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# Species confusion in the Australian inflorescence-living genus *Pseudanaphothrips* (Thysanoptera, Thripidae)

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## Abstract

An attempt is made to resolve the confused identity of species in the Australian endemic genus, *Pseudanaphothrips*, with an illustrated key provided to the eight species recognised here. One species, *P. querci*, was based on a single female from Taiwan and is here recorded from Australia for the first time, and *P. achaetus* is now found widely from New Zealand to Pacific islands and California. A new generic diagnosis is provided, emphasising the close relationship to *Frankliniella*, and *Isochaetothrips pallidus* Steele is considered a **new synonym** of *Pseudanaphothrips frankstoni* (Steele). Apart from the historical confusion due to type specimens being poorly slide-mounted, and descriptions that were not diagnostic, biological problems limit the reliability of taxonomic conclusions. Adults appear to disperse before reaching mature colouration, often landing on non-host plants, and males are rare in the available samples.

**Key words:** female colour variation, species key, type specimens

## Introduction

The genus *Pseudanaphothrips* is endemic to Australia, with eight species now recognised. These species have been found widely around the southern parts of the continent, but no specimens have been seen from central nor northern Australia. However, sampling for this genus remains inadequate. Most studies of phytophagous thrips in Australia that were targeted at particular plant taxa, have looked at crops (Mound & Tree 2020), grasses (Mound 2011; Palmer & Mound 2020), Casuarinaceae (Mound *et al*. 2022) or *Acacia* species (Crespi *et al*. 2004). Little is known of the host associations of *Pseudanaphothrips* species, and although the genus is considered an Australian endemic, two species have been found in other countries. *P. achaetus* has been widely established in New Zealand for at least 80 years, and has been found on Pacific islands as well as in southern California. *P. querci* was described on a single female from Taiwan with a subsequent record from Java and is here recorded from Australia for the first time.

The evolutionary relationships of this genus are particularly interesting. *Pseudanaphothrips* has been considered the sister genus to the remaining six genera placed in the *Frankliniella* genus-group (Wang *et al.* 2019a). The species share several character states with the species of *Frankliniella*, an essentially New World genus that comprises over 270 species particularly from the Neotropics (Wang *et al*. 2019b). *Pseudanaphothrips* species differ from those of *Frankliniella* in lacking laterally on abdominal tergites IV–VII a well-formed pair of ctenidia.

The purpose of the study presented here is to re-examine the status of the species placed in the genus, all of which are presumed to breed in inflorescences. Many of these species were based originally on only a few specimens and included no precise host-plant data. Moreover, these original specimens are all poorly slide-mounted, with important character states often not clear (Figs 1–4). It should be remembered that, of the 12 nominal species that have been referred to this genus, nine were described prior to 1950, at a time when generic relationships among Thripidae were poorly defined. Authors of that earlier era, including Steele (1940), commonly described new species without any comparisons to previously described species, the objective being to erect new nominal taxa rather than to understand diversity.

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## Problems in species diagnosis

Species of *Pseudanaphothrips* show remarkable structural uniformity, with few of them exhibiting any definitive structural autapomorphy. Collecting records suggest that adults of at least some of the species are highly dispersive, landing on various unrelated plants. This situation is discussed below, particularly with evidence of the host-specific species *P. casuarinae*, because it appears that adults can disperse before they reach mature colouration. Among Thripidae, colour differences are commonly considered to provide character states for distinguishing species. However, in species of *Pseudanaphothrips* colour variation among conspecific females due to levels of maturity seems to be common, and this provides difficulties for species recognition. Despite this, in some species the body is largely yellow, with the abdominal apex variably brown. In other species, mature females are brown to dark brown, although many individuals that have dispersed from their host plant are much paler. There is also variation in colour of antennal segments, not only between species but also within some species. Another character state that is difficult to interpret is fore wing colour, from pale to weakly shaded. In some species the metanotal striation can be specific, such as when it is almost reticulate (Figs 20, 22) or closely striate (Figs 23, 26), but the striations vary between different populations of *P. achaetus* (Figs 18, 19). There are similar problems in the form of the tergite VIII microtrichial comb (Figs 27–34). Examination of long series of females suggests that none of these character states can be relied on alone for definitive species discrimination.

## Acknowledgements and abbreviations

Christopher Grinter, Collection Manager at the California Academy of Sciences, kindly provided images of the *P. querci* holotype. The two slides of species described by Vevers Steele were sent on loan from the South Australian Museum by the Terrestrial Invertebrates Curator, Ben Parslow. A loan of 23 females and four males from the Natural History Museum London, including type slides of three species (*P. pallipennis*, *P. parvus*, *P. uniformis*), was arranged by the Hemiptera Curator Diana Rendón-Mera with subsequent help and information from the Curator of Small Orders, Dan Hall. A loan to Canberra of 160 slides of *Pseudanaphothrips* species from the Queensland Primary Industries Insect Collection was kindly arranged by Mark Schutze, Principal Entomologist. Alana McClelland of DAFF Biosecurity Adelaide authorised the loan of specimens from their Quarantine collection, and the record of *Pseudanaphothrips achaetus* from California was confirmed by Mark Hoddle (UC Riverside).

The following abbreviations have been used: ANIC – Australian National Insect Collection, Canberra; NHM – Natural History Museum, London; QDPC – Queensland Primary Industries Insect Collection.

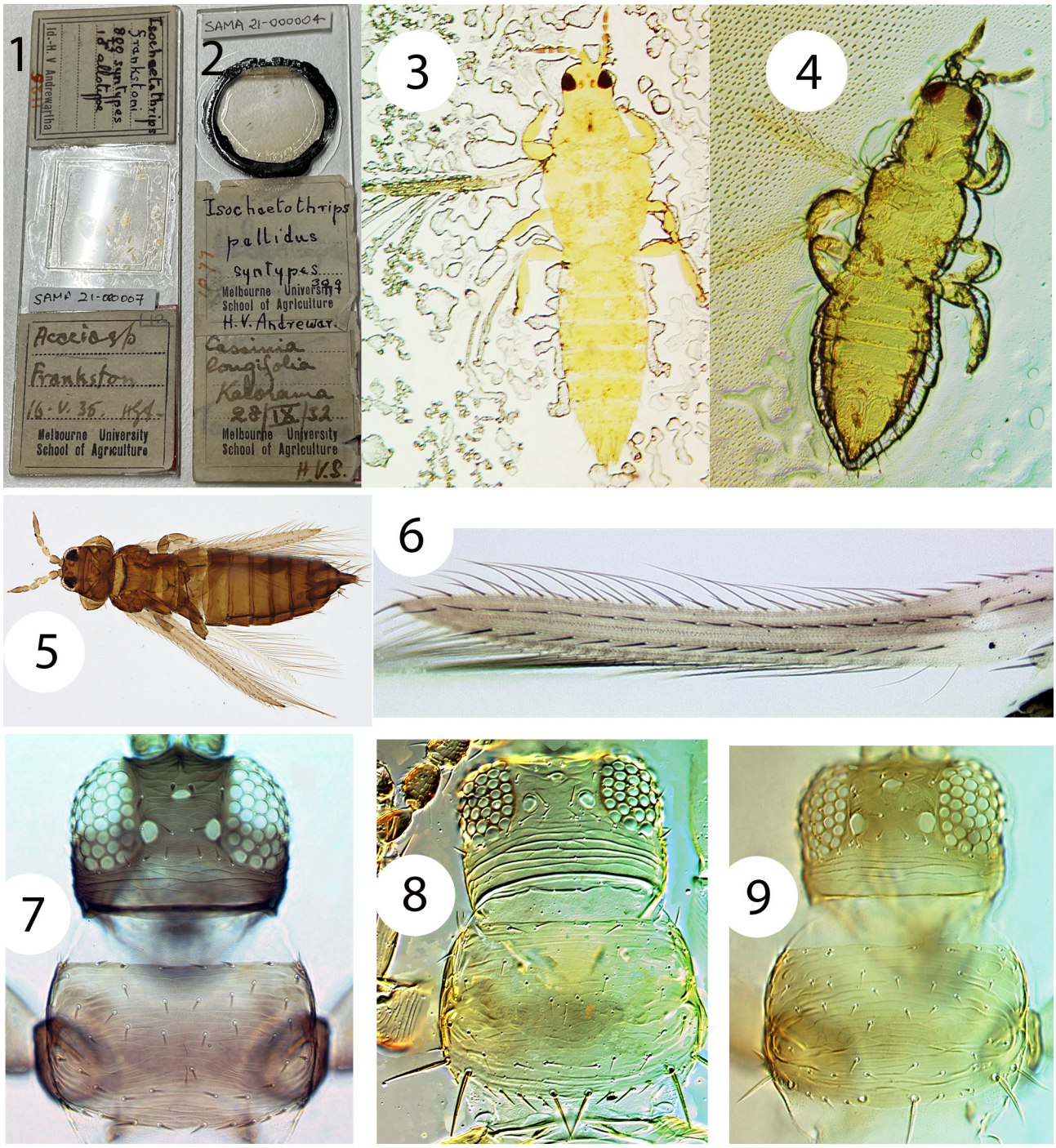
## *Pseudanaphothrips* Karny

*Pseudanaphothrips* Karny, 1921: 242. Type species *Pseudothrips achaetus* Bagnall, 1916, by subsequent designation of Karny, 1924: 16.

*Homochaetothrips* Sakimura, 1968: 59. Type species *Pseudothrips parvus* Bagnall, 1916, by original designation. Synonym in Mound & Palmer, 1981: 164.

The genus *Pseudanaphothrips* was first proposed, with no included species, in a key to Thysanoptera genera (Karny 1921). The genus was subsequently validated (Karny 1924) by the inclusion of the single species *Pseudothrips achaetus* Bagnall from Australia. It remained monobasic for many years, diagnosed by the absence of long setae on the pronotum (Fig. 7) and the presence of two complete rows of setae on the fore wing (Fig. 6). Sakimura (1968) erected *Homochaetothrips* to include a series of seven species each of which bore two pairs of moderately prominent pronotal posteroangular setae (Fig. 8); five of these species he transferred from *Isochaetothrips*, with one from *Pseudothrips* and the seventh as a new species. The outer pairs of pronotal posteroangular setae are commonly shorter than the inner pairs, and both pairs vary in length amongst the species assigned to *Homochaetothrips*. For example, the length of the outer pair varies from 25 to 60 microns between species. All seven species share with *P. achaetus* a range of structural character states as well as their Australian country of origin. *Homochaetothrips* was therefore placed into synonymy with *Pseudanaphothrips* by Mound and Palmer (1981), together with a full generic diagnosis. All eight species included here seem to be associated with flowers or inflorescences of various

plant species. Most importantly, Mound and Palmer recognized that females of all these species bear laterally on abdominal tergites VI–VII, patches of irregular microtrichia that are sometimes arranged into a pair of ill-formed ctenidia. On tergite VIII these ctenidia are more clearly defined and are situated anterolateral to the spiracles (Figs 27–34). As indicated above, these character states among *Pseudanaphothrips* species, together with the three pairs of ocellar setae and the chaetotaxy of the metanotum and fore wing, place this genus as a member of the *Frankliniella* genus-group.




**FIGURES 1–9**. *Pseudanaphothrips* species. **(1)** Steele (1940) *frankstoni* type slide **(2)** *pallidus* type slide; **(3)** *frankstoni* syntype; **(4)** *pallidus* syntype; **(5)** *querci* holotype; **(6)** *achaetus* fore wing. Head & pronotum 4–6: **(7)** *achaetus*; **(8)** *frankstoni*; **(9)** *parvus*.

*Generic diagnosis*: Antennae 8-segmented, III & IV with forked sense cone. Head wider than long, with three pairs of ocellar setae, ocellar setae pair III arising within ocellar triangle and usually between anterior margins of

hind ocelli, never longer than distance between two ocelli. Pronotum transverse, usually with two pairs of prominent posteroangular setae, but one species with these setae no longer than the rest of the seven posteromarginal setae; anterior margin usually without any setae longer that discals. Metanotum with median setal pair arising at anterior margin, paired campaniform sensilla usually present near posterior margin; sculpture lines usually long and parallel, varying to weakly reticulate in some species. Fore wing with both longitudinal veins bearing complete row of setae. Tergites VI–VII laterally with irregular row of microtrichia sometimes forming a weakly developed ctenidium; tergite VIII laterally with pair of ctenidia more clearly defined, anterolateral to spiracles; VIII posteromarginal comb usually well developed, with median microtrichia often forming a more closely spaced group. Male similar to, but smaller than, female, sternites III–VII each with oval to transverse pore plate.

### Key to species of *Pseudanaphothrips*

1. Pronotum with posteroangular setae scarcely longer than the other marginal and discal setae (Fig. 7); posteromarginal comb on tergite VIII with small median group of microtrichia and lateral thirds of margin with few microtrichia (Fig. 27) . . . *achaetus*
-. Pronotum with 2 pairs of posteroangular setae more prominent than other setae (Figs 5, 6); tergite VIII comb developed fully across posterior margin, microtrichia sometimes evenly spaced but sometimes with median microtrichia forming a discrete closely spaced group (Figs 25–34) . . . . . 2
2. Female abdominal tergite X long, at least 1.3 times as long as IX and at least 1.3 times as long as basal width (Fig. 28) . . . . 3
-. Female abdominal tergite X scarcely longer than IX and with length about equal to basal width (Figs 32, 33). . . . . 4
3. Body and antennal segment I largely yellow, fore wings pale; abdominal segment X about 2.0 times as long as tergite IX (Fig. 31). . . . . *aureolus*
-. Body and antennal segment I uniformly brown, fore wings brown; abdominal segment X about 1.8 times as long as tergite IX (Fig. 34) . . . . . *uniformis*
4. Metanotal median striae irregular posteromedially, almost reticulate in arrangement (Fig. 20) . . . . . 5
-. Metanotal median striae converging and close together posteromedially (Figs 18, 19) . . . . . 6
5. Ocellar setae III as long as width of antennal segment I; pronotal am setae clearly longer than longest discal seta . *araucariae*
-. Ocellar setae III shorter, no more than 0.6–0.8 as long as width of antennal segment I; pronotal am and pm setae all equally small . . . . . *casuarinae*
6. Body yellow, antennal segment II yellow to brownish yellow, not darker than III; tergite VIII marginal comb with microtrichia uniformly spaced or with a few medially slightly converging (Figs 30, 31) . . . . . *frankstoni*
-. Body light to dark brown, paler when teneral, antennal segment II brown and darker than III; tergite VIII marginal comb with median group of microtrichia closely spaced (Figs 32, 33) . . . . . 7
7. Antennal segments III–V largely yellow, sometimes also basal third of VI (Fig. 8) . . . . . *.parvus*
-. Antennal segment III yellow, but IV–V brown to dark brown (Fig. 9) . . . . . *querci*

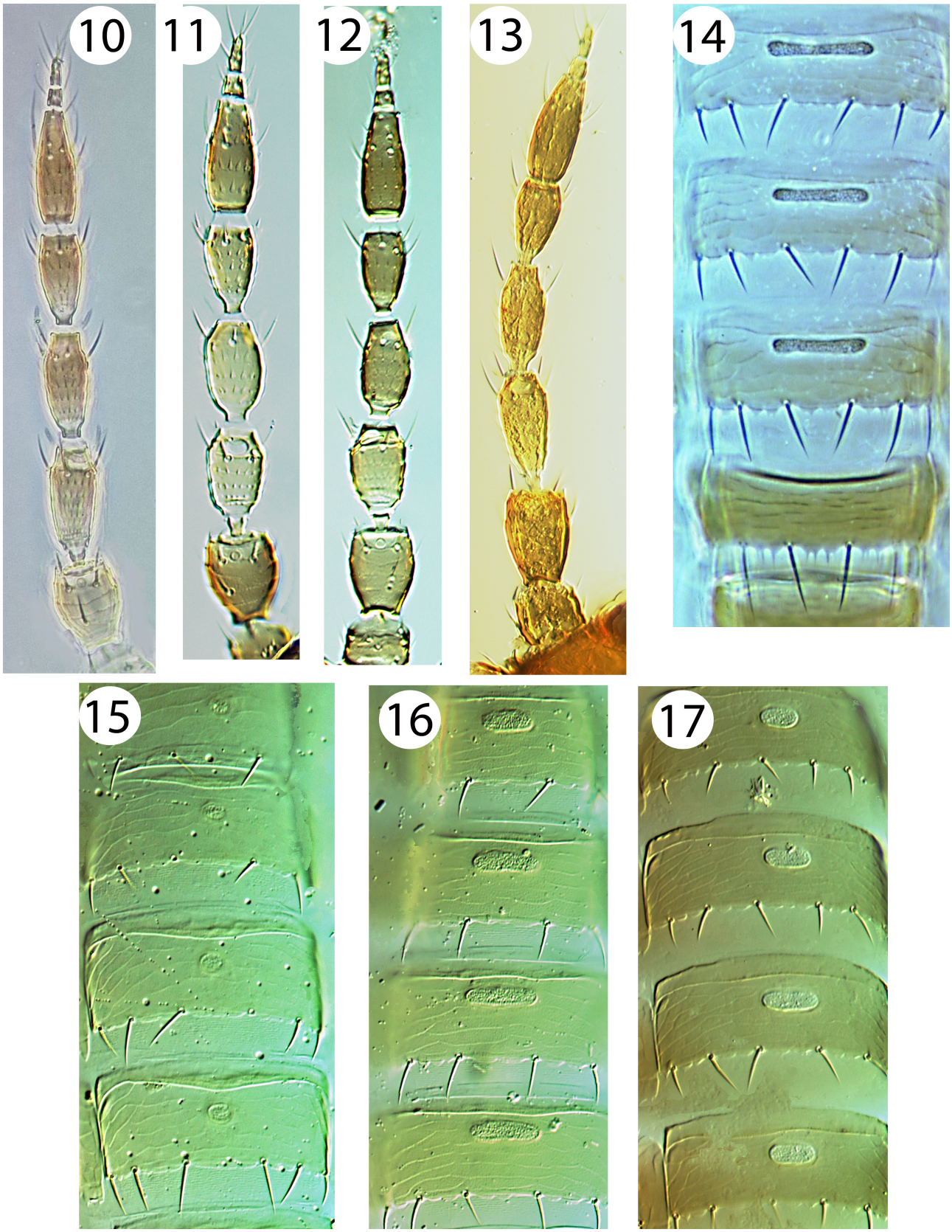
### *Pseudanaphothrips achaetus* (Bagnall)

(Figs 6, 7, 10, 14, 18, 19, 27)

*Pseudothrips achaetus* Bagnall, 1916: 398.

Described originally from an unspecified number of both sexes collected from flowers on Mt Lofty, South Australia, this species has been studied from multiple sites across all Australian States and Territories. It has been found widely in New Zealand and specimens have been studied in ANIC from Hawaii, Maui, and Timor Leste. Bhatti (1978) recorded four females and one male from two separate sites near Surabaya in Java, taken in 1920 and 1925. The published record of this species from California (Mound *et al*. 2019) is based on nine females and one male in the collection at Riverside, California, collected from the flowers of various plant species in May 2006 at Riverside and identified by M. Hoddle and L. Mound.

In structure, this is probably the most derived species within the genus, the length of the pronotal posteroangular setae being greatly reduced (Fig. 7). The fore wings are shaded but pale at the base, and the body is brown although paler in teneral adults. The metanotal median striae vary in how closely they converge at the posterior (Figs 18, 19) and the paired campaniform sensilla are sometimes absent. The posteromarginal comb on tergite VIII usually comprises a few closely spaced microtrichia medially with few laterally (Fig. 27), and the ctenidia often arise on or close to the anterior margin of each spiracle. In males, the sternal pore plates are more narrowly transverse and slender than in most members of this genus (Fig. 14).




**FIGURES 10–17**. *Pseudanaphothrips* species. Antenna 10–13: **(10)** *achaetus*; **(11)** *parvus*; **(12)** *querci*; **(13)** *uniformis*. Male pore plates 14–17: **(14)** *achaetus*; **(15)** *casuarinae*; **(16)** *frankstoni*; **(17)** *querci*.

### *Pseudanaphothrips araucariae* Mound & Palmer
(Figs 20, 29)

*Pseudanaphothrips araucariae* Mound & Palmer, 1990: 5.

This species was described from about 140 females and 60 males found on the male cones of *Araucaria* species, at Imbil, SE Queensland, Australia, and on the Pacific islands of Oahu and Hawaii. Subsequently, one female has been seen from Maui on *Vaccinium*, two females from Tahiti-Nui on *Lantana*, and one female from Lord Howe Island from dead twigs. In Australia, at Cardwell, NE Queensland, 13 females and four males have been studied from the male cones of *Pinus caribaea*, and at Tin Can Bay in SE Queensland 12 females from *Xanthorrhea resinosa* flowers, also at Surfers Paradise five females on *Callitris* male cones. These females are all in ANIC. However, the four males are in QDPC, together with about 40 females from various sites in eastern and southeastern Queensland, and with a single female from Cairns. These records suggest that although the species breeds in the male cones of *Araucaria* and *Pinus* spp., the females are highly dispersive. The only specimens taken as a series from any other plant were 10 females taken from tomatoes at Childers in Queensland in QDPC.

As indicated in the key above, both sexes of *P. araucariae* usually have ocellar setae pair III long, although the length of these setae varies between individuals in the same sample. In contrast, other members of this genus have these setae rarely longer than 1.5 times the diameter of on ocellus. Moreover, one pair of pronotal anteromarginal setae is usually considerably longer than in any other species of the genus. Antennal segment II is sometimes yellowish brown, particularly in teneral specimens. The metanotal sculpture lines are similar to those of *P. casuarinae*, not closely converging near the posterior (Fig. 20) in contrast to other species in the genus. When many specimens of this species are studied it becomes clear that the posteromarginal comb on tergite VIII comprises unusually weak and slender microtrichia that are all equidistant from each other (Fig. 20). The males have transverse slender pore plates similar to those of *P. achaetus* (Fig. 14).

### *Pseudanaphothrips aureolus* (Girault)
(Figs 21, 28)

*Physothrips aureolus* Girault, 1928: 3
*Isochaetothrips melanurus* Steele, 1940: 328. Synonymised by Mound (2002)

The original description of this species suggests that it was based on a single female taken on a Shastra Daisy in Victoria at Box Hill near Melbourne. The synonymic species, *melanurus*, was collected near Melbourne at Kalorama, from *Acacia dealbata*, 13. ix.1933, and based on four female and three male syntypes. The species was first recognised as a member of *Pseudanaphothrips* by Mound and Houston (1987). It is here recognised as sharing, only with *P. uniformis* among species in the genus, an unusually elongate tenth abdominal segment (Fig. 28). Apparently associated with the flowers of species in various genera of the Asteraceae (Mound & Tree 2020), one series of both sexes was taken from *Ozothamnus diosmifolius* at Mt Nebo, Brisbane. In total, about 30 females and 10 males have been studied, taken widely in southeastern Australia between Kangaroo Island and Brisbane.

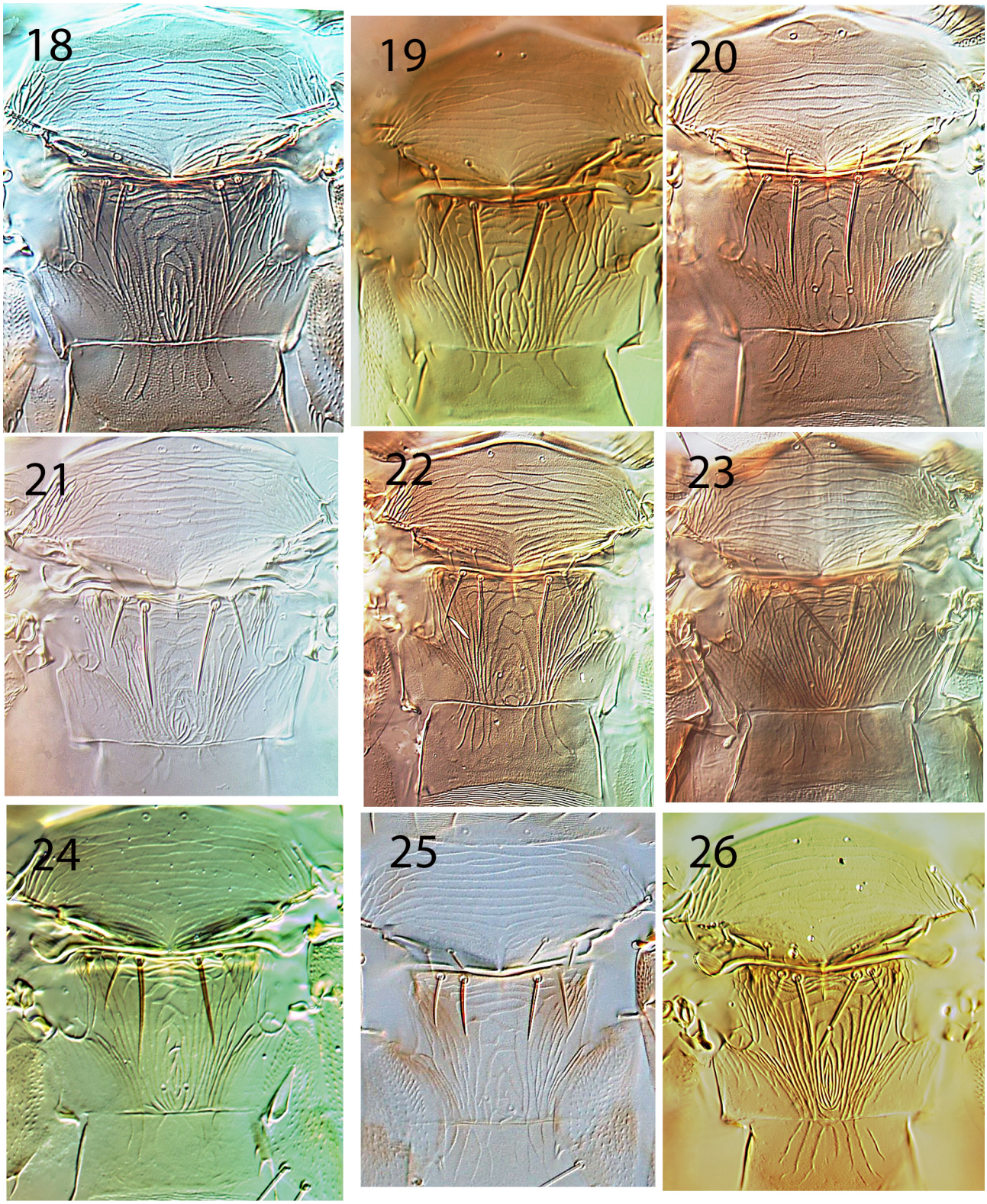
Females of *P. aureolus* are distinctive due to their yellow colour and elongate tenth abdominal segment, and the male pore plates are small and circular to slightly oval with a diameter of 10 to 15 microns. The metanotal sculpture lines are closely parallel and converge posteromedially (Fig. 21), a condition that is shared with most species in this genus. Both sexes have the microtrichia of the posteromarginal comb on tergite VIII long and regular, as in *P. uniformis* (Fig. 28), the only other species in the genus in which females have tergite X elongate.

### *Pseudanaphothrips casuarinae* Mound & Palmer
(Figs 15, 22)

*Pseudanaphothrips casuarinae* Mound & Palmer, 1990: 3.

Described originally from both sexes taken on *Casuarina paludosa* near Victor Harbour, South Australia, this species has been found widely in eastern Australia, with specimens studied from Tasmania and Kangaroo Island in southern

Australia to southeastern Queensland. Most of these specimens were taken from the male cones of various species of *Casuarina* and *Allocasuarina*, with *P. casuarinae* appearing to be strictly specific to these plants for population maintenance.




**FIGURES 18–26**. *Pseudanaphothrips* species, meso & metanota. **(18)** *achaetus* 1; **(19)** *achaetus* 2; **(20)** *araucariae*; **(21)** *aureolus*; **(22)** *casuarinae*; **(23)** *parvus*; **(24)** *frankstoni* from *Dicksonia*; **(25)** *frankstoni* from *Nothofagus*; **(26)** *querci*.

At a single site, in the National Botanic Gardens, Canberra, some indication of the life-history of this species could be deduced. Larvae were found in April 2014 in large numbers in the leaf-litter beneath trees of a species of *Allocasuarina*. Adults were also found with the larvae in this litter, but all of them were pale – presumably teneral. In contrast, adults taken a few weeks later from the male cones of the same trees were more extensively brown. It seems reasonable to conclude that *P. casuarinae* larvae fall to the ground to pupate, and the mature adult body colour is not achieved for many days after emergence from pupae.

This conclusion raises a more general problem for distinguishing species on details of body colour of individual specimens, or even samples. In the absence of life-history information such differences may not always be reliable. Even the colour of the fore wings of *P. casuarinae* seems to vary, with the base of these wings commonly being sharply pale, although more rarely individuals have been found with uniformly brown fore wings.

Because of these colour variations, *P. casuarinae* is here interpreted as a variable species. The type specimens, and others collected from *Allocasuarina paludosa* in southern Australia, are usually brown to dark brown. In contrast, specimens studied from *Casuarina equisetifolia* in Southeast Queensland are much paler. Moreover, adults seem to disperse widely from their breeding hosts. On one occasion, a long series of pale females with two males was taken from various flowers on Moreton Island, although this is a site where *Casuarina* trees grow in abundance.

Females have the pronotal posteromarginal median setae small, little larger than the submedian pairs. The comb on tergite VIII is long and regular in both sexes, and pale females are similar in many character states to females of the common species *P. frankstoni*. However, the posteromedian sculpture lines on the metanotum are never closely approximated (Fig. 22), although the pattern of orientation of these sculpture lines varies slightly between populations. The male sternal pore plates are consistently small, no more than 5 to 6 microns in diameter, and sometimes even smaller or difficult to see (Fig. 15). The pale males are similar to those of *P. aureolus*, but in that species the lines at the posterior of the metanotum are narrower and closely convergent.

### ***Pseudanaphothrips frankstoni*** **(Steele)**

(Figs 3, 8, 16, 24, 25, 40, 31)

*Isochaetothrips frankstoni* Steele, 1940: 325.
*Isochaetothrips pallidus* Steele, 1940: 328. **Syn. nov.**

This species was based on eight females and one male that are all mounted onto a single slide (Figs 1, 3) – these were collected from *Acacia* sp. at Frankston, a southeastern suburb of Melbourne, Victoria. Similarly, the three female syntypes of *P. pallidus* are mounted onto another single slide, and these were collected from *Cassinia* at Kalorama, an eastern suburb of Melbourne (Fig. 4). There are also two females on slides with similar data in the NHM labelled as *P. pallidus*. The fore wings of these five *P. pallidus* specimens are only 430 microns long in contrast to the 560 microns of the *P. frankstoni* syntypes (see the measurements and illustrations by Steele, 1940). Sakimura (1968) indicated that the syntypes of the two species differ in antennal segment lengths and proportions, but these differences are possibly related to the difference in fore wing length. All 12 syntypes of these two species are poorly preserved. They are squashed in a water-soluble mountant that has seriously deteriorated (Fig1, 2), and few structural details can be seen and recorded with any degree of certainty. As a result, *P. pallidus* cannot be distinguished satisfactorily from *P. frankstoni* and is therefore placed into synonymy.

Mound and Tree (2020) retained *P. pallidus* as distinct from *P. frankstoni*. However, the differences they noted were based, not on the syntypes, but on two long series of more recently collected specimens. These authors applied the name *P. frankstoni* to a series of specimens collected from the fronds of *Dicksonia antarctica* at Tidbinbilla near Canberra, with several specimens taken at the same locality from the flowers of *Olearia* and *Bedfordia arborea* (Asteraceae). These specimens generally have the following states: fore wings pale, metanotal striae close together or strongly convergent posteromedially (Fig. 24), and tergite VIII comb with median group of microtrichia very slightly convergent (Fig. 30). However, Mound and Tree (2020) suggest that the adults on *Dicksonia* fronds might have been overwintering on the fronds, after breeding in the flowers of *Bedfordia* shrubs that grow abundantly in that area. Three females and three males (in NHM) have been studied that are here identified as *P. frankstoni*. These were extracted from mist forest litter in southwestern Tasmania. The only other specimens that are here identified *as P. frankstoni* are almost all from southeastern Queensland, on plants around the car park at O'Reilly's in Lamington

National Park. These specimens, 30 females and one male, were taken from the flowers of *Michelia* and *Pentaceras* species, neither of which are members of Asteraceae.

The specimens to which Mound and Tree (2020) applied the name *P. pallidus* were all from leaves of *Nothofagus cunninghamii* in Tasmania with a few females from Warburton, 60km east of Melbourne. These specimens generally have the following states: fore wings slightly shaded, metanotal striae scarcely convergent posteromedially (Fig. 25), and tergite VIII comb with microtrichia evenly spaced (Fig. 31). These specimens from *Nothofagus* share similar metanotal sculpture with one syntype of *P. pallidus*. However, any decision that *P. pallidus* represents a different species from *P. frankstoni* would need to be based on more extensive studies, based on further collections in southern Victoria and Tasmania from *Nothofagus* and *Dicksonia* as well as various Asteraceae.

The species *P. frankstoni* is here interpreted as having females that are essentially yellow with antennal segments III–VIII largely brown. Abdominal segments IX–X are commonly light brown, and the head and pronotum often have a median transverse light brown area. The males have transversely oval pore plates (Fig. 16).

### ***Pseudanaphothrips parvus* (Bagnall)**

(Figs 9, 11, 23, 32)

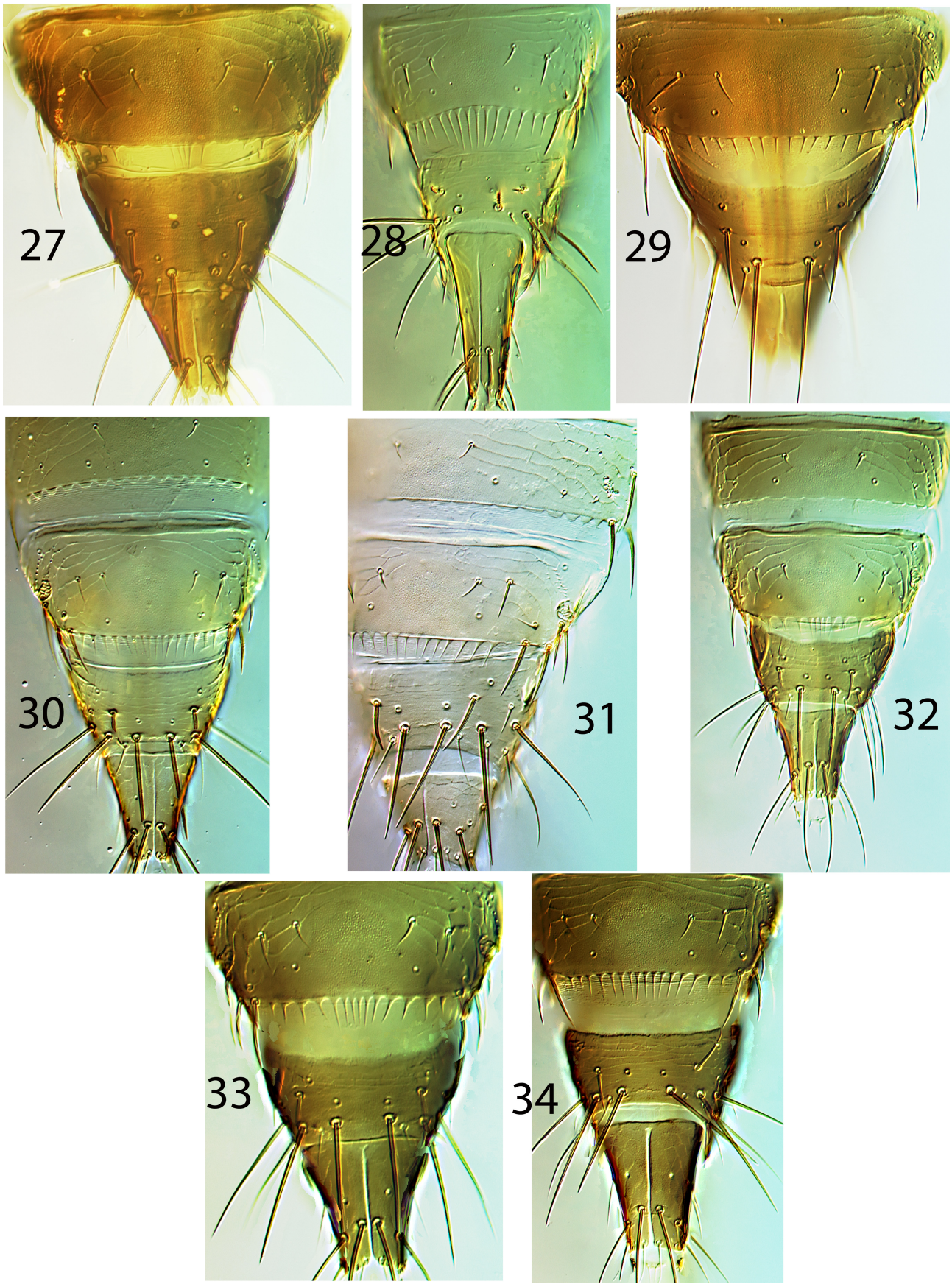
*Pseudothrips parvus* Bagnall, 1916: 222
*Physothrips nativus* Girault, 1929: 29. Synonymised by Mound, 2012: 67.
*Homochaetothrips pallipennis* Sakimura, 1968: 62. Synonymised by Mound, 2012: 67.

Bagnall described this species from an unspecified number of female specimens, from which a lectotype was selected by Mound (1968: 50) bearing the original data, Queensland, Brandon, from flower of *Helianthus*?, 16.x.1914 (R. Kelly). In contrast, the synonymic species *pallipennis* was described from Renmark, South Australia, based on a holotype and 11 paratype females from *Senecio*, x.1926 (R. Kelly), and *nativus* was based on a single female that apparently flew onto the table of the Government Entomologist A. R. Brimblecombe in Brisbane.

Although described as "yellow brown to brown", the apparent colour of the type specimens is due primarily to the colour of the body contents because the chitinous surface is seriously decolourised – probably due to storage in ethanol in daylight prior to slide-mounting. The tergal antecostal ridges, also abdominal segments IX to X, are clearly darker than the rest of the abdomen. This pattern is also found in some more recently collected, well-cleared females; two females have been studied that are uniformly brown with brown legs.

In total almost 30 specimens have been studied, collected in recent years from various sites. These comprise two males with one female from Erldunda, Northern Territory, just north of the border with South Australia, also several females from the Simpson Desert. From Queensland, the only recent specimens are a single female from Birdsville, and four females from Blackbutt in the southeast. In contrast, from South Australia a single female has been seen from Kangaroo Island, and two females at Adelaide airport; from southern Victoria two females from Colac have been identified, and from eastern New South Wales a series of females from Coonabarabran. This thrips species has thus been found widely but irregularly in eastern Australia, in a remarkable range of habitats from Queensland coastal areas to semi-desert areas of central Australia. All the available specimens were taken in the flowers of species of various Asteraceae genera.

*Pseudanaphothrips parvus* has remained poorly defined, both nominal species having been based on poorly preserved specimens (Mound & Tree 2020). The species has been confused with certain of the other brown coloured members of the genus, particularly *P. querci* and *P. uniformis*, also even with specimens of *P. casuarinae*. However, re-examination of the available specimens has indicated that *parvus* is distinguished by the following combination of character states: ocellar setae pair III small and arising on or near to line between anterior margins of hind ocelli; pronotum posteromarginal median setae longer and stouter than submedian setae (Fig. 9); metanotal sculpture lines closely converging posteriorly (Fig. 23); fore wings rather pale; tergite VIII marginal comb with median group of microtrichia closer together than lateral microtrichia (Fig. 32); tergite X no longer than its basal width. The males have small transversely oval pore plates.




**FIGURES 27–34**. *Pseudanaphothrips* species, tergites IX–X. **(27)** *achaetus*; **(28)** *aureolus*; **(29)** *araucariae*; **(30)** *frankstoni* from *Dicksonia*; **(31)** *frankstoni* from *Nothofagus*; **(32)** *parvus*; **(33)** *querci*; **(34)** *uniformis*.

### *Pseudanaphothrips querci* (Moulton)

(Figs 5, 12, 17, 26, 33)

*Isochaetothrips querci* Moulton, 1928: 306

This species was described from a single female taken at Taihoku, "Formosa" [Taiwan], on *Quercus*, 10.v.1920. It was subsequently recorded by Bhatti (1978), but apparently based on the original description, from 13 females in flowers at various sites near Surabaya, Java, between 1912–1913 and 1920–1923. The holotype was not studied here, but Christopher Grinter, Collection Manager at the California Academy of Sciences, kindly provided images of that specimen (Fig. 5). The only other known specimens of the species are identified here based on this illustration and the available descriptions. These specimens are all from southwestern Australia: Pemberton, 15 females, 6 males from grass and *Agonis* flowers, 13.xii.1999; Porongurup, 5 females in Malaise trap, xi.2003 (in ANIC), also Perth, Dalkieth, 5 females from *Gerbera* flowers, 8.xii.1955 (in NHM).

Both Moulton (1928) and Sakimura (1968) went to considerable effort to compare the holotype of this species with *uniformis*, primarily because these are both extensively brown in colour. However, Sakimura pointed out that in *querci* tergite X is 55 microns long, in contrast to *uniformis* in which tergite X is 70 to 80 microns long. This difference in length is consistent in the more recently collected specimens. It seems that in Australia *querci* is known only from the south of Western Australia. However, there remains a possibility that *querci* is no more than a colour variant of *parvus*, with which it shares a similar posteromarginal comb on tergite VIII (Figs 32, 33). However, such a synonymy cannot be confirmed from the available specimens. The male remains unknown.

### *Pseudanaphothrips uniformis* (Bagnall)

(Figs 13, 34)

*Physothrips uniformis* Bagnall, 1926: 102.

Bagnall described this species from an unspecified number of females taken in Victoria, at Ben Cairn near Healesville, from *Senecio dryadeus*, 17.i.1926 (R. Kelly). One female labelled as "Type" by Bagnall was selected as lectotype by Sakimura (1968). This specimen has been re-examined and compared to the following specimens from southern Tasmania: Mt Wellington, 4 females from *Bedfordia* flowers, 27.xi.2012, and 2 females from white Asteraceae flowers; Strathblane, 1 female from dead branches, 2.ii.2016 (in ANIC); Mt Wellington, 2 females from white Asteraceae flowers, 27.xi.2012 (in QDPC); Bruny Is., 1 female from *Helichrysum* sp., and 2 females from *Senecio quadridentalis*, 13.xi.1966; Sandy Bay, 1 male from *Pimelia nivea*, 17.xi.1968; and Fern Tree, 1 female from *Pomaderris* sp., 28.x.1966 (in NHM).

The slightly elongate tergite X of all the examined females is a character state shared only with *aureolus* among *Pseudanaphothrips* species. However, this tergite is shorter than that of the yellow species from eastern Australia, a species that has the tergite VIII comb of microtrichia remarkably long and evenly spaced. Both species share with several others the condition of metanotal sculpture lines closely parallel and convergent posteromedially. The males have small, circular to oval, pore plates.

## References


Bagnall, R.S. (1916) Brief descriptions of new Thysanoptera VII. *Annals and Magazine of Natural History*, Series 8, 17 (99), 213–223.
https://doi.org/10.1080/00222931508693771

Bagnall, R.S. (1926) Brief descriptions of new Thysanoptera. XV. *Annals and Magazine of Natural History*, Series 9, 18 (103), 98–114.
https://doi.org/10.1080/00222932608633483

Bhatti, J.S. (1978) Preliminary revision of *Taeniothrips*. *Oriental Insects*, 12 (2), 157–199.
https://doi.org/10.1080/00305316.1978.10434565

Crespi, B.J., Morris, D.C. & Mound, L.A. (2004) *Evolution of ecological and behavioural diversity: Australian Acacia thrips as model organisms*. Australian Biological Resources Study, Canberra & Australian National Insect Collection, Canberra, 328 pp.

Girault, A.A. (1928) *Some Insecta and a New All Highness. (Notes compiled in fear and sorrow)*. Published privately, Brisbane, 4 pp.
Girault, A.A. (1929) *North American Hymenoptera Mymaridae*. Published privately, Brisbane, 29 pp.
Karny, H. (1921) Zur Systematik der Orthopteroiden Insekten; III Thysanoptera. *Treubia*, 1, 211–269.
Karny, H. (1924) Results of Dr. E. Mjöberg's Swedish Scientific Expeditions to Australia 1910–1913. 38. Thysanoptera. *Arkiv för Zoologi*, 17A (2), 1–56.
Moulton, D. (1928) The Thysanoptera of Japan: New species, notes, and a list of all known Japanese species. *Annotationes zoologicae Japonensis*, 11, 287–337.
Mound, L.A. (1968) A review of R.S. Bagnall's Thysanoptera collections. *Bulletin of the British Museum (Natural History)*, Entomology Supplement, 11, 1–181.
https://doi.org/10.5962/p.78614
Mound, L.A. (2002) The *Thrips* and *Frankliniella* genus groups: the phylogenetic significance of ctenidia. *In*: Marullo, R. & Mound, L.A. (Eds.), *Thrips and Tospoviruses: Proceedings of the 7th International Symposium on Thysanoptera*. Australian National Insect Collection, Canberra, pp. 379–386. [http://www.ento.csiro.au/thysanoptera/symposium.html]
Mound, L.A. (2011) Grass-dependent Thysanoptera of the family Thripidae from Australia. *Zootaxa*, 3064 (1), 1–40.
https://doi.org/10.11646/zootaxa.3064.1.1
Mound, L.A. (2012) Three new synonyms among Australian Thripinae (Insecta: Thysanoptera). *Zootaxa*, 3209 (1), 67–68.
https://doi.org/10.11646/zootaxa.3209.1.4
Mound, L.A., Hoddle, M.S. & Hastings, A. (2019) *Thysanoptera Californica - Thrips of California*. Lucidcentral.org, Identic Pty Ltd, Queensland. Available from: https://keys.lucidcentral.org/keys/v3/thrips_of_california_2019/index.html (accessed 27 August 2025)
Mound, L.A. & Houston, K.J. (1987) An annotated check-list of Thysanoptera from Australia. *Occasional Papers on Systematic Entomology*, 4, 1–28.
Mound, L.A. & Palmer, J.M. (1981) Phylogenetic relationships between some genera of Thripidae (Thysanoptera). *Entomologica Scandinavica*, 15, 153–170.
Mound, L.A. & Palmer, J.M. (1990) Two new Thripidae (Thysanoptera) from the male flowers of *Araucaria* and *Casuarina* in Australia and Hawaii. *Entomologist's Monthly Magazine*, 126, 1–7.
Mound, L.A. & Tree, D.J. (2020) *Thysanoptera Australiensis – Thrips of Australia*. Lucidcentral.org, Identic Pty Ltd, Queensland. Available from: https://keys.lucidcentral.org/keys/v3/thrips_australia/index.html (accessed 27 August 2025)
Mound, L.A., Tree, D.J. & Wells, A. (2022) Convoluted maxillary stylets among Australian Thysanoptera Phlaeothripinae associated mainly with Casuarinaceae trees. *Zootaxa*, 5190 (3), 301–332.
https://doi.org/10.11646/zootaxa.5190.3.1
Palmer, C.M. & Mound, L.A. (2020) The diversity of thrips (Insecta: Thysanoptera) on buffel grass (*Cenchrus ciliaris*) is markedly lower than on native grasses in an urban landscape. *Journal of Urban Ecology*, 2020, 1–7.
https://doi.org/10.1093/jue/juaa024
Sakimura, K. (1968) A preliminary review of the genus *Homochaetothrips* gen.nov., with brief description of a new species. *Journal of the Australian Entomological Society*, 7, 59–62.
https://doi.org/10.1111/j.1440-6055.1968.tb00702.x
Steele, H.V. (1940) Three new species of *Isochaetothrips* from Australia. *Transactions of the Royal Society of South Australia*, 64, 325–329.
Wang, Z.H., Mound, L.A. & Tong, X.L. (2019a) Phylogenetic relationships within the *Frankliniella* genus-group based on morphology, with a revision of *Iridothrips* (Thysanoptera, Thripidae). *Zootaxa*, 4651 (1), 141–154.
https://doi.org/10.11646/zootaxa.4651.1.9
Wang, Z.H., Mound, L.A. & Tong, X.L. (2019b) *Frankliniella* species from China, with nomenclatural changes and illustrated key (Thysanoptera, Thripidae). *ZooKeys*, 873, 43–53.
https://doi.org/10.3897/zookeys.873.36863