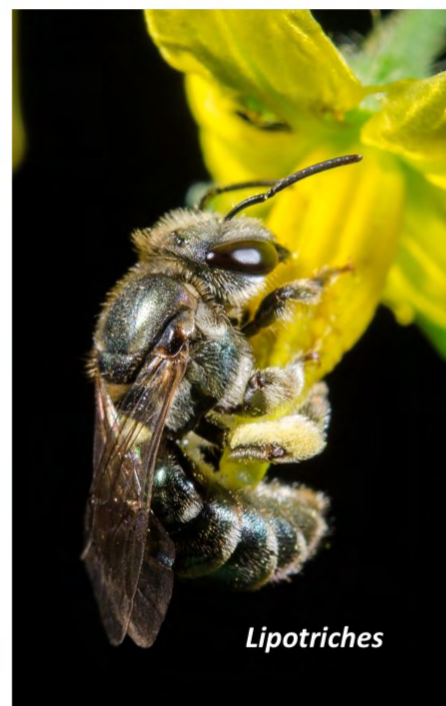


# Family Halictidae

The family Halictidae is the second largest of the Australian bee families, with approximately 383 described species. There are three subfamilies in Australia: the Halictinae, Nomiinae, and Nomioidinae. There are 10 genera, including one introduced. The majority of the Halictidae are ground nesters, and various levels of sociality are represented among the species. Some of the following couplets are based on Michener (2007).

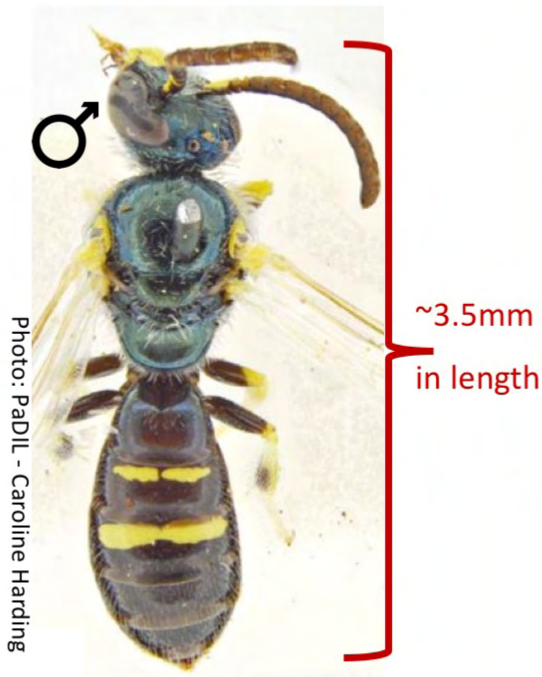


Photos by Tobias Smith



## Halictidae – Couplet 1

- ❖ With yellow/pale integumental markings on metasoma (small bees, metallic green/blue mesosoma) ... Subfamily **Nomioidinae**
- ❖ Without yellow/pale integumental markings on metasoma ... 2



The subfamily **Nomioidinae** is represented in Australian by a single species:

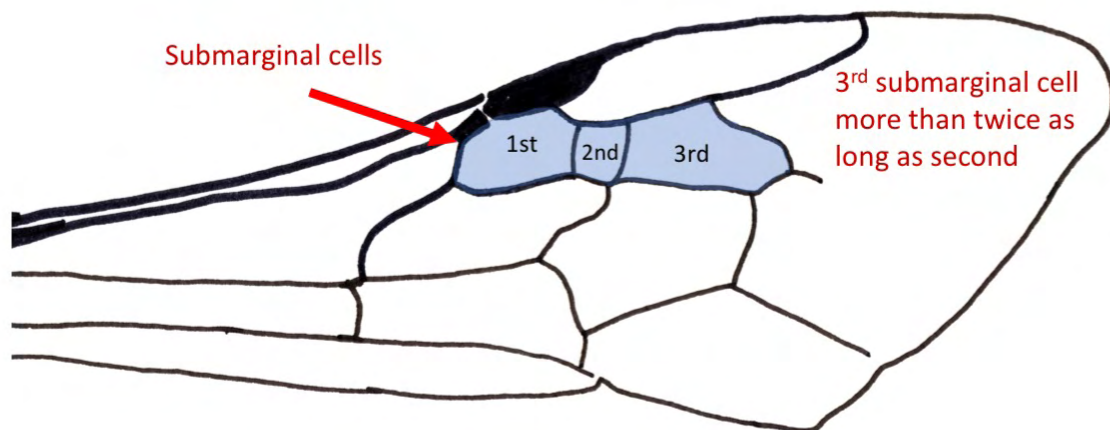
*Ceylalictus perditellus*

Widespread in tropical and subtropical parts of Australia



## Halictidae – Couplet 2 (1)

- ❖ Third submarginal cell at least three-fourths as long as first, and more than twice as long as second ... **3 (Subfamily Nomiinae)**
- ❖ Third submarginal cell usually less than three-fourths of first, and in every case less than twice as long as second ... **6 (Subfamily Halictinae)**



3<sup>rd</sup> submarginal cell less than twice as long as second, less than three-fourths as long as first

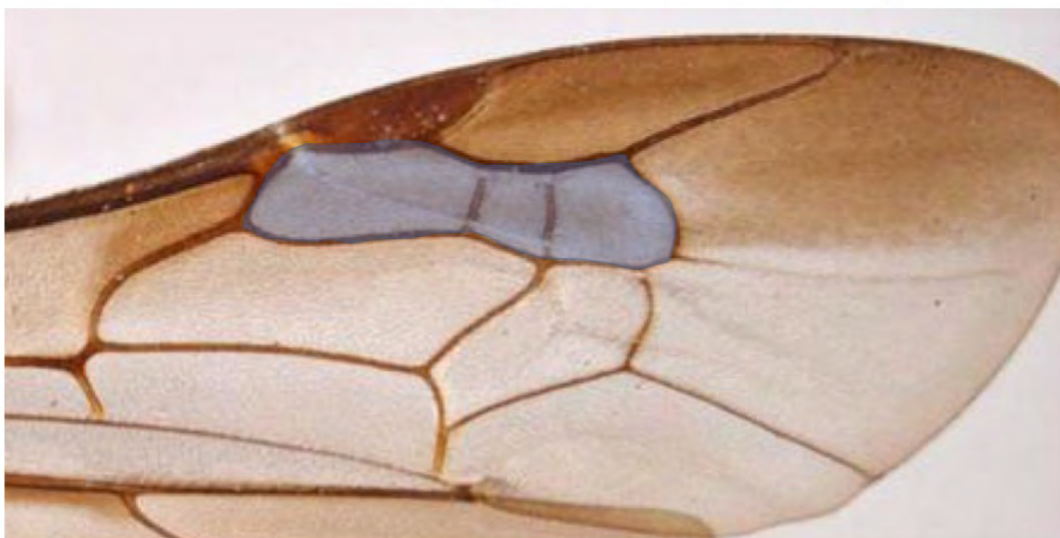
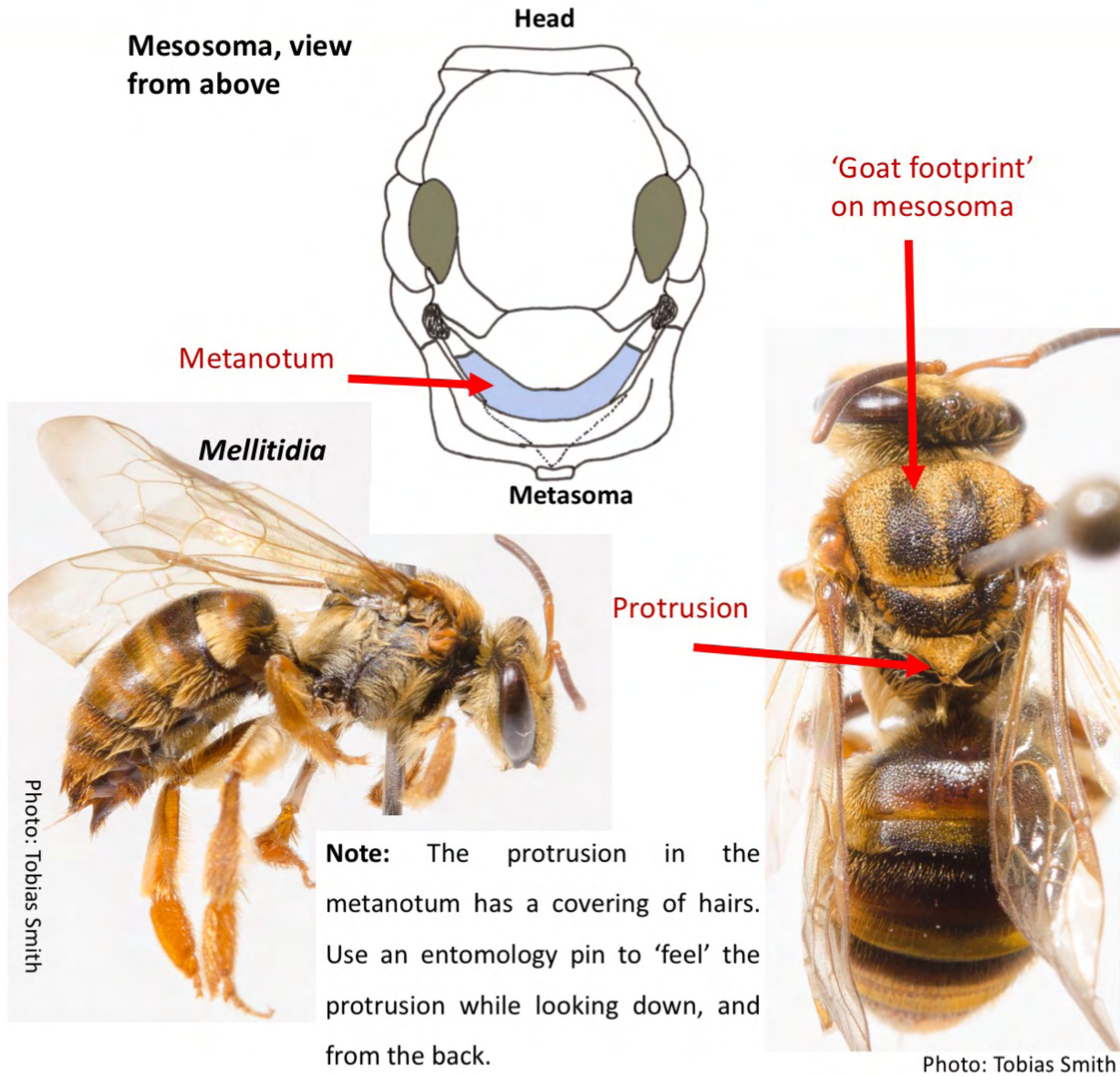


Photo: PaDIL – Ken Walker

## Halictidae – Couplet 3 (2)

- ❖ Metanotum with protrusion in the middle; black hairless patches resembling a goat footprint on mesosoma; patches of orange hair on head, mesosoma, and metasoma  
... *Mellitidia*
- ❖ Metanotum without protrusion in the middle; no black hairless patches resembling a goat footprint on mesosoma; orange hair patches not present on all body parts  
... 4



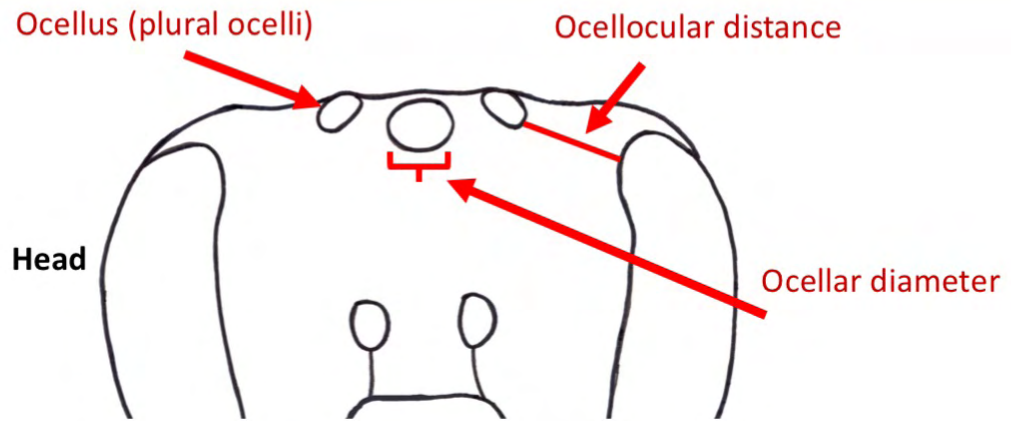
### *Mellitidia*

1 species, *M. tomentifera*

Only known from north QLD

## Halictidae – Couplet 4 (3)

- ❖ Ocelli enlarged, ocellocular distance equal to or less than ocellar diameter; no obvious bands (hairs or enamel-like cuticle) on metasoma ... *Reepenia*
- ❖ Ocelli not enlarged, ocellocular distance greater than ocellar diameter; obvious bands (hairs or enamel-like cuticle) on metasoma ... 5



All images below are *Reepenia*



Photo: PaDIL – Ken Walker

Enlarged ocelli



Photo: PaDIL - Sarah McCaffrey



Photo: PaDIL - Sarah McCaffrey



Photo: PaDIL - Sarah McCaffrey

### *Reepenia*

1 species, *R. bituberculata*  
Only known from north QLD

**Note:** Enlarged ocelli like these are associated with low-light flying, and are only seen in night-flying and low-light-flying bees.

## Halictidae – Couplet 5 (4)

- ❖ Metasoma terga with apical integumental bands of enamel-like yellow, blue, green, or white ... *Nomia*
- ❖ Metasoma terga without enamel-like apical integumental bands, rather often with bands of light coloured hairs ... *Lipotriches*



*Lipotriches*



<p><b><i>Nomia</i></b></p> <p>6 species</p> <p>Widespread</p>	<p><b><i>Lipotriches</i></b></p> <p>56 species</p> <p>Widespread</p>
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## Halictidae – Couplet 6 (2)

- ❖ Dense bands of apical (towards the back) hairs on each metasomal tergum in females ... *Seladonia*
- ❖ If present, bands of hair on metasomal terga arising basally (towards the front) in females ... 7

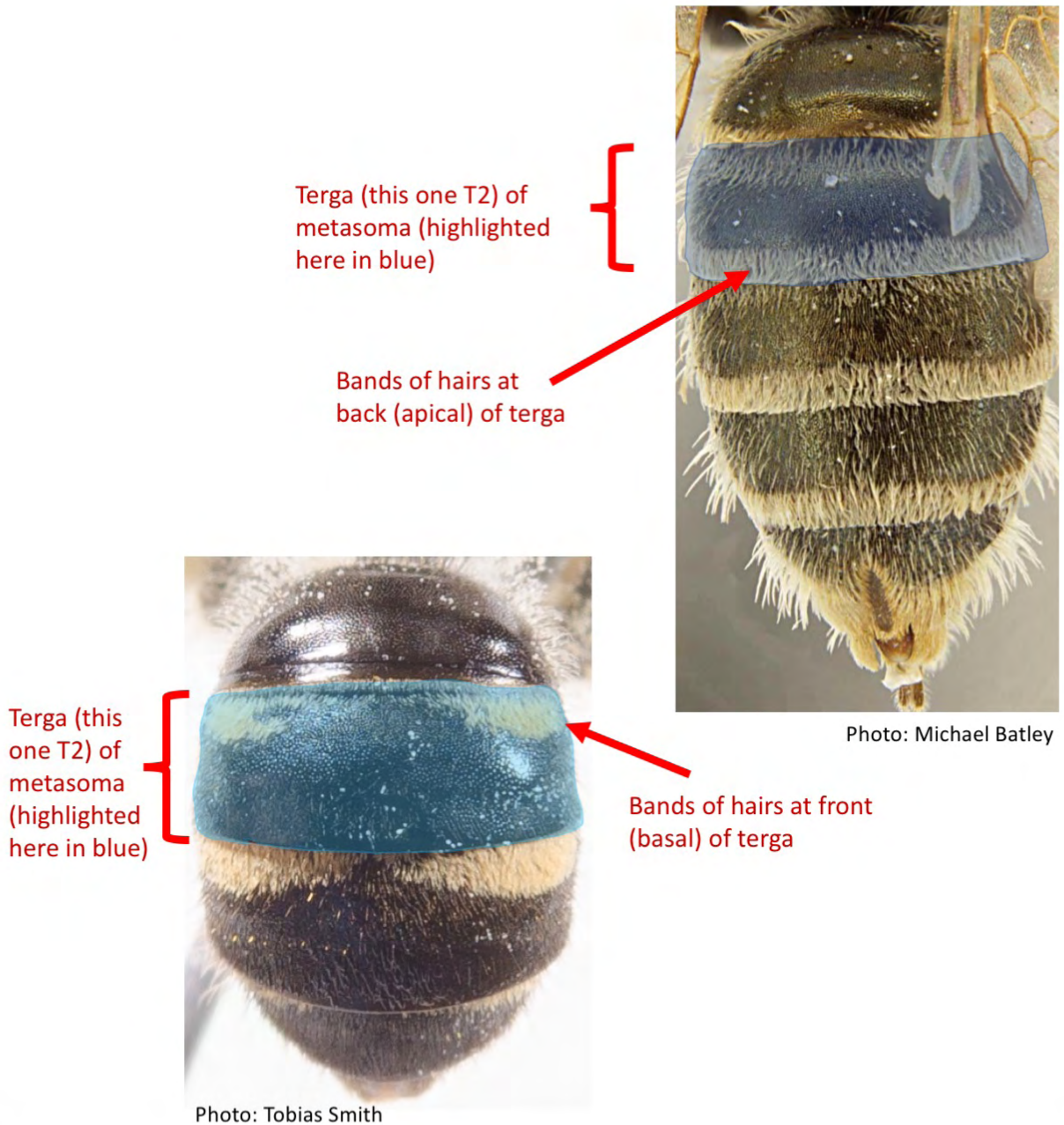



Photo: Batley et al 2016



***Seladonia***

**Introduced** (emerald furrow bee)

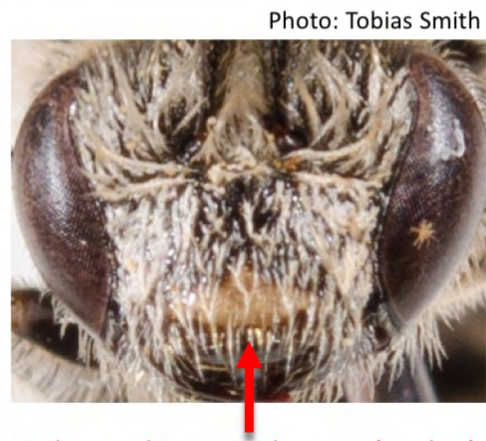
1 species, *S. hotoni* (previously called *Halictus smaragdulus*)

Only known from the Hunter Valley, NSW



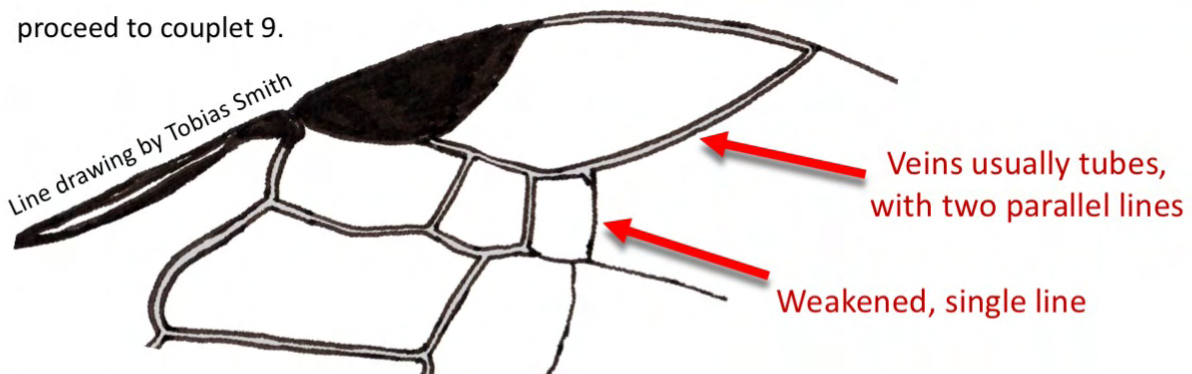
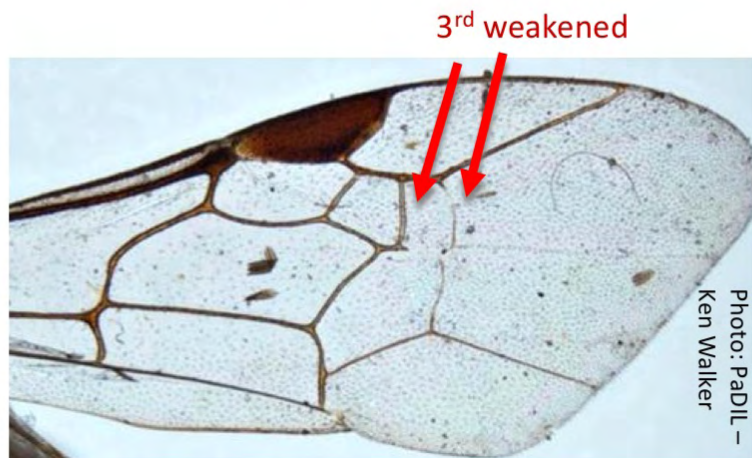
## Halictidae – Couplet 7 (6)

- ❖ Third submarginal crossvein of forewing of female as strong as preceding one; males always without pale markings on clypeus\* (QLD only) ... 8
- ❖ Third submarginal crossvein of forewing weaker than first and second in female; males sometimes with pale markings on clypeus\* ... 9



Pale marking on clypeus (males)

**\*Note:** This couplet, and therefore the following, does not work well for all males. If you have a male bee from QLD with the third submarginal crossvein as strong as preceding one and without clypeal markings, first try proceeding to couplet 8, and then if there is no clear match, return here & proceed to couplet 9.

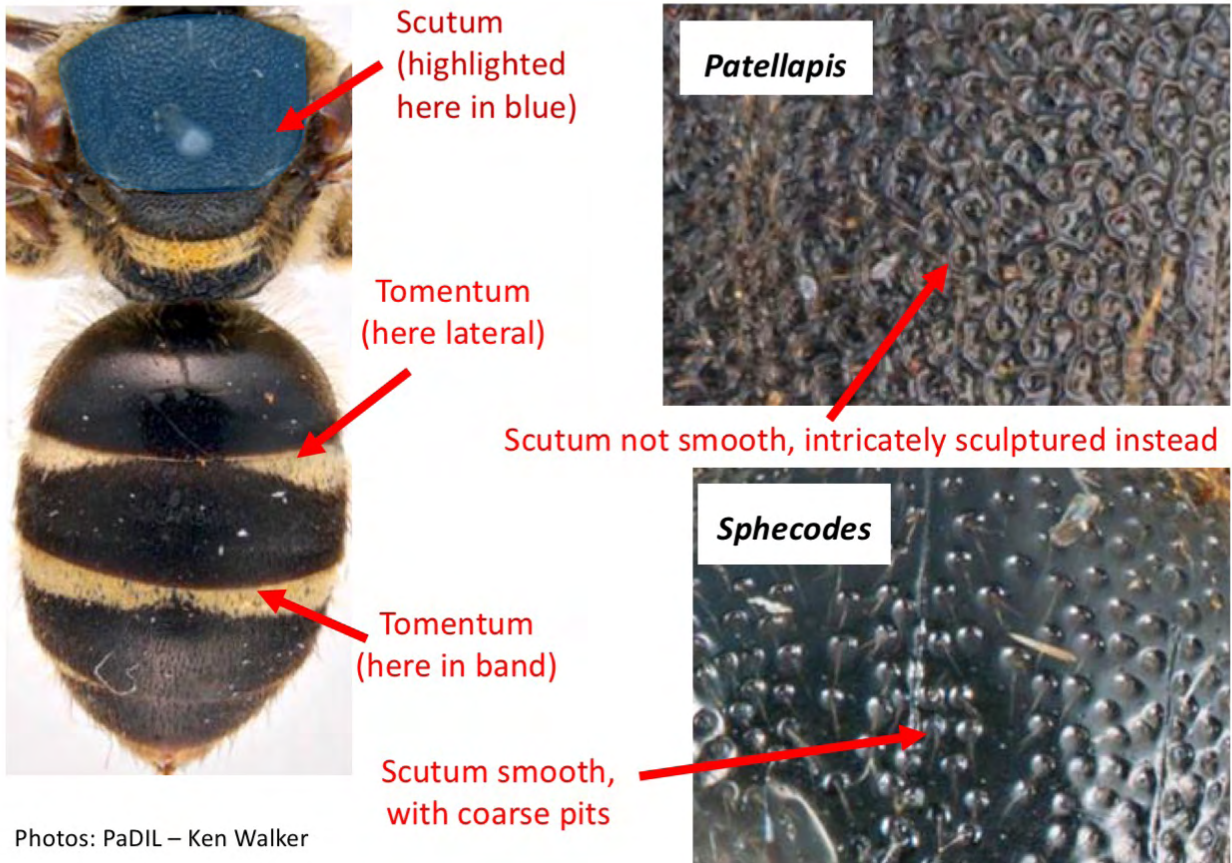


**Note:** Often the weakened third submarginal crossvein is very obvious, other times it is more subtle. In subtle cases, it is helpful to think of the veins of the wing as tubes that have two sides (two parallel lines next to one another). So veins are usually like tubes with two sides, but in the case of the weakened third submarginal crossvein, instead of a tube with two sides, it is more like a single line rather than two parallel to one another. Zoom in very close with good light to see this.



**Halictidae – Couplet 8 (7)**

... 1 of 2 pages of descriptions

- ❖ Bands or lateral areas of tomentum (dense, short pale hairs) on metasoma; scutum not smooth, and intricately sculptured; scopa present in female; males with bristles on S4 of metasoma ... **Patellapis**
- ❖ No bands or lateral areas of tomentum on metasoma; scutum smooth, not sculptured, but with deep, coarse pits; scopa absent in female; males without bristles on S4 of metasoma ... **Sphecodes**



Photos: PaDIL – Ken Walker

<p><b><i>Sphecodes (Sphecodes) profugus</i></b></p>	<p><b><i>Sphecodes (Sphecodes) manskii</i></b></p>	<p><b><i>Sphecodes</i></b></p>
 <p>Photo: PaDIL – Ken Walker</p>	 <p>Photos PaDIL - Claus Rasmussen &amp; Charles Michener</p>	<p>2 species Only known from QLD</p>

<p><b><i>Patellapis</i></b>, 2 species, only known from North QLD (+ 1 species on Christmas Is.)</p>		<p>Photo: Michael Batley</p>
<p>Walker, K. (1996) A new species of Australian '<i>Pachyhalictus</i>' Cockerell (Hymenoptera: Halictidae). <i>The Australian Entomologist</i>, 23 (4): 125-131.</p>		

Extra descriptions of males

**Note:** These descriptions are rather cumbersome. But unless you are working in QLD, it is highly unlikely you will have *Patellapis* or *Sphecodes*. Check distributions on ala.org.au

**Patellapis – Males**      **Note:** Male *Patellapis* have bristles on S4 of the metasoma.

*Patellapis (Pachyhalictus) albopilatus*      ♂      *Patellapis (Pachyhalictus) stirlingi*

Large bristles on S4 of metasoma

T1 of metasoma with pits, rather than smooth (see description in couplet 9)

Photos: PaDIL – Ken Walker

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***Sphecodes (Sphecodes) profugus* – Male**      Photos: PaDIL – Ken Walker

♂      T1 of metasoma with pits, rather than smooth

***Sphecodes (Sphecodes) manskii***

Rasmussen, C., & Michener, C. D. (2011) *Callosphecodes*, a little-known bee (Hymenoptera: Halictidae: Sphecodes). *ZooKeys*, (127): 61–68.

Open access, and includes images of the male

## Halictidae – Couplet 9 (7)

- ❖ Metasoma of female flattened, terga folded under at sides, with a distinct angle separating ventral parts from dorsal parts; scopa of female consisting of very long plumose hairs arising primarily on underside of metasoma, with some on legs; T1 of metasoma impunctate (smooth)
 

... ***Homalictus***

- ❖ Metasoma of female not strongly flattened, terga curving over sides and not angulate sides; scopa of female primarily on legs and some short branched hairs on the underside of the metasoma; T1 of metasoma punctate (with small pits)
 

... ***Lasioglossum***

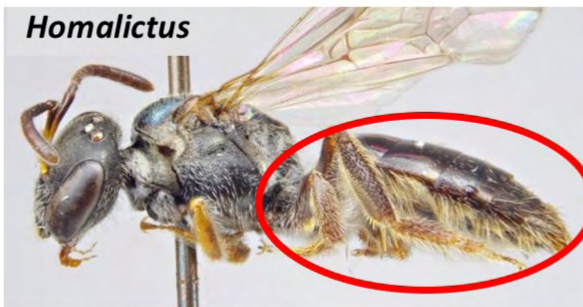


Photo: PaDIL - Sarah McCaffrey

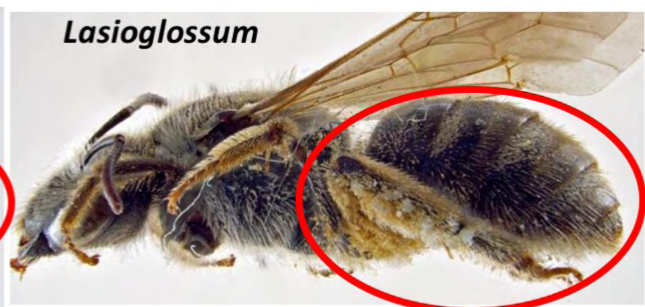


Photo: PaDIL – Ken Walker

***Homalictus*, T1 smooth**



Photo: PaDIL - Caroline Harding

***Lasioglossum*, T1 with pits**



Photo: Tobias Smith

***Homalictus* ~46 species, widespread**

Walker, K. 1986. Revision of the Australian species of the genus *Homalictus* Cockerell (Hymenoptera: Halictidae). *Memoirs of the Museum of Victoria*, 47 (2): 105–200.

***Lasioglossum* ~250 species, widespread**

Walker, K. 1995. Revision of the Australian native bee **subgenus** *Lasioglossum* (*Chilalictus*) (Hymenoptera: Halictidae). *Memoirs of the Museum of Victoria*, 55 (1): 1–423.

If *Lasioglossum*:



Photo: Ken Walker

Does it have an inner hind tibial spur that looks like this?

If yes, it is **subgenus** *Chilalictus*

And there is a key for *Chilalictus* (above). Other subgenera there are not, yet.