Thynnidae & Tiphiidae

- **Pronotum**: distinct (ie 'free'); usually **mid-dorsally long**, with posterior edge weakly concave (occasionally U-shaped, but not V-shaped as in Vespidae); posterolateral apices reaching tegula, and *usually* ventrally rounded (cf always acute in Vespidae). Note that the pronotum is similar in both Thynnidae & Pompilidae.
- **Inner margin of eye**: not strongly emarginate (cf most Vespidae)
- **Mesosternum**: (usually) with laminate expansions on each side of midline, covering bases of contiguous mesocoxae (cf Crabronidae, Sphecidae, Ampulicidae where mesocoxae not covered)
- Males: 7 exposed tergites; 11 flagellomeres (note: pedicel sometimes hidden in apex of scape)
- Females: 6 exposed tergites; 10 flagellomeres (note: pedicel sometimes hidden in apex of scape)

	Australian subfamilies	frons/antennal sockets	forewing venation	male S8	winged?		
Thynnidae	**Anthoboscinae**	**frons NOT produced** over antennal insertions; **socket** ('torulus') **entirely exposed from above**		S8 simple & rounded **(never with spines)**	both sexes winged	https://www.inaturalist.org/observations/152487167 https://www.inaturalist.org/observations/20712736	mostly black & scoliid-like, but lacking tripartite propodeum & pseudovenation (Naumann, 1991) sexual dimorphism slight
	Diamminae single species, *Diamma bicolor*		male forewing differs from all Thynninae in that **2m-cu is received proximal to 2r-m** (ie 2nd submarginal cell receives 2 veins)	S8 thickened & obtusely rounded apically	flightless females metallic blue/ green, and larger than males	https://inaturalist.ala.org.au/observations/190972236	https://inaturalist.ala.org.au/observations/141016855
	Thynninae	frons **produced** above antennal sockets	**trace of spur vein (lr vein) usually present** on the fore wings (may be absent)	S8 apex often bluntly produced or spine-like, sometime simple & rounded; not laterally compressed	**females wingless, complete sexual dimorphism** such that females are somewhat ant-like. Also, tergite 2 tends to be transversely multi-carinate in females		the only Australian Thynnidae with wingless females
	Myzininae	frons **strongly produced** above antennal sockets	**forewing WITHOUT spur vein** (lr vein) - both sexes	**entire S8 modified as a single, strong, acute, upcurved hook**	both sexes winged	eyes much wider ventrally than dorsally	
Tiphiidae	**Tiphiinae** single species (probably), *Tiphia intrudens*	frons not produced over antennal insertions	**rarely** with unsclerotised trace of spur vein	**entire S8 modified as a single, strong, acute, upcurved hook;** S6 much longer than S5 and reaching tip of pygidium (concealing S7 and most of hypopygial hook)	both sexes winged; forewing in female (and in some males) **apparently with just 2 submarginal** enclosed by tubular veins (vein rs reduced or absent posterobasally at least)	**tegula enlarged,** concealing humeral & median plates … **reaching at least transscutal articulation** (posterior edge scutum)	https://inaturalist.ala.org.au/observations/106370808

Drawing upon the following:
Brothers, D.J. 1993. Family Tiphiidae, pp. 177-186 in Hymenoptera of the World: An identification guide to families. (Eds. Goulet, H. & Huber, J.T.) Agriculture Canada, Publication 1894/E
Brown, 1985. The Australian Myzininae (Hymenoptera: Tiphiidae). *J. Aust. ent. Soc.* **24**: 135-141
Brown, 2005. A revision of *Tachyphron* Brown and description of two new genera within the *Ariphron* group (Hymenoptera: Tiphiidae). *Journal of Natural History*, **39**(2): 197-239
Naumann, I.D. 1991. Hymenoptera. Chapter 42 in *Insects of Australia* 2nd Edition, CSIRO. Vol 2: 916-1000

See also southernforestlife.net

version 3 (3/12/23)