* (in BMNH) and additional dry material of both sexes (in CNC) were studied. Male terminalia were macerated in lactic acid and mounted in DMHF (dimethyl hydantoin formaldehyde), except for the specimen of which the terminalia were photographed, of which the terminalia were cleared in KOH and slide mounted in euparal. These specimens are deposited in the following collections:

BMNH The Natural History Museum, London, U.K;
CNC Canadian National Collections, Ottawa, Canada.

Taxonomy

Subfamily Platypezinae Fallén

Notopeza gen. nov.

(Figs 1–7)

Type species. *Platypeza brunnescens* Collin, 1931: 50, here designated.

Diagnosis. Resembling *Seri* Kessel & Kessel, 1966 and *Bolopus* Enderlein, 1932 in both sexes being dark coloured without distinctive markings and in the forking of vein M_{1+2} at least as far from the wing margin as from crossvein *dm-m*; differing from both in presence of an anteroventral as well as a posteroventral spur at apex of mid tibia. Male differs from both in its strongly setose head, with a group of long upcurved setae on upper part of frons and long dense setae extending from gena onto broad parafacial reaching close to level of antennae [*Seri* has a group of short setae on upper part of frons, absent in *Bolopus*, but in both genera setae do not extend onto the parafacial from the gena]; antenna with long setae on pedicel extending beyond tip of postpedicel (= first flagellomere) [as in *Bolopus*; setae on pedicel are shorter than postpedicel in *Seri*], but with a terminal arista [as in most Platypezidae; set near to dorsal margin of postpedicel in the male of *Bolopus*]. Male terminalia: hypandrium with thick curved blunt-ended apical process (gonopod, pregonite or hypandrial lobe) on each side [similar to *Seri*, this process more tapered apically in *Bolopus*; *Platypeza*, which also has a strongly setose male head, lacks the extension of the hypandrium into gonopods but has a strongly developed phallapodeme extending beyond the sides of the hypandrium]; epandrium large with surstylus fused to it basally [articulating in *Bolopus* and *Seri*], tapered to a blunt point in lateral view,

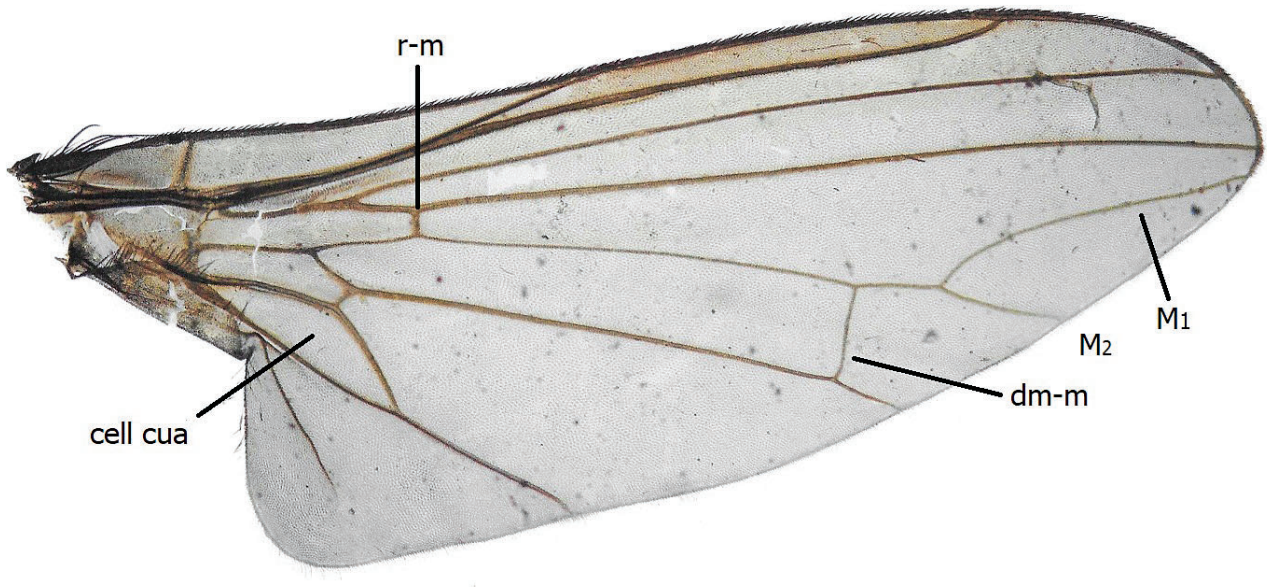


Fig. 4. *Notopeza brunnescens* (Collin, 1931), male wing.

with medially broadened base in posterior view; phallus short and blunt apically with a warty surface on the apical part [closer to *Bolopus* in that respect; *Seri* has a long cylindrical, apically pointed, phallus as in most Platypezinae]; phallapodeme also short, articulating with phallus; short sclerotised ejaculatory duct enclosed within segment 8 [as in *Seri*, *Bolopus* and *Polyporivora*].

Etymology. From Greek *notos* = southern and the terminal part of the generic name *Platypeza*, emphasising the southern distribution and its occurrence in forests of *Nothofagus* (Southern Beech; *nothos* = false, but meaning of *notos* may also have been intended in the naming of that genus). Gender is feminine.

Notopeza brunnescens (Collin, 1931) comb. nov.

(Figs 1–7)

Platypeza brunnescens Collin, 1931: 50.

Type material examined. Holotype: ♀, **CHILE: Llanquihue:** Puerto Varas, 16.xii.1926, leg. F. & M. Edwards, *Platypeza brunnescens* ♀ Type, BM 1927-63 (BMNH, glued to mount attached to pin).

Other material examined (all CNC). **CHILE: Osorno:** 1 ♂, Rio Gol-Gol, 1090 m, 17.iii.1955, leg. L. E. Peña; 1 ♂, Rio Gol-Gol, 300 m, 1.–19.iii.1955, leg. L. E. Peña; 1 ♂, 1 ♀, Antillanca, 400 m, 18.iii.1955, leg. L. E. Peña; 20 ♀♀, Puyehue National Park, 250 m, Ca. Antiara, *Nothofagus* forest, ii.1988, leg. L. Masner, Chile Expedition. **Valdivia:** 1 ♂, 500 m, 30 km W of La Union, Las Trancas, *Nothofagus*, 7.ii.1988, leg. L. Masner, Chile Expedition. **Aysén:** 1 ♀, Rio Cisnes, 1.–15.ii.1961, leg. L. E. Peña. **Cautin:** 1 ♀, Los Paraguas, 1400 m, 21.iii.1955, leg. L. E. Peña.

Redescription. The male has not previously been associated with this species and is described for the first time here.

Male. Body length 4.3–4.5 mm, wing length 3.7–4.0 mm.

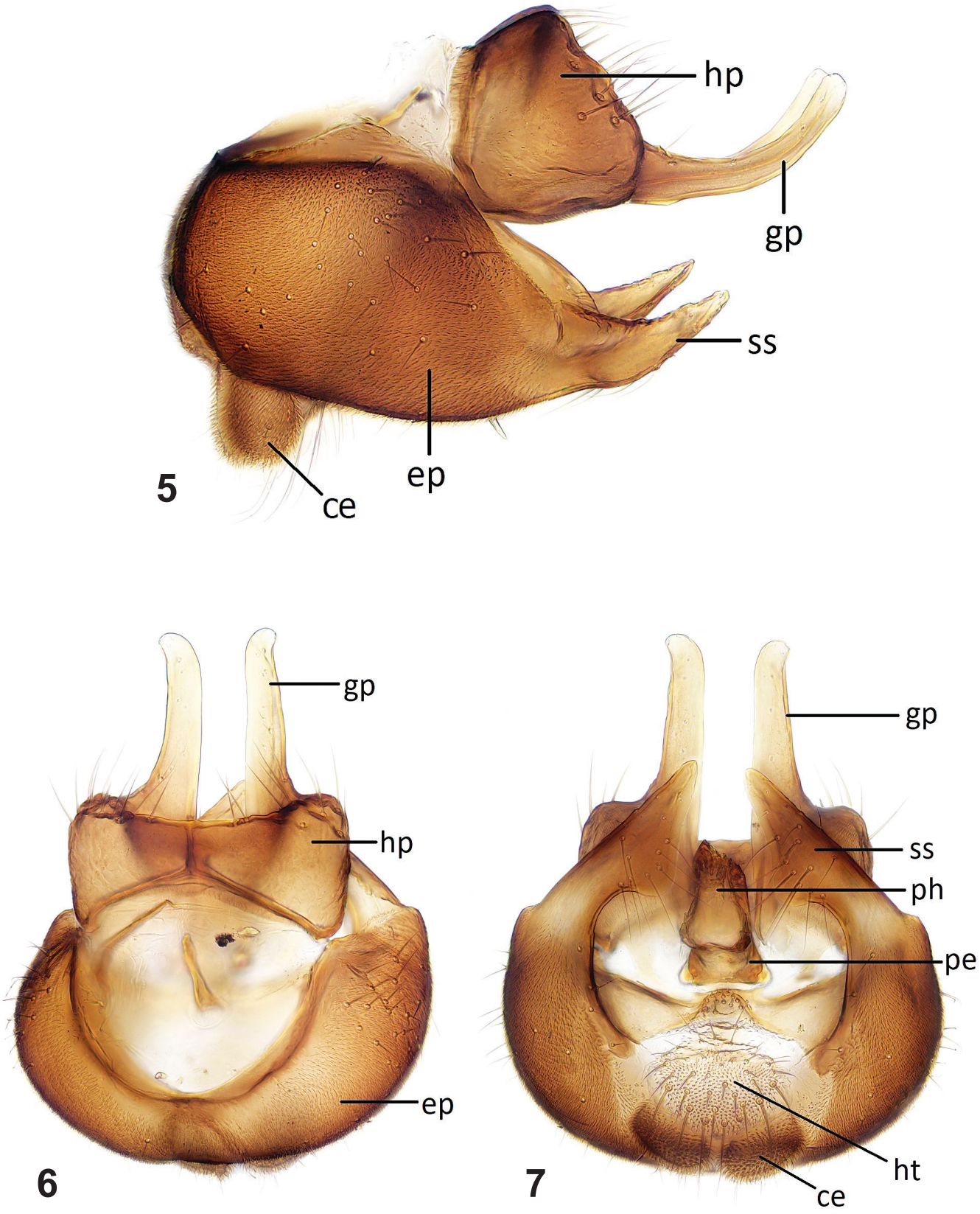
Head (Figs 2–3) broad, black with large red holoptic eyes in contact on dorsal surface of head, diverging at apex of frons, with larger facets on upper part, and a clear demarcation with smaller facets on the lower part; ocellar tubercle raised above dorsal surface of head and bearing 5–6 pairs of long ocellars; a single row of long postoculars close to hind margin of eyes; occiput with dense setae, continuous with dense long setae on gena and parafacials, ascending to level of antennae, the setae covering the broad parafacials converging in front to conceal the bare lighter grey face; frons bearing a group of about 12 long upcurved setae on upper part at divergence of eyes, lower part of frons above antennae bare; antenna brown, short, erect, with long setae both above and below pedicel, which extend beyond tip of rounded postpedicel; arista black, about twice as long as antenna; proboscis and palpus brown, with short setae.

Thorax. Mesonotum and scutellum deep black, pleura lighter, more greyish brown. Chaetotaxy all dark: uniserial dorsocentrals becoming longer behind, in a row outcurved to long prescutellar dorsocentral which is situated near to basal corner of scutellum; a long presutural intraalar above and in front of notopleural area; 4–5 long outcurved notopleurals; dense setae in postsutural intraalar area including a supraalar seta; 2 postalars, that nearest to the scutellum long and strong; 2 pairs of strong scutellars with 2–3 pairs of shorter setae between and external to them; propleuron with short setae, pleura otherwise bare.

Wing (Fig. 4) brownish, with cell *sc* a little darker; crossvein *r-m* level with apical third of cell *c*; M_{1+2} forking about equidistant between crossvein *dm-m* and wing margin or nearer to dm-m (as in Fig. 4), with long anterior branch M_1 reaching wing margin and short posterior branch M_2 reaching or narrowly stopping short of wing margin; crossvein *dm-m* less than its length from wing margin on vein M_4; cell *cua* about as long as vein *CuA+CuP* beyond. Haltere brown.

Legs short, uniformly brownish, with short dark setae; mid tibia with both anteroventral and posteroventral apical spurs strong, about half length of mid first tarsomere; hind tarsus with tarsomeres 1 and 3 of similar length, other tarsomeres shorter.

Abdomen. Dark with dark setae; tergites deep black, sternites lighter greyish; tergite 6 bearing 3 pairs of strong erect yellow setae.



Figs 5–7. *Notopeza brunnescens* (Collin, 1931), male terminalia: 5 – lateral view; 6 – hypandrial view; 7 – epandrial view. Abbreviations: ce – cercus; ep – epandrium; gp – gonopod (hypandrial lobe); hp – hypandrium; ht – hypoproct; pe – phallapodeme; ph – phallus; ss – surstylus.

Terminalia (Figs 5–7) brown: hypandrium shorter than epandrium, extended apically to a thick curved blunt-ended apical process (gonopod or pregonite) on each side, this process mostly bare, with only a few short setae; epandrium large with surstylus fused to it basally; surstylus tapered to a blunt point in lateral view, arrow-head shaped in posterior view with medially broadened base, bearing a few long setae; phallus short and blunt apically; phallapodeme also short, articulating with phallus; short sclerotised ejaculatory duct present; hypoproct shallow with evenly distributed very short setae and scattered long setae; cerci broadly rounded and densely covered with short setae.

Female. Body length 3.0–4.8 mm, wing length 3.5–5.2 mm.

Head brown with red eyes widely separated on frons, which is about a third head width, broadening a little in front and bearing very short irregular dark setae over whole surface with some close to front edge a little longer and curved forwards; ocellar tubercle scarcely raised above surface of frons, with short setae; a row of relatively strong postoculars close to hind margin of each eye; occiput with short setae extending onto gena and parafacial; parafacial setae shorter than in male and occupying a narrower band close to eye margin with the bare greyish face more exposed than in male; antenna similar to male but with only short setae on pedicel, not reaching tip of postpedicel; arista almost as long as head. Proboscis and palpus brown.

Thorax light brown, with dark setae shorter and weaker than in male; uniserial dorsocentrals relatively short, prescutellar and preceding seta longer; 1 presutural intraalar above and in front of notopleural area; 3–5 (usually 4) notopleurals in vertical series, strong but short compared to male; setae in postsutural intraalar area short and fine; 1 supraalar; 2 postalars, that nearest to the scutellum stronger; 2–3 pairs of strong scutellars with some shorter setae between and external to them; propleuron with short setae, pleura otherwise bare.

Wing brownish grey, cell *sc* a little darker; venation as in male. Haltere clear pale yellow.

Legs brownish but anterior face of hind tarsus dull yellowish, hind tarsomeres 1–3 broader and paler; spurs on mid tibia as in male, or sometimes anteroventral spur is shorter; hind tarsus with tarsomeres 1 and 2 bearing a short seta in middle of anterior margin; hind tarsomere 1 longer than tarsomere 2 and nearly as long as tarsomere 3 dorsally, but 1 and 2 together shorter ventrally than tarsomere 3, tarsomeres 3 and 4 with membranous areas ("soles") on their anteroventral surface.

Abdomen brown, with sternites paler; bearing short setae, longer laterally on tergites; sternite 6 bears 2 pairs of erect setae medially; similar but shorter and weak erect setae on sternite 7; segments 7 and 8 short and contracted into segment 6; ovipositor short with rounded yellowish cercus bearing very short setae.

Discussion

The referral of this species to a distinct genus from other Platypezinae is considered justified as it does not fit within the diagnoses of hitherto established genera. It is evidently close to *Seri* and *Bolopus*, having some characters in common with each of these genera and could be regarded as basal to the Holarctic clade including *Seri*, *Bolopus* and *Polyporivora*, from which it is geographically isolated. It might be anticipated that it will like them be found to develop in a polypore fungus.

The South American fauna of Platypezidae is poorly known with only 13 named species currently treated as valid, all but one from the Neotropics. The only other species so far recorded in Chile are an unnamed species of *Microsania* Zetterstedt, 1837 and a species that may be assigned to *Paraplatypeza*, the latter species also seen from the part of Tierra del Fuego that is in Argentina. *Notopeza brunnescens* appears to be widespread within its limited range, with records from five Chilean provinces (Aysén, Cautin, Llanquihue, Osorno, Valdivia) but whether it has any close relatives in the Chilean Region must await further fieldwork.

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