

## ON AUSTRALIAN DERMESTIDAE. PART II.

THE GENUS TROGODERMA BERTHOLD.

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[Read 21st October, 1942.]

Twenty-eight Australian species have already been described as belonging to the genus *Trogoderma*: twenty by Blackburn, three by Arrow, two each by Erichson and Lea, and one by Reitter. Of these, Blackburn himself noted that his *T. baldiense* probably was the same as *T. apicipenne* Reitt., and this I believe to be correct. One of Arrow's species, *T. pectinifer*, is the insect previously described by Macleay as *Megatoma apicalis*, and thus becomes *Trogoderma apicalis* Macl. Blackburn evidently did not know this species. *T. socium* Lea was originally described as an *Anthrenus*. Fifteen new species are described herein, bringing the total number of Australian species to forty-two. Of these, the only species I am sure I have not seen is *T. consors* Arrow.

In the following tabulation, the aim has been to use, as much as possible, characters which do not necessitate removing specimens from their cards. The shape of the prosternal sulci is frequently obscured by the antennae, and is therefore not a suitable character for use in a tabulation, the purpose of which is to make the preliminary determination as easy as possible. I have found it necessary to depend on the character of the male antennal club more than seems advisable, as this renders the tabulation defective in regard to females.

*T. whitei*, n. sp. is not very noticeably bicolorous, but its natural place is beside *T. tolarnense* Blackb. *T. hobartense*, n. sp. should perhaps be placed in the bicolorous section on account of the rufescent apex to the elytra, but this is only apparent on critical examination.

*Tabulation of Australian Species of the Genus Trogoderma.*

- A. Elytra separately rounded; not completely covering body.
  - B. Pronotum strongly marginate; form narrow ..... *marginicolle*, n. sp.
  - BB. Not as above.
    - C. Colour mainly black.
      - D. Antennae of ♂ pectinate ..... *apicalis* Macl. = *pectinifer* Arrow
      - DD. Antennae of ♂ serrate ..... *consors* Arrow
    - CC. Colour mainly ferruginous ..... *occidentale* Blackb.
- AA. Elytra not separately rounded; completely covering body.
  - B. Unicolorous (excepting antennae and legs), or almost so. (Some of the species have the elytra somewhat paler, but not in any degree contrasting with the main colour, or bicolorous in themselves.)
    - C. Very small, not more than 2 mm. long.
      - D. Elytra devoid of erect setae or pubescence; clothing short and depressed.
        - E. Antennal club 5-segmented; size smaller ..... *parvum*, n. sp.
        - EE. Antennal club 3-segmented; size larger ..... *exsul* Blackb.
      - DD. Elytra normally clothed ..... *lindense* Blackb.
    - CC. Length more than 2 mm.
      - D. Antennal club of ♂ 8-segmented.
        - E. Colour fuscous; puncturation fine.
          - F. Elytra narrowing from shoulders; size larger ..... *laevipenne*, n. sp.
          - FF. Elytra, if anything, widening from shoulders; size smaller .. *explanaticolle*, n. sp.
        - EE. Colour black; puncturation coarse ..... *maurulum* Blackb.
      - DD. Antennal club of ♂ 7-segmented.
        - E. Legs testaceous.
          - F. Size larger; form broader ..... *hobartense*, n. sp.
          - FF. Size smaller; form narrower ..... *ellipticum*, n. sp.



- EE. Legs black.
- F. Punctuation of elytra extremely close; clothing of black and white setae interspersed ..... *meyricki* Blackb.
- FF. Punctuation of elytra much less close; clothing unicolorous. (The first segment of the club is very small.) ..... *pars antipodum* Blackb.
- DDD. Antennal club of ♂ 6-segmented.
- E. Size large, more than 3 mm.; antennal club strongly serrate ..... *frater* Arrow
- EE. Size smaller, less than 3 mm.; antennal club not thus.
- F. Narrower; colour black ..... *boganense*, n. sp.
- FF. Broader; colour brown ..... *nigrobrunneum*, n. sp.
- DDDD. Antennal club of ♂ not more than 5-segmented.
- E. Clothing very fine and rather pale.
- F. Pronotum marginate; colour black ..... *socium* Lea
- FF. Pronotum not so; colour brown.
- G. Less nitid; punctuation coarser ..... *inconspicuum*, n. sp.
- GG. More nitid; punctuation very fine ..... *reitteri* Blackb. var.
- EE. Clothing coarse and black, or dark in *difficile* Blackb.
- F. Antennal club 3-segmented in at least one sex; size larger ..... ? *morio* Er.
- FF. Antennal club more than 3-segmented in both sexes; size smaller.
- G. Prosternal sulci not so deep, and sides parallel; clothing fusco-piceous ..... *difficile* Blackb.
- GG. Prosternal sulci deep and triangular; clothing black.
- H. Antennae with club only dark, and segments more compact.
- I. Pronotum slightly marginate; form sub-ovate ..... *debilius* Blackb.
- II. Pronotum not at all marginate; form ovate ..... *adelaidae* Blackb.
- HH. Antennae entirely dark; club not so compact ..... *pars varipes* Blackb.
- BB. Noticeably bicolorous, or with bands of light coloured pubescence.
- C. Elytra unicolorous except for one or more bands of light coloured pubescence.
- D. Punctuation finer.
- E. Elytra with 1 fascia; antennal club of ♂ 3-segmented ..... *setulosum*, n. sp.
- EE. Elytra with 2 fasciae; antennal club of ♂ 7-segmented ..... *singulare* Blackb.
- EEE. Elytra with 4 fasciae; antennal club of ♂ 4-segmented .... *riguum* Er. or n. sp.
- Elytra with 4 fasciae; antennal club 3-segmented ..... *riguum* Er.  
(Unknown to me.)
- DD. Punctuation very coarse (1 elytral fascia) ..... *tasmanica*, n. sp.
- CC. Elytra bicolorous or, if not, without bands of light coloured pubescence.
- D. Elytra with light antemedial markings.
- E. Elytra with red humeral spots only.
- F. Size large; coarsely punctate ..... *carteri*, n. sp.
- FF. Size small; finely punctate ..... *reitteri* Blackb.
- EE. Elytra with apices red and an antemedial, lateral, red spot on each. .... *apicipenne* Reitt. var.
- EEE. Elytra with a clearly defined antemedial fascia.
- F. Larger; normally wide; fascia red (antennal club of ♂ 5-segmented) ..... *froggatti* Blackb.
- FF. Smaller; narrower; fascia testaceous.
- G. Elytral markings confined to the antemedial fascia and apices .. *longius* Blackb.
- GG. Elytral markings much more extensive.
- H. Pale area of elytra forming a shadowy cross; form shorter; antennal club of ♂ 7-segmented ..... *leai*, n. sp.
- HH. Pale area of elytra not thus; form longer ..... *blackburni* Lea
- DD. Elytra devoid of antemedial markings, or fascia of pale pubescence.
- E. Elytra unicolorous.
- F. Elytra red.
- G. Antennal club serrate.
- H. Medial lobe shorter; less thickly clothed ..... *pars tolarnense* Blackb.
- HH. Medial lobe longer; more thickly clothed ..... *whitei*, n. sp.
- GG. Antennal club not serrate.
- H. Size small; antennal club 3-segmented ..... *rufipenne*, n. sp.
- HH. Size large; antennal club 6-segmented ..... *yorkense* Blackb.
- EE. Elytra bicolorous.
- F. Sides and apex of elytra red.
- G. Antennal club of ♂ 8-segmented, strongly pectinate ..... *macleayi* Blackb.
- GG. Antennal club of ♂ 6-segmented, strongly serrate .... *pars tolarnense* Blackb.
- GGG. Antennal club of ♂ 5-segmented, not serrate ..... *eyrense* Blackb.
- FF. Apices only of elytra red.
- G. Length 3 mm. to 5 mm.
- H. Basal lobe of pronotum shorter; pronotum less transverse ..... *apicipenne* Reitt. = *baldiense* Blackb.



HH. Basal lobe of pronotum longer; pronotum less transverse .. *alpicola* Blackb.  
 GG. Length less than 3 mm.

H. Antennal club of ♂ 4-segmented; prosternal sulci distinct and closed behind  
 ..... *pars varipes* Blackb.

HH. Antennal club of ♂ 7-segmented; prosternal sulci much less distinct and  
 open behind ..... *pars antipodum* Blackb.

In the following descriptions, when the pronotum is referred to as marginate, it is implied that it can be seen to be so from directly above; also, if the insect is said to be convex, it is more than usually so. The pronotal puncturation referred to is that of the disc only, unless otherwise stated.

#### TROGODERMA MARGINICOLLE, n. sp.

Elongate ovate, fusco-piceous, nitid, sparsely clothed with long fusco-piceous setae, elytra fusco-rufous, antennae and legs testaceous, club fusco-piceous.

Pronotum strongly transverse, widest at base, sides strongly marginate and evenly rounded to apex, posterior angles acute, base bisinuate, medial lobe very wide, not produced, rounded at apex, finely and fairly closely punctate. Elytra less than two-thirds as wide as long, base equal in width to prothorax, slightly wider at shoulder, thence gradually widening for two-thirds of length, apices separately rounded, moderately punctate, faintly costate, depressed in front of shoulders. Antennal club compact, elongate ovate; ♂, 6-segmented; ♀, 5-segmented. Prosternal sulci wide, deep, triangular, closed.

Size: 2.6 mm. × 1.25 mm.; 2.4 mm. × 1.1 mm.

*Hab.*—S. Aust.: Lucindale (Feuerheerdt); Mt. Lofty Ranges (S. H. Curnow).

Holotype and paratypes in South Australian Museum, paratype in author's collection.

Five specimens of this very distinct species cannot be confused with any *Trogoderma* described from Australia. In shape and in its not very robust form, it is nearest to *T. longius* Blackb. and *T. blackburni* Lea, but both these species have a conspicuous elytral pattern. The strongly marginate pronotum is distinctive.

#### TROGODERMA (MEGATOMA) APICALIS (Macle.).

*Megatoma apicalis* Macleay, *Trans. Ent. Soc. N.S.W.*, ii (3), 1871, 170.—*Trogoderma pectinifer*, *Ann. Mag. Nat. Hist.*, (8) xv, 1915, 429.

Macleay's type in the Australian Museum, which I have examined, is a *Trogoderma*. Blackburn evidently did not know of it. The species occurs commonly in the Bogan River region of New South Wales, and agrees very well with the description of *T. pectinifer* Arrow, and must be the same insect, especially as it must occur in the type locality of the latter. Arrow's description is by far the better.

#### TROGODERMA OCCIDENTALE Blackb.

*Trans. Roy. Soc. S. Aust.*, xiv, 1891, 127.

The description of this species was based on a single female. The male antennal club is 7-segmented. No dimensions are stated for the type, which is in the British Museum. Specimens before me vary from 4.6 mm. × 2.75 mm. to 2.25 mm. × 1.4 mm. The base of the pronotum is sometimes infused with the colour of the elytra.

#### TROGODERMA PARVUM, n. sp.

Ovate, convex, piceous, sub-nitid, fairly thickly clothed with pale depressed pubescence, elytra and antennae fusco-piceous, legs testaceous.

Pronotum widest just in front of base, posterior angles acute, sides evenly rounded to apex, base lightly bisinuate, medial lobe rounded at apex and not produced, oblique depressions slight, coarsely and closely punctate. Elytra, base slightly narrower than that of prothorax, slightly widened at shoulders, thence slightly curved, then evenly rounded to apex, coarsely and closely punctate (rather more so than pronotum). Antennae of ♂, 3rd segment moniliform, 4th to 6th strongly serrate, remaining five forming the club proper, of which the first four are progressively more transverse and the terminal of nearly equal length and breadth, evenly rounded at apex, club rather loose; ♀, 3rd to 6th small moniliform, club 5-segmented, narrowly elongate-ovate, loose. Prosternal sulci deep, narrowly triangular, narrowly open.



Size: 1.75 mm.  $\times$  1.25 mm.; 1.55  $\times$  1 mm.

*Hab.*—W. Aust.: Mullewa, Warren R., Geraldton (W. D. Dodd).

Cotypes in the South Australian Museum and the author's collection.

There are nine specimens before me. They can be associated with *T. exsul* Blackb. and *T. eyrense* Blackb. on account of their small size, but differ conspicuously in the antennae and are still smaller. The species differs from the former by its more closely and coarsely punctate pronotum, and from the latter by its depressed pubescence.

*TROGODERMA LAEVIPENNE*, n. sp.

Sub-ovate, fuscous, nitid, clothed with long, fine, semi-erect testaceous pubescence, legs and antennae testaceous.

Pronotum widest at base, this moderately bisinuate, medial lobe broad sub-truncate, posterior angles acute, sides evenly curved and slightly marginate, apex less strongly curved, finely and not closely punctate, oblique depressions wide and shallow. Elytra two-thirds as wide as long, base slightly narrower than prothorax, expanding to shoulders thence gradually narrowed for approximately two-thirds of length, then evenly rounded to apex, finely and not closely punctate. Antennal club of (?) ♂ loosely 8-segmented, of which 1st and 2nd segments are sub-moniliform, 3rd to 6th sub-quadrate and progressively increasing in size, 7th approximately equal to 6th and 8th elongate and rounded at apex. Prosternal sulci wide, deep, sub-triangular, closed.

Size: 3 mm.  $\times$  1.8 mm.

*Hab.*—Qd.: Mt. Tambourine (A. M. Lea).

Type unique in South Australian Museum.

The antennal club could be considered to consist of 6 segments only, but as the 4th and 5th are more highly developed than the 3rd, which is elongate and without setae, it seems to me, they should be included. The antennae are very similar to those of *T. maurulum* Blackb., from which its colour and much finer puncturation at once separate it. It can hardly be confused with any described Australian species.

*TROGODERMA EXPLANATICOLLE*, n. sp.

Sub-ovate, fuscous, sub-nitid, clothed with long, fine, semi-erect testaceous pubescence, elytra fusco-rufous, antennae and legs testaceous.

Pronotum widest just in front of base, this moderately bisinuate, medial lobe broad, large, evenly rounded, posterior angles barely acute, sides evenly rounded to apex and noticeably explanate, lightly and moderately closely punctate. Elytra four-fifths as wide as long, base narrower than base of prothorax, slightly expanding to shoulders, thence approximately parallel for about one-half length, then evenly rounded to apex, moderately and not closely punctate. Antennal club of ♂ elongate, symmetrical, 8-segmented, of which the first seven are sub-quadrate and progressively larger, the terminal elongate and sub-conical. Prosternal sulci wide, deep, sub-triangular, closed.

Size: 2.2 mm.  $\times$  1.25 mm.

*Hab.*—S. Aust.: Kangaroo I. (A. H. Elston).

Cotypes in the Australian Museum and the author's collection.

Both the specimens before me are evidently males. The 8-segmented antennae associate this species with *T. maurulum* Blackb. and *T. laevipenne*, n. sp., but the former is black and the latter very different in outline, and larger. In shape and size it resembles *T. socium* Lea, but that species also is black.

*TROGODERMA HOBARTENSE*, n. sp.

Ovate, moderately convex, nitid, fusco-piceous becoming fusco-rufous at apex and sides of elytra, fairly closely clothed with fuscous pubescence, legs and antennae testaceous.

Pronotum widest at base, this moderately bisinuate, medial lobe wide, large, and evenly rounded, posterior angles acute, sides evenly rounded to apex, finely and fairly closely punctate. Elytra two-thirds as wide as long, slightly wider than prothorax, parallel for two-thirds of length, then evenly rounded to apex, rather closely and fairly coarsely punctate. Antennal club of ♂ 7-segmented, narrowly elongate; ♀, 5-segmented elongate-ovate. (Prosternal sulci invisible without removing specimens from card.)



Size: 3.5 mm.  $\times$  2 mm.; 2.75 mm.  $\times$  1.6 mm.

*Hab.*—Tasm.: Hobart (A. M. Lea).

Holotype and allotype in South Australian Museum.

This species is distinguished from *T. nigrobrunneum*, n. sp. by its coarser elytral puncturation, and from *T. reitteri* Blackb. by the greater number of segments in the antennal club.

TROGODERMA ELLIPTICUM, n. sp.

Elliptical, piceous, sub-nitid, sparsely clothed with long piceous setae, elytra fusco-piceous, legs and antennae testaceous, club piceous, ventral pubescence pale.

Pronotum widest at base, this moderately bisinuate, medial lobe wide and evenly rounded at apex, sides evenly rounded to apex, posterior angles acute, moderately and closely punctate, oblique depressions shallow. Elytra three-fifths as wide as long, slightly wider than prothorax, parallel from shoulders for approximately one-half length, coarsely and not so closely punctate. Antennal club of ♂ long, elongate-ovate, compact, 7-segmented, of which the 1st is small, but distinctly wider than the preceding two; ♀, elongate-ovate, compact, 5-segmented. Prosternal sulci, deep, wide triangular, closed.

Size: 2.3 mm.  $\times$  1.2 mm.; 2.1 mm.  $\times$  1.1 mm.

*Hab.*—S. Aust.: Murray Bridge (Lea); Mt. Lofty Ranges (S. H. Curnow); Lucindale (Feuerheerdt).

Holotype and paratypes in South Australian Museum, paratype in the author's collection.

There are four specimens before me. The species is more compact than *T. marginicollae*, n. sp., more coarsely punctate and differs in the antennae of the male. It is narrower and darker in colour than *T. lindense* Blackb. and also differs in the antennae. From the two other Australian species, *T. antipodum* Blackb. and *T. meyricki* Blackb., in which the antennal club is 7-segmented, it differs in being smaller, narrower and not black, and from the latter in the uniform colour of its dorsal clothing.

TROGODERMA MEYRICKI Blackb.

*Trans. Roy. Soc. S. Aust.*, xiv, 1891, 128.

The cotype of this species in the South Australian Museum is in pieces, but there are also specimens from South Australia and Western Australia that agree very well with the description. The interspersed black and white clothing is quite noticeable, the light coloured setae being shorter and more depressed. The other noticeable feature is the contrast between the very finely punctate pronotum and the coarsely punctate, almost rugose, elytra.

TROGODERMA FRATER ARROW.

*Ann. Mag. Nat. Hist.*, (8) xv, 1915, 430.

Two specimens, one in the South Australian Museum and one in my collection, taken near Sydney, agree perfectly with Arrow's description though one is 4 mm. in length. They superficially resemble the species I take to be *T. morio* Er., but the serrate antennae at once separate them.

TROGODERMA BOGANENSE, n. sp.

Sub-ovate, black, convex, nitid, clothed with semi-erect black setae, legs and antennae fusco-ferruginous.

Pronotum widest at base, this moderately bisinuate and slightly elevated, medial lobe broadly rounded and raised at apex, posterior angles acute, sides evenly rounded to apex, oblique depressions unusually near lateral margins, finely and not closely punctate. Elytra two-thirds as wide as long, base depressed and as wide as prothorax, very slightly expanding to shoulders, thence gradually widening for about two-thirds of length, then evenly rounded to apex, moderately and fairly closely punctate. Antennal club of ♂ large, asymmetrical, 6-segmented, of which 1st to 5th are progressively wider and produced anteriorly, 1st to 3rd very short and transverse, 4th and 5th much longer, but still wider and 6th a little narrower, not transverse and bluntly rounded at apex; ♀, 3-segmented, small, ovate. Prosternal sulci very wide, shallow, triangular, closed.



Size: 2.5 mm.  $\times$  1.4 mm.; 2 mm.  $\times$  1.1 mm.

*Hab.*—N.S.W.: Bogan R. (J. W. T. Armstrong).

Cotypes in the South Australian Museum and the author's collection.

A long series before me is distinguished most readily from the other small black species by the elytra being widest two-thirds of their length from the base. The 6-segmented asymmetrical club of the male readily differentiates the species in my tabulation.

*TROGODERMA NIGROBRUNNEUM*, n. sp.

Ovate, fuscous, nitid, clothed with fine, somewhat paler depressed pubescence, extremely lightly and rather sparsely punctate, legs and antennae testaceous.

Pronotum widest at base, this lightly bisinuate, medial lobe wide and sub-truncate at apex, posterior angles acute, sides evenly rounded to apex. Elytra three-fourths as wide as long, expanding to shoulders thence slightly narrowed and widely rounded to apex, base as wide as prothorax. Antennal club of ♂ 6-segmented, compact, widening to penultimate segment, terminal segment sub-triangular and depressed at centre; ♀, 4-segmented. Prosternal sulci wide, deep, triangular, closed.

Size: 3.25 mm.  $\times$  2 mm.; 2 mm.  $\times$  1.25 mm.

*Hab.*—Qd.: Cairns (A. M. Lea, F. P. Dodd, E. Allen).

Cotypes in the South Australian Museum and the author's collection.

There are twenty-seven specimens before me. They are readily distinguished from the Australian members of the genus by the extreme fineness of their puncturation. The species most resembles *T. reitteri* Blackb., but differs in the antennae and there is no sign of the humeral spot. The puncturation in *reitteri* is coarser on the elytra. Some of the series are rather lighter in colour.

*TROGODERMA SOCIUM* (Lea).

*Anthrenus socius* Lea, PROC. LINN. SOC. N.S.W., (2) x, 1895, 228.

In addition to the type, there are six other specimens from Sydney in the Lea Collection.

*TROGODERMA INCONSPICUUM*, n. sp.

Ovate, fusco-piceous, sub-nitid, clothed with moderately long semi-erect pallid pubescence, legs and antennae testaceous.

Pronotum widest at base, this shallowly bisinuate, medial lobe wide and rounded, posterior angles acute, sides evenly rounded to apex, finely and fairly closely punctate. Elytra three-fifths as wide as long, base as wide as prothorax, expanding slightly to shoulders thence parallel at first, then evenly rounded to apex, rather coarsely and fairly closely punctate, colour slightly diluted at apex. Antennal club 3-segmented, ovate. Prosternal sulci wide, deep, triangular, closed.

Size: 2.25 mm.  $\times$  1.5 mm.

*Hab.*—W. Aust.: Swan R. (Lea).

Cotypes in the South Australian Museum.

I am doubtful of the sex of the two specimens before me. They are close to *T. reitteri* Blackb., but less nitid and more strongly punctate, especially on the elytra, and the humeral spot is absent. From *T. socium* Lea they differ *inter alia* by the prothorax being not at all marginate.

*TROGODERMA REITTERI* Blackb. var.

*Trans. Roy. Soc. S. Aust.*, xv, 1892, 207.

There is a series in the Lea Collection, from the vicinity of the Jenolan Caves, and four specimens in my own, from Mullaley, New South Wales, that I cannot separate satisfactorily from Blackburn's species. The elytra are unicolorous and I believe the prothorax to be larger.

*TROGODERMA ? MORIO* (Er.).

*Megatoma morio* Erichson, *Arch. f. Naturg.*, viii (1), 1842, 152.

Ovate, black, sub-nitid, clothed with rather short black setae, antennae and tarsi fusco-ferruginous.



Pronotum moderately, deeply and fairly closely punctate on disc, sides punctate-rugulose, widest at base, evenly rounded to apex, posterior angles acute, base moderately bisinuate, medial lobe broad, fairly long and evenly rounded, oblique depressions not well developed. Elytra two-thirds as wide as long, slightly wider than prothorax, parallel for two-thirds of length, then evenly rounded to apex, rather coarsely and closely punctate. Antennal club of ♂ 3-segmented, elongate-ovate (the 8th segment, though more transverse than the 7th, does not seem to belong to the club); ♀, 5-segmented, rather more lightly coloured. Prosternal sulci moderately deep, fairly wide, sub-triangular, closed.

Size: 4.75 mm. × 2.8 mm.; 3.4 mm. × 2 mm.

Hab.—N.S.W., Vict., W. Aust.

This species resembles *T. apicipenne* Reitt. in shape and size. It agrees far better with Erichson's description, than that chosen by Blackburn, which is too elongate, so closely punctate as not to appear nitid and the antennae not with the club only dark as in the original description. This species is widespread in southern and eastern coastal areas, and, though I have not seen a Tasmanian specimen, it must almost certainly occur there. It is remarkable that the smaller and narrower specimens, presumably males, have the antennal club 3-segmented, whereas the females have it 5-segmented. This character and its larger size at once separate it from *T. debilius* Blackb., *T. adalaidae* Blackb. and *T. varipes* Blackb.

The specimens identified by Blackburn as *T. morio*, I am unable to differentiate from his *T. maurulum*. The female antennal difference noted by him seems to me either too slight or to be due to the angle at which the antennae are observed. The female club is 5-segmented in each case. The puncturation of the pronotum, which is closer but not so deep, distinguishes this species from that described above; also the antennae are different.

#### TROGODERMA DIFFICILE Blackb.

*Trans. Roy. Soc. S. Aust.*, xiv, 1891, 126.

There is no cotype or specimen identified by Blackburn in the South Australian Museum, but specimens there agree so well with his description that I have no hesitation in identifying them as this species. Arrow, when describing *T. frater*, doubted that the clothing of *T. difficile* was bicolorous. That of the specimens before me is fusco-piceous.

#### TROGODERMA ADELAIDAE Blackb.

*Trans. Roy. Soc. S. Aust.*, xiv, 1891, 125.

This species and *T. debilius* Blackb. (*Trans. Roy. Soc. S. Aust.*, xxvii, 1903, 164) are extremely close and I am not at all sure that they are distinct. There is no co-type of *T. debilius* in the South Australian Museum, and the differences, noted in my tabulation, which are based on a specimen identified by Blackburn, are very slight.

#### TROGODERMA SETULOSUM, n. sp.

Elliptical, fuscous, sub-nitid, clothed with short depressed fuscous setulae, elytra slightly paler, and with a vague antemedial fascia of pallid setulae; antennae and legs testaceous.

Pronotum widest at base, this lightly bisinuate, medial lobe of moderate width, rather long and evenly rounded, posterior angles acute, sides evenly rounded to apex, oblique depressions very faint, lightly and not closely punctate. Elytra three-fifths as wide as long, base as wide as prothorax, expanding a little to shoulders thence sub-parallel for about one-half length then evenly rounded to apex, moderately and not closely punctate. Antennal club of (?) ♂ 3-segmented, ovate. Prosternal sulci wide, deep triangular, closed.

Size: 2.25 mm. × 1.4 mm.

Hab.—Qd.: Cunnamulla (H. Hardeastle).

Holotype, unique in South Australian Museum.

The clothing of this species is much shorter and more depressed than in *T. singulare* Blackb., besides the antennal difference. From *T. inconspicuum*, n. sp., it differs in being longer and less coarsely punctate, as well as in the clothing; and the same applies to *T. reitteri* Blackb. var., except that it is more coarsely punctate than that species.



## TROGODERMA SINGULARE Blackb.

*Trans. Roy. Soc. S. Aust.*, xiv, 1891, 128.

There is no specimen identified by Blackburn in the South Australian Museum, but specimens from South Australia and Western Australia in that collection agree well with his description. They vary somewhat in the length of their clothing, and on three specimens in the Australian Museum from New South Wales it is extremely long. The puncturation of the latter is coarser, but I still believe them to be the same species.

## TROGODERMA RIGUUM Er.

*Arch. f. Naturg.*, viii (1), 1842, 152.

I am in considerable doubt regarding this species. After careful consideration of five specimens assigned to it by Blackburn, including one of those referred to in his note (*Trans. Roy. Soc. S. Aust.*, xxxi, 1907, 232), which is not abraded, I cannot agree that they belong to this species, and believe them to be undescribed. They are here-under described as *T. tasmanica*.

There are two specimens, from Victoria, one in the National Museum and one in the Lea Collection, that agree very well with Erichson's description, except that the antennal club is 4-segmented. They may be males of his species, unless it is synonymous with *Anthrenocerus* (*Anthrenus*) *australis* Hope, as suggested by Arrow, in which case the specimens, I have examined, are undescribed.

## TROGODERMA TASMANICA, n. sp.

Elongate-ovate, black, sub-nitid, sparsely clothed with comparatively short black setae, obscurely patterned with white setae, a crenulate premedial elytral fascia being the most noticeable mark, antennae and legs ferruginous, coarsely and confluent punctate, underside clothed with white pubescence.

Pronotum widest just in front of base, this lightly bisinuate, medial lobe moderately wide, longer than usual and evenly rounded at apex, posterior angles not strongly acute, sides rounded at first, then narrowing towards and finally rounded to apex, oblique depressions wide and shallow, less coarsely punctate than elytra, white setae forming a dorsal cross almost obsolete at centre, four indefinite basal and two sub-lateral spots. Elytra slightly narrower than prothorax, three-fifths as wide as long, expanding slightly to and slightly narrowed behind shoulders, thence sub-parallel for two-thirds of length, then evenly rounded to apex, the premedial fascia, narrow and in four scallops, otherwise the white setae scattered in single units tending to form several longitudinal lines at base. Antennal club 3-segmented, loosely elongate-ovate, 1st and 2nd segments serrate and the terminal sub-ovate, stouter in ♂ and the terminal segment longer. Prosternal sulci wide and not deep though well defined.

Size: 4 mm. × 1.8 mm.; 2.8 mm. × 1.5 mm.

*Hab.*—Tasm. (A. M. Lea).

Holotype and paratypes in the South Australian Museum, paratypes in the National Museum and the author's collection.

This species is readily distinguished from *T. singulare* Blackb. and *T. adalaidae* Blackb. by its larger size and much coarser puncturation and from the other Australian species, including *T. setulosum*, n. sp., by its very close coarse puncturation and unifasciate elytra in combination.\*

## TROGODERMA CARTERI, n. sp.

Elongate-ovate, fusco-piceous, sub-nitid, clothed with short, semi-erect fusco-piceous setae, elytra fuscous with a small castaneous indeterminate humeral spot on each, legs and antennae testaceous.

Pronotum widest at base, this slightly bisinuate, medial lobe broad, short, sub-truncate, i.e., slightly incurved at apex, posterior angles acute, sides evenly rounded to

\* When preparing this paper for publication, I overlooked *Megatoma tenuifasciata* Reitt. (*Verh. naturf. Ver. Brünn*, xix, 1880 (1881), p. 36), of which I have, unfortunately, not seen the description. This Tasmanian species is probably a *Trogoderma* and may be conspecific with my *T. tasmanica* as the name seems to suggest. *T. tasmanica* has rather the facies of a *Megatoma*.



apex, coarsely and confluent punctate, oblique depressions absent. Elytra three-fifths as wide as long, base as wide as prothorax, widening very slightly to shoulders thence parallel for approximately two-thirds of length, then evenly rounded to apex, coarsely but not so closely punctate as pronotum, a slight elevation in centre of basal one-third of each elytron. Antennae, 3rd to 5th segments moniliform, 6th to 8th serrate and the last three forming a loose club. Prosternal sulci wide, moderately deep, sub-triangular closed.

Size: 3.75 mm.  $\times$  1.75 mm.

*Hab.*—N.S.W.: Bogan R. (J. W. T. Armstrong).

Holotype and paratype in the author's collection.

I am doubtful of the sex of the two specimens before me, but believe them to be females. The humeral spot distinguishes them from all Australian species, except *T. reitteri* Blackb. and that is a very different insect. I have named the species after the late H. J. Carter, whose help and encouragement enabled me to undertake this work.

#### TROGODERMA LEAI, n. sp.

Elongate-ovate sub-parallel, fusco-piceous, sub-nitid, clothed with long semi-erect fuscous and pallid setae, elytra fuscous with sides, suture and premedial fascia testaceous, legs and antennae ferruginous, club fuscous.

Pronotum widest just in front of base, this moderately bisinuate, medial lobe wide and evenly rounded, sides quickly narrowed, then evenly rounded to apex, posterior angles not strongly acute, coarsely and closely punctate. Elytra three-fourths as wide as long, base narrower than prothorax, slightly expanding to shoulders, thence gradually narrowed for about two-thirds of length, then evenly rounded to apices, which show a tendency to be separately rounded, closely and more coarsely punctate than pronotum, striae visible as rows of irregular dark spots. Antennal club of ♂ elongate, loose, 7-segmented, terminal segment much longer than wide, remainder moderately transverse; ♀, 5-segmented, elongate-ovate. Prosternal sulci not wide, moderately deep, open behind.

Size: Length 2.6–2.4 mm., width approx. 1.5 mm.

*Hab.*—W. Aust.: Geraldton (A. M. Lea).

Cotypes in the South Australian Museum and the author's collection.

Eight specimens of this very distinct species, in the Lea Collection of the South Australian Museum, are associated with *T. longius* Blackb. and *T. blackburni* Lea in my tabulation. From the former, the antennal club not 4-segmented in either sex and its coarser puncturation sufficiently distinguish it, and the shorter form and less elaborate pattern are the most readily seen differences from the latter. It is at once distinguished from *T. froggatti* Blackb. by the 7-segmented, more loosely articulated club of the male.

There are two specimens from King I. that seem to belong to this species. The elytra are darker and not light at the suture.

#### TROGODERMA FROGGATTI Blackb.

*Trans. Roy. Soc. S. Aust.*, xv, 1892, 34.

Blackburn was uncertain as to the sex of the two specimens he described. The cotype in the South Australian Museum is a male, as the antennal club is 5-segmented in that sex. In the female it is 4-segmented and smaller.

#### TROGODERMA TOLARNENSE Blackb.

*Trans. Roy. Soc. S. Aust.*, xxvii, 1903, 163.

Specimens in my collection, from the Bogan R., New South Wales, agree well with the description of this species, of which there was no identified specimen in the South Australian Museum. The clouding of the elytra is frequently absent.

#### TROGODERMA WHITEI, n. sp.

Elongate-ovate, convex, sub-nitid, fuscous, clothed with moderately long semi-erect fuscous setae interspersed with recumbent pale testaceous pubescence, elytra fusco-testaceous, legs and antennae testaceous, club fuscous.

Pronotum widest at base, this moderately bisinuate, medial lobe wide and rounded at apex, less strongly transverse than usual, posterior angles acute and strongly retrose,



sides narrowing rapidly then evenly rounded to apex, moderately and closely punctate. Elytra as wide as prothorax but slightly narrower at base, two-thirds as wide as long, parallel for two-thirds of length, then evenly rounded to apex, coarsely and contiguously punctate, slightly rugose. Antennal club, 6-segmented, long, elongate-ovate, slightly serrate. (Prosternal sulci cannot be satisfactorily described without removing specimen from card.)

Size: 2.5 mm.  $\times$  1.25 mm.

*Hab.*—Central Aust.: Flat Rock Hole, Musgrave Ranges (Capt. S. A. White).

Holotype unique in South Australian Museum.

This species is nearest to *T. tolarnense* Blackb. from which it differs in being more elongate, less nitid, in having the elytra contiguously punctate, the medial lobe longer and the antennal club less strongly serrate. It also resembles *T. occidentale* Blackb., but the antennae are quite different and the elytral apices are not separately rounded.

#### TROGODERMA RUFIPENNE, n. sp.

Sub-ovate, black, nitid, clothed with semi-erect fuscous pubescence, elytra ferruginous, medially clouded near base on some specimens, legs and antennae fusco-testaceous.

Pronotum widest at base, this very slightly bisinuate, posterior angles acute, medial lobe broadly rounded, sides converging uniformly at first, then evenly rounded to apex, closely and lightly punctate, oblique depressions slight. Elytra as wide at base as prothorax, widening to shoulders thence gradually narrowing for one-half length, then evenly rounded to apex, almost as wide as long, moderately and fairly closely punctate, striae visible as rows of dark spots in some lights. Antennal club of ♂ 3-segmented, elongate ovate; ♀, 3-segmented narrower. Prosternal sulci wide, moderately deep, closed, inner margin evenly rounded.

Size: 2.2 mm.  $\times$  1.4 mm., 1.75 mm.  $\times$  1 mm.

*Hab.*—N.S.W.: Bogan R. (J. W. T. Armstrong).

Cotypes in the South Australian Museum and the author's collection.

Thirteen specimens before me are readily distinguishable among Australian species by their small size and ferruginous elytra. The species is much brighter than *T. lindense* Blackb. and the club could not be taken as 5-segmented. The colour at once separates it from *T. exsul* Blackb.

#### TROGODERMA APICIPENNE Reitt.

*Deuts. ent. Z.*, xxv (1), 1881, 232.—*T. baldiense* Blackburn, *Trans. Roy. Soc. S. Aust.*, xiv, 1891, 127.

After examination of twenty-four specimens, mostly from the South Australian Museum, and careful consideration of the descriptions and Blackburn's tabulation, I am unable to find any feature to separate *T. baldiense* Blackb. from *T. apicipenne* Reitt., which is a widespread somewhat variable insect. The slight difference in the colour of the antennae, used by Blackburn in his tabulation, is insufficient when unsupported. Blackburn himself has suggested the synonymy (*Trans. Roy. Soc. S. Aust.*, xv, 1892, 208). Among the specimens in the South Australian Museum is a fine colour variety from Cairns, Queensland. It has an additional lateral premedial red spot on each elytron.

#### TROGODERMA ALPICOLA Blackb.

*Trans. Roy. Soc. S. Aust.*, xiv, 1891, 124.

From the description, it is difficult to separate this species from *T. apicipenne* Reitt.; however, the pronotum is less transverse, its medial lobe longer and the oblique depressions more pronounced. A specimen from North Queensland, in the South Australian Museum, agrees well with the cotype.





Armstrong, J. W. T. 1942. "On Australian Dermestidae. Part II. The genus *Trogoderma* Berthold." *Proceedings of the Linnean Society of New South Wales* 67, 321–330.

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