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**The female of the southern African bee *Plesianthidium* (*Spinanthidiellum*) *haematurum* (COCKERELL, 1932) (Hymenoptera, Megachilidae), with an updated key and additional records of the genus**

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**A b s t r a c t :** The female of the bee *Plesianthidium* (*Spinanthidiellum*) *haematurum* (COCKERELL, 1932) is here described and illustrated for the first time. An updated key for the identification of females of the southern African endemic genus is presented and additional records of *Plesianthidium* species are provided.

**Key words :** *Plesianthidium*, *Spinanthidiellum*, taxonomy, bees, southern Africa.

**Introduction**

The bee genus *Plesianthidium* CAMERON, 1905 is largely endemic to the winter rainfall region of western South Africa and southern Namibia and comprises a total of twelve described species in four subgenera (MICHENER 2007, EARDLEY & GRISWOLD 2015): the two monotypic subgenera *P. (Carinanthidium)* and *P. (Plesianthidium)*, *P. (Spinanthidiellum)* (three species) and *P. (Spinanthidium)* (seven species). As a genus, *Plesianthidium* is characterised by straight subantennal sutures in combination with a distinctly open and shiny scutum-scutellar suture. In females the integument of head and mesosoma is completely black, mandibles spatulate with three to five teeth, and cylindrical hind basitarsi. Males are characterised by mandibles with three teeth and a posteromedially extended T6 (MICHENER 2007, EARDLEY & GRISWOLD 2015).

Taxonomically, *Plesianthidium* species are well characterised and identifiable after the recent revision of the genus by EARDLEY & GRISWOLD (2015). Only the female of *P. (Sl.) haematurum* (COCKERELL, 1932) remained unknown but was discovered a few years ago. Thus, in this publication the hitherto unknown female of *P. haematurum* is described and illustrated. In addition, an updated key to *Plesianthidium* females and new records of further species are provided to facilitate further studies on the largely unknown biology of these locally common and conspicuous bees.

**Material and Methods**

Terminology used in the descriptions follows those of MICHENER (2007). T is used as abbreviation of metasomal tergum and S for a metasomal sternum. Body length is

measured from the vertex to the apex of the metasoma. Puncture density is expressed as the relationship between puncture diameter (d) and the space between them (i), such as  $i = 1.5d$  or  $i < d$ .

To distinguish between members of the subgenera *Spinanthidiellum* and *Spinanthidium*, the subgeneric abbreviation (*Sl.*) is used for the former and (*S.*) for the latter.

Images were taken with a digital microscope (Keyence VHX-5000) using the VH-Z20R/Z20T (20x to 200x) zoom lens and the OP-42305 super diffused illumination adapter. Images were stacked for extended depth-of-field and processed using Adobe Photoshop Elements 2021 (Adobe Systems Software Ireland Limited, Republic of Ireland) and then assembled into the figure plates.

All specimens were collected by the first author and are in the research collection of M. Kuhlmann, Zoological Museum of Kiel University, Kiel, Germany (RCMK) unless specified otherwise.

Permits for fieldwork and wild bee collecting in South Africa were granted by Cape Nature for Western Cape Province (permit numbers 202/1999, 250/2000, 368/2001, AAA004-00212-0035, AAA004-00446-0035, AAA004-01055-0035, 0056-AAA008-00076, CN44-87-21440) and by Northern Cape Department of Environment and Nature Conservation for Northern Cape Province (025/2002, 056/2003, 0055/04, 0332/05, 0648/06, 0317/07, FAUNA 074/2008, FAUNA 1299/2008, FAUNA 082/2010, FAUNA 557/2011, FAUNA 638/2012, FAUNA 155/2013, FAUNA 1213/2014, FAUNA 0529/2016, FAUNA 0345/2017, FAUNA 0461/2022).

### **The female of *Plesianthidium* (*Spinanthidiellum*) *haematurum***

A male and female of *P. haematurum* were found together near Steinkopf, so that there is no doubt that the sexes belong together, also due to their morphological similarity.

### ***Plesianthidium* (*Spinanthidiellum*) *haematurum* (COCKERELL, 1932) (Figs 1-6)**

*Dianthidium haematurum* COCKERELL, 1932: 524-525. Holotype ♂♂ (Calvinia, South Africa) (Natural History Museum London, UK).

**Additional material examined (6 specimens):**

South Africa: 1♀, 1♂, 7 km NE Steinkopf, road side N7, 29°12'40''S 17°47'11''E, 970 m, 12.ix.2017; 1♂, Keiski Mts., 3 km E Farm M'Vera, shale, 31°45'29''S 19°54'13''E, 1190 m, 28.viii.2023; 2♂♂, Farm Kanolfontein, 20 km W Sutherland, road side, 32°24'43''S 20°27'28''E, 1385 m, 17.ix.2017; 1♂, idem, 15.ix.2018.

The hitherto unknown female of *P. haematurum* is here described for the first time.

**D i a g n o s i s**: Members of the subgenus *P.* (*Spinanthidiellum*) are characterised by the carinate preoccipital ridge. Females of *P.* (*Spinanthidiellum*) also present a preapically depressed clypeus that is apically extended into a truncate flange (EARDLEY & GRISWOLD 2015). The female of *P. haematurum* can be distinguished from the two other species of the subgenus, *P.* (*Sl.*) *volkmanni* (FRIESE, 1909) and *P.* (*Sl.*) *rufocaudatum* (FRIESE, 1909), by the distinctly orange T5-T6 (Fig. 6) and S6 (black in the other species) and an almost impunctate depressed and translucent apical margin of



**Figs 1-6:** *Plesianthidium* (*Spinanthidiellum*) *haematurum* (COCKERELL), ♀; (1) lateral view, (2) dorsal view, (3) head; (4) clypeus and mandibles, (5) scutum, (6) metasomal terga T4-T6.

T5 (in *P. rufocaudatum* and *P. volkmanni* apical margin of T5 ± densely punctate). In addition, in *P. haematurum* the scutum is shiny between punctures (like in *P. rufocaudatum*) rather than shagreened like in *P. volkmanni*.

**Description:** Female: Lengths: Face 3.0 mm; scutum 2.3 mm; forewing 6.5 mm; body 8.0 mm (Habitus: Figs 1, 2). Integument black, except distal margins of T2-T4 slightly reddish, T5-T6 and S6 entirely orange (Fig. 6). Vestiture whitish (Fig. 1), except metasomal dorsum, vertex (Fig. 3), and on T5-T6 orange. Scopa orange. Preoccipital ridge carinate; distance between lateral ocellus and preoccipital ridge twice ocellar diameter; supraclypeus distinctly convex (Fig. 3); clypeus distinctly convex

above and subapically concave, distal region extended anteroventrally, clypeus apicomediaally almost impunctate, other than that densely punctate ( $i < d$ ) (Fig. 4); mandible with four teeth. Scutum densely punctate ( $i < d$ ), shiny between punctures (Fig. 5); tegula sparsely punctate medially ( $i > 2d$ ); propodeum glabrous medioventrally. T2-T3 with sparse distal fasciae; T2-3 moderately densely punctate ( $i = d$ ); T6 slightly expanded posterolaterally (Fig. 6).

**General distribution:** This species was previously only known from two localities in SW Namibia and Calvinia (Northern Cape Province) (EARDLEY & GRISWOLD 2015). The new records fall between these two points and extend the range further SE to the Roggeveld Mts. down south to the vicinity of Sutherland.

### New records of *Plesianthidium* species

Here new records of nine additional *Plesianthidium* species are listed in alphabetical order. No current records of two other species are known, *P. (Plesianthidium) fulvopilosum* CAMERON and *P. (S.) richtersveldense* EARDLEY & GRISWOLD.

#### *Plesianthidium (Carinanthidium) cariniventre* (FRIESE, 1904)

Additional material examined (4 specimens):

**South Africa:** 1♀, Gembokrivier-Pad, 0.5 km N Grootdrif, road side, 31°27'24''S 18°57'07''E, 200 m, 15.viii.2011; 1♀, Ouberg Pass, 27 km SE Vanrhynsdorp, Fynbos, 31°48'07''S 18°55'00''E, 380 m, 23.viii.2012; 1♂, Kamiesberg Mts., 5 km SE Leliefontein, road side, 30°20'09''S 18°06'24''E, 1400 m, 6.x.2014; 1♂, 12 km NW Nieuwoudtville, Farm Avontuur, Fynbos, 31°16'18''S 19°02'55''E, 770 m, 2.ix.2022, leg. H. Erhardt.

**General distribution:** The species is widespread in western and southwestern South Africa (EARDLEY & GRISWOLD 2015). The new records fall within the known range of *P. cariniventre*.

#### *Plesianthidium (Spinanthidiellum) rufocaudatum* (FRIESE, 1909)

Additional material examined (31 specimens):

**South Africa:** 1♀, 12 km NW Nieuwoudtville, Farm Avontuur, Fynbos, 31°16'18''S 19°02'55''E, 770 m, 18.viii.2012; 1♀, idem, 24.viii.2012; 2♂♂, idem, 21.ix.2022; 1♀, 1♂, idem, 18.ix.2016; 1♀, 1♂, 20 km S Nieuwoudtville, Farm Papkuilsfontein, Fynbos, 31°33'16''S 19°08'31''E, 680 m, 20.ix.2014; 1♀, 1♂, idem, 26.viii.2016; 6♂♂, Ouberg Pass, 27 km SE Vanrhynsdorp, Fynbos, 31°48'07''S 18°55'00''E, 380 m, 24.ix.2014; 1♂, 20 km N Nieuwoudtville, Vlei near Hellse Pad, Fynbos, 31°10'34''S 19°01'09''E, 810 m, 27.ix.2014; 1♀, 1♂, idem, 28.ix.2014; 1♂, Keiskie Mts., 5 km S Farm Nooiensrivier, new burned area, 31°45'41''S 19°50'17''E, 1270 m, 1.x.2014; 1♀, idem, 11.x.2014; 1♀, Plateau Hantam Mts., near antenna, 9 km N Calvinia, 31°22'29''S 19°47'03''E, 1570 m, 14.x.2014; 1♀, 2♂♂, 8 km WNW Leliefontein, Fynbos, road side, 30°15'58''S 18°03'17''E, 1190 m, 10.ix.2017; 1♀, idem, 14.ix.2017; 1♀, 1♂, Farm Kanolfontein, 20 km W Sutherland, road side, 32°24'43''S 20°27'28''E, 1385 m, 17.ix.2017; 1♂, 12 km NW Nieuwoudtville, Farm Avontuur, dolerite hill, 31°16'02''S 19°04'05''E, 830 m, 21.ix.2022; 1♂, idem, 7.ix.2023, leg. H. Erhardt; 1♂, 15 km NW Nieuwoudtville, Farm Zoetfontein E, Fynbos, 31°14'05''S 19°02'50''E, 775 m, 9.x.2022.

**General distribution:** The species is widespread in western and southwestern South Africa (EARDLEY & GRISWOLD 2015). The new records expand the known distribution area in the Roggeveld Mts. to the east.

***Plesianthidium (Spinanthidiellum) volkmanni* (FRIESE, 1909)**

Additional material examined (35 specimens):

South Africa: 1♀, 1♂, Gembokrivier-Pad, 0.5 km N Grootdrif, road side, 31°27'24''S 18°57'07''E, 200 m, 15.viii.2011; 1♀, Farm De Kom, 40 km SSE Sutherland, 32°44'34''S 20°43'06''E, 1300 m, 8.ix.2012; 1♂, 20 km S Nieuwoudtville, Farm Papkuilsfontein, Fynbos, 31°33'16''S 19°08'31''E, 680 m, 20.ix.2014; 1♂, Keiskie Mts., 5 km S Farm Nooiensrivier, new burned area, 31°45'41''S 19°50'17''E, 1270 m, 11.x.2014; 1♀, Gembokrivier-Pad, 4.5 km NE Grootdrif, road side, 31°25'54''S 18°55'16''E, 170 m, 4.ix.2016; 2♂♂, 5 km SE Lekkersing, road side, 29°03'28''S 17°07'16''E, 300 m, 8.ix.2016; 1♂, idem, 8.ix.2016, leg. E. Almeida, coll. E. Almeida; 4♂♂, idem, 10.ix.2016; 1♂, idem, 10.ix.2016, leg. E. Almeida, coll. E. Almeida; 1♀, Roggeveld Mts., 2 km SE Farm Allemansdam, burnt area, 31°49'32''S 19°59'55''E, 1290 m, 2.ix.2017; 1♂, 8 km WNW Leliefontein, Fynbos, road side, 30°15'58''S 18°03'17''E, 1190 m, 10.ix.2017; 1♀, 20 km NW Steinkopf, Renosterveld, Escarpment, 29°08'49''S 17°35'07''E, 960 m, 12.ix.2017; 7♀♀, 2♂♂, 7 km NE Steinkopf, road side N7, 29°12'40''S 17°47'11''E, 970 m, 12.ix.2017; 4♂♂, Farm Kanolfontein, 20 km W Sutherland, road side, 32°24'43''S 20°27'28''E, 1385 m, 17.ix.2017; 1♂, idem, 15.ix.2018; 1♂, Vanrhyns Pass, upper car park, 9 km W Nieuwoudtville, 31°22'29''S 19°01'05''E, 740 m, 19.ix.2022; 2♂♂, 12 km NW Nieuwoudtville, Farm Avontuur, dolerite hill, 31°16'02''S 19°04'05''E, 830 m, 21.ix.2022; 1♂, idem, 7.ix.2023, leg. H. Erhardt.

**General distribution:** The species is widespread in western and south-western South Africa (EARDLEY & GRISWOLD 2015). The new records expand the known distribution area in the Roggeveld Mts. to the east.

***Plesianthidium (Spinanthidium) bruneipes* (FRIESE, 1913)**

Additional material examined (5 specimens):

South Africa: 1♂, Kamiesberg Mts., 5 km SE Leliefontein, road side, 30°20'09''S 18°06'24''E, 1400 m, 7.ix.2016, leg. E. Almeida; 2♂♂, 8 km WNW Leliefontein, Fynbos, road side, 30°15'58''S 18°03'17''E, 1190 m, 10.ix.2017; 2♀, idem, 14.ix.2017.

**General distribution:** The species is restricted to Namaqualand (EARDLEY & GRISWOLD 2015) and the new records fall within its known range.

***Plesianthidium (Spinanthidium) calescens* (COCKERELL, 1921)**

Additional material examined (26 specimens):

South Africa: 1♀, 3♂♂, 20 km S Nieuwoudtville, Farm Papkuilsfontein, Fynbos, 31°33'16''S 19°08'31''E, 680 m, 20.ix.2014; 1♀, idem, 26.viii.2016; 1♀, idem, 11.viii.2011; 1♀, 2♂♂, Keiskie Mts., 5 km S Farm Nooiensrivier, new burned area, 31°45'41''S 19°50'17''E, 1270 m, 1.x.2014; 1♀, Kamiesberg Mts., 5 km SE Leliefontein, road side, 30°20'09''S 18°06'24''E, 1400 m, 4.x.2014; 1♂, idem, 6.x.2014; 1♂, idem, 11.ix.2016, leg. A. Almeida, coll. E. Almeida; 1♂, idem, 10.ix.2017; 1♂, Keiskie Mts., 3 km E Farm M'Vera, shale, 31°45'29''S 19°54'13''E, 1190 m, 30.viii.2016; 2♂♂, idem, 13.ix.2016; 1♀, 12 km NW Nieuwoudtville, Farm Avontuur, Fynbos, 31°16'18''S 19°02'55''E, 770 m, 25.viii.2017; 1♂, Roggeveld Mts., 2 km S Farm Perdekloof, rivier, dolerite, 31°47'35''S 19°58'16''E, 1220 m, 1.ix.2017; 1♀, Roggeveld Mts., 2 km SE Farm Allemansdam, burnt area, 31°49'32''S 19°59'55''E, 1290 m, 29.viii.2018; 1♂, 15 km NW Nieuwoudtville, Farm Zoetfontein E, Fynbos, 31°14'05''S 19°02'50''E, 775 m, 9.x.2022; 1♂, Farm Kanolfontein, 20 km W Sutherland, road side, 32°24'43''S 20°27'28''E, 1385 m, 7.ix.2012; 1♀, 4♂♂, Farm De Kom, 40 km SSE Sutherland, 32°44'34''S 20°43'06''E, 1300 m, 8.ix.2012.

**General distribution:** The species is widespread in western and southwestern South Africa (EARDLEY & GRISWOLD 2015) and the new records fall within its known range.

***Plesianthidium (Spinanthidium) calvini* (COCKERELL, 1932)**

Additional material examined (2 specimens):

South Africa: 1♀, Ouberg Pass, 27 km SE Vanrhynsdorp, Fynbos, 31°48'07''S 18°55'00''E, 380 m, 24.ix.2014; 1♀, Kamiesberg Mts., 26 km NNE Kamieskroon, road side, 30°03'45''S 18°00'25''E, 770 m, 3.x.2014.

**General distribution**: The species is largely restricted to Namaqualand (EARDLEY & GRISWOLD 2015) and the new records fall within its known range.

***Plesianthidium (Spinanthidium) namaquaense* EARDLEY & GRISWOLD, 2015**

Additional material examined (1 specimen):

South Africa: 1♂, Ouberg Pass, 27 km SE Vanrhynsdorp, Fynbos, 31°48'07''S 18°55'00''E, 380 m, 27.viii.2016.

**General distribution**: This species is almost exclusively known from the coastal sandveld of central Namaqualand (EARDLEY & GRISWOLD 2015) and the new record fall within its known range.

***Plesianthidium (Spinanthidium) neli* (BRAUNS, 1929)**

Additional material examined (34 specimens):

South Africa: 3♂♂, 20 km S Nieuwoudtville, Farm Papkuilsfontein, Fynbos, 31°33'16''S 19°08'31''E, 680 m, 20.ix.2014; 1♂, idem, 26.viii.2016; 1♀, 6♂♂, Ouberg Pass, 27 km SE Vanrhynsdorp, Fynbos, 31°48'07''S 18°55'00''E, 380 m, 24.ix.2014; 1♂, 12 km NW Nieuwoudtville, Farm Avontuur, Fynbos, 31°16'18''S 19°02'55''E, 770 m, 25.ix.2014; 1♂, idem, 3.ix.2016; 1♀, 1♂, idem, 6.ix.2016; 1♂, idem, 6.ix.2016, leg. E. Almeida, coll. E. Almeida; 2♂♂, idem, 9.ix.2018; 1♀, idem, 7.ix.2023, leg. H. Erhardt; 1♂, Kamiesberg Mts., 5 km SE Leliefontein, road side, 30°20'09''S 18°06'24''E, 1400 m, 5.x.2014; 2♂♂, idem, 11.ix.2016; 1♂, idem, 10.ix.2017; 1♀, 1♂, Plateau Hantam Mts., near antenna, 9 km N Calvinia, 31°22'29''S 19°47'03''E, 1570 m, 14.x.2014; 1♀, 2♂♂, 8 km WNW Leliefontein, Fynbos, road side, 30°15'58''S 18°03'17''E, 1190 m, 10.ix.2017; 3♂♂, idem, 14.ix.2017; 1♀, 7 km NE Steinkopf, road side N7, 29°12'40''S 17°47'11''E, 970 m, 12.ix.2017; 1♂, 20 km S Nieuwoudtville, Farm Papkuilsfontein, 150 m S parking waterfall, Fynbos, 31°33'06''S 19°07'31''E, 675 m, 1.x.2022; 1♀, 15 km NW Nieuwoudtville, Farm Zoetfontein E, Fynbos, 31°14'05''S 19°02'50''E, 775 m, 7.x.2022.

**General distribution**: The species appears to be endemic to the winter rainfall area in South Africa (EARDLEY & GRISWOLD 2015) and the new records fall within its known range.

***Plesianthidium (Spinanthidium) trachusiforme* (FRIESE, 1913)**

Additional material examined (23 specimens):

South Africa: 1♂, Kamiesberg Mts., 24 km NNE Kamieskroon, Rivier, 30°05'38''S 18°00'19''E, 780 m, 3.x.2014; 1♂, Kamiesberg Mts., 26 km NNE Kamieskroon, road side, 30°03'45''S 18°00'25''E, 770 m, 3.x.2014; 1♀, 1♂, Kamiesberg Mts., 5 km SE Leliefontein, road side, 30°20'09''S 18°06'24''E, 1400 m, 4.x.2014; 2♀♀, 2♂♂, idem, 5.x.2014; 1♀, 3♂♂, idem, 6.x.2014; 1♂, idem, 10.ix.2017; 1♀, 12 km NW Nieuwoudtville, Farm Avontuur, Fynbos, 31°16'18''S 19°02'55''E, 770 m, 3.ix.2016; 1♂, Keiski Mts., 3 km E Farm M'Vera, shale, 31°45'29''S 19°54'13''E, 1190 m, 13.ix.2016; 1♀, idem, 15.ix.2016; 1♂, idem, 27.ix.2022; 4♂♂, 20 km NW Steinkopf, Renosterveld, Escarpment, 29°08'49''S 17°35'07''E, 960 m, 12.ix.2017; 1♀, 15 km NW Nieuwoudtville, Farm Zoetfontein E, Fynbos, 31°14'05''S 19°02'50''E, 775 m, 7.x.2022; 1♂, idem, 9.x.2022.

**General distribution:** The species appears to be endemic to the winter rainfall area in South Africa (EARDLEY & GRISWOLD 2015) and the new records fall within its known range.

### Updated key to females of *Plesianthidium*

The key is based on EARDLEY & GRISWOLD (2015) with additions marked in **bold print**. Figure numbers in normal print refer to EARDLEY & GRISWOLD (2015).

- 1 Preoccipital ridge carinate (subgenus *Spinanthidiellum*).....2
- Preoccipital ridge rounded.....4
- 2 **T5-T6 entirely orange; apical margin of T5 almost impunctate (Fig. 6).....**  
     ..... *P. (Sl.) haematurum* (COCKERELL)
- **T5-T6 mostly black; apical margin of T5 ± densely punctate.....3**
- 3 Scutum shagreened; T6 distal margin blackish .....*P. (Sl.) volkmanni* (FRIESE)
- Scutum shiny; T6 distal margin orangish ..... *P. (Sl.) rufocaudatum* (FRIESE)
- 4 S6 with longitudinal carina (subgenus *Carinanthidium*) ..... *P. (C.) cariniventre* (FRIESE)
- S6 without longitudinal carina.....5
- 5 Maxillary palpus 3-segmented; vestiture mostly orange, partly pale yellow; length  
     ≥ 14 mm (subgenus *Plesianthidium*) .....*P. (P.) fulvopilosum* CAMERON
- Maxillary palpus 2-segmented; vestiture partly white; length ≤ 12 mm (subgenus  
     *Spinanthidium*) .....6
- 6 Terga entirely dark (Figs 16a, 19a, 22a).....7
- Terga with pale (red, orange or yellow) distal bands (Figs 24a, 27a, 30a, 32a) .....9
- 7 Vestiture completely black (Fig. 22a) ..... *P. (S.) richtersveldense* EARDLEY & GRISWOLD
- Vestiture mostly pallid, white, pale yellow or pale orange.....8
- 8 Clypeal margin weakly tuberculate, without anteriorly directed spines (Fig.19b); scutal  
     disk dull between punctures ..... *P. (S.) calescens* (COCKERELL)
- Clypeal margin with a pair of acute, anteriorly directed points, strongly concave  
     between points (Fig.16c); scutal disk shiny between punctures .....  
     ..... *P. (S.) trachusiforme* (FRIESE)
- 9 All tarsi orange; terga with distinct apical fasciae (best seen in lateral view) .....10
- Legs entirely or largely black (a little red distally on tibiae); terga without or with very  
     weak apical fasciae.....11
- 10 Femora and tibiae almost completely orange; mandible largely orange; T6 with well  
     developed, outwardly curved lateral shoulders (Fig. 24).....*P. (S.) bruneipes* (FRIESE)
- Femora and tibiae orange and blackish; mandible usually black sometimes partly  
     orange; T6 with small, about straight shoulders .....*P. (S.) calvini* (COCKERELL)
- 11 Clypeus impunctate medially; scutum densely punctate but with narrow shiny area  
     between punctures; T6 with very narrow impunctate margin (approximately 1 puncture  
     width) .....*P. (S.) neli* (BRAUNS)
- Clypeus sparsely punctate medially; scutum very densely punctate, punctures mostly  
     contiguous; T6 with narrow impunctate margin (2 or more puncture widths) .....  
     .....*P. (S.) namaquaense* EARDLEY & GRISWOLD

## Discussion

With the description of the female of *P. haematurum*, both sexes of all twelve *Plesianthidium* species are now known, photographically illustrated and can be identified by using the available keys (EARDLEY & GRISWOLD 2015). However, it should be kept in mind that the red colouration of the last terga of the female as a conspicuous identification feature is only based on the examination of a single specimen. Colour can be variable in bees, which is why morphological characters should also be considered in the identification process until the stability of the colour character is confirmed by the study of additional female specimens.

The addition of 116 new records for ten of the twelve *Plesianthidium* species (excluding *P. fulvipilosum* and *P. richtersveldense*) expand the known ranges of the three species of the subgenus *Spinanthidiellum* to the east and southeast respectively while the distribution areas of the other species remain unchanged.

Unfortunately, apart from some flower visitation records (EARDLEY & GRISWOLD 2015) very little is known about the life history of these bees (MICHENER 2007). This is surprising given that many species of *Plesianthidium* are relatively common and easy to spot due to their large size and behaviour. Their abundance also suggests that *Plesianthidium* might play an important role as pollinators. Further research is required to investigate nesting biology and flower specialisation of these bees in order to create a solid base for their conservation.

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## Zusammenfassung

Das Weibchen der Bienenart *Plesianthidium* (*Spinanthidiellum*) *haematurum* (COCKERELL, 1932) wird hier erstmals beschrieben und fotografisch dokumentiert. Ein aktualisierter Schlüssel zur Bestimmung der Weibchen der im südlichen Afrika endemischen Gattung sowie weitere Funde von *Plesianthidium*-Arten werden vorgelegt.

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