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The digitalization of Acarologia papers prior to 2000 was supported by Agropolis Fondation under the reference ID 1500-024 through the « Investissements d’avenir » programme (Labex Agro: ANR-10-LABX-0001-01)

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NEW LAELAPID NASAL MITES FROM AUSTRALIAN BIRDS

BY

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SUMMARY.

Twenty-four species in seven genera of blood-sucking rhinonyssine mites are newly recorded or described from the nares of Australian birds: — Ruandanyssus terpsiphonei Fain from Struthidea cinerea (Corvidae), Coracina novaehollandiae and C. robusta (Campephagidae), Pachycephala rufiventris (Pachycephalidae) and Monarcha trivirgata (Muscipicidae); Mesonyssus belopolshkii (Bregetova) from Notophyx novaehollandiae (Ardeidae); M. melloi (de Castro) from Streptopelia chinensis ( Columbidae); M. phabitus n. sp. from Phaps chalcoptera (Columbidae); M. acyphabus n. sp. and M. columbae (Crossley) from Ocyphaps lophotes (Columbidae); M. geopeliae Fain from Geopelia humeralis (Columbidae); M. halcyonius n. sp. from Halcyon sancta (Alcedinidae); M. daceloeae n. sp. from Dacelo gigas and D. leachi (Alcedinidae); Sternostoma cooremani Fain from Dacelo gigas (Alcedinidae); S. cuculum Fain from Cacomantis pyrrhophanus (Cuculidae); S. laniorum Fain from Rhipidura leucophrys (Musicipicidae); S. thienponti Fain from Gymnorhina tibicen (Cracticidae); Rhinonyssus poliophali Fain from Podiceps ruficollis (Podicipidae); R. coniventris Trouessart and R. minutus (Bregetova) from Charadrius alexandrinus (Charadriidae); Rallinyssus gallinulae Fain from Hypotaenidia philippensis (Rallidae); Passeronyssus dicruri Fain from Chibia bracteata (Dicruridae); Ptilonyssus maluri n. sp. from Malurus melanocephalus (Sylviidae); P. estridicola Fain from Taeniopygia castanotis (Ploceidae); P. terpsiphonei Fain from Monarcha melanops, M. trivirgata and Carterornis leucotis (Musicipicidae); P. lynozemae n. sp. and P. myzomelae n. sp. from Mysomela sanguinolenta (Melipagidae); and P. cerchneis Fain from Falco berigora and F. cenchroides (Falconidae). Additional host records are given for P. motacillae Fain and P. philemoni Domrow.

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At present there are 21 species of rhinonyssine nasal mites recorded from Australian birds, comprising four species of Mesonyssoides and seventeen of Ptilonyssus (Domrow, 1964 a, b, c). In the following pages, a further 24 species are listed from Queensland, of which seven are new 1. In addition to Ptilonyssus, these

1. The holotypes and allotypes of these seven species have been lodged in the Australian National Insect Collection (C.S.I.R.O., Canberra), while the paratypes are in the Q.I.M.R. Acarologia, t. VII, fasc. 3, 1965.
species are distributed among the six genera Ruandanyssus, Mesonyssus, Sternostoma, Rhinonyssus, Rallinyssus and Passeronyssus.

Pending the revision of The Official Checklist of the Birds of Australia (RAOU, Melbourne, 1926), I have used the classification of Leach and Crosbie Morrison [1958], although their list would be reduced by over 50 species by such authorities as Mayr and Serventy (1944) and Keast (1961). The authorities for the hosts are those of the RAOU checklist.

Overseas readers should note that Australian common names for cosmopolitan birds often differ from those to which they are used, e.g. "red-capped dotterel" for Charadrius alexandrinus. This is regrettable, but these names are firmly entrenched in all three modern lists of Australian birds. Even in Australia there is considerable diversity. The ubiquitous black and white birds jumping at their reflections in the hub-caps of cars parked opposite my window are officially "magpie-
larks’, but they are also called ‘peewees’ (the name everyone here in S. E. Queensland uses), ‘peewits’, ‘pugwalls’, ‘mudlarks’ etc. And in north Queensland, a thousand miles from Brisbane, a generation of school children is growing up, who will never call them anything but ‘taxi birds’. We have Yellow Cabs in Australia too!

_Ruandanyssus terpsiphonei_ Fain (Figs. 1-7).


This species, described from a muscicapid and a campephagid in Africa, may now be recorded from Australia—1 ♀ from the apostle-bird, _Struthidea cinerea_ Gould (Corvidae, Passeriformes), Condamine, 6.vii.1963; 8 ♀♀ and 3 ♂♂ from the black-faced and little cuckoo-shrikes, _Coracina novaehollandiae_ (Gmelin) and _C. robusta_ (Latham) (Campephagidae, Passeriformes), Esk, 8.ii. and 16.v.1964;

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_Figs. 3-4._ — _Ruandanyssus terpsiphonei_ Fain. — 3, Dorsum ♀ (with peritreme folded under podosomal shield, and several setae omitted from the dorsal series); 4, Venter ♀.
15 ♂♂, 5 ♂ and 3 nymphs from the rufous whistler, *Pachycephala rufiventris* (Latham) (Pachycephalidae, Passeriformes), Esk, 2.v.1964 and Mt. Jukes, near Mackay, vi.1964; and 1 ♀ and 1 deutonymph from the spectacled flycatcher, *Monarcha trivirgata* (Temminck) (Muscicapidae, Passeriformes), Mt. Jukes, vi.1964.

**Figs. 5-7.** — *Ruandanyssus terpsiphonei* Fain. — 5, Gnathosoma ♀ (dorsal); 6, Gnathosoma ♀ (ventral); 7, Chelicerae ♂.

*Mesonyssus belopolskii* (Bregetova).


*Neonyssus marcandrei* Gretilat, Capron and Brygeo, 1959, Acarologia 1: 379.


This species, recorded from herons in Russia, Africa and the United States, may now be listed from Australia—9 ♀♀, 8 ♂♂ and two protonymphs from the
white-faced heron, Notophoyx novahollandiae (Latham) (Ardeidae, Ciconiiformes), Esk, 7.iii. and 2.v.1964.

Mesonyssus melloi (de Castro).


This species, originally described from the domestic pigeon in Brazil, has since been recorded from several species of Streptopelia in Africa. Specimens quite typical of de CASTRO's illustrations may now be recorded from Australia as follows- 17 ♀♀, 2 ♂♂ and 4 nymphs from the introduced Indian turtle-dove, Streptopelia

*Mesonyssus phabus* n. sp. (Figs. 14-15, 18-21).

**Diagnosis.** — Of the species of *Mesonyssus* from doves and pigeons treated by Fain (1962 a, 1963 b), *M. phabus* keys out near *M. melloi* (de Castro), sharing the following characters—opisthosomal shield trapezoidal, longer than wide; all tarsal claws subequal; postanal seta present. However, *M. phabus* is easily separable from de Castro’s species by its distinctive leg setation (basally expanded setae...
on all legs, and peg-like setae on legs I and II), and very long postanal seta.

The leg setation of *M. phabus* also recalls that of the holotype of another congener from a Brazilian dove (*Oreopeleia*) figured and described by DO AMARAL (1963) as *Neonyssus castroae*, but the ventral setation easily separates the two species.

**Fig. 13.** *Mesonyssus ocyphabus* n. sp. — Venter ♂.

**Figs. 14-15.** *Mesonyssus phabus* n. sp. — 14, Gnathosoma ♀ (ventral); 15, Tarsus III ♀ (ventral).

**Figs. 16-17.** *Mesonyssus geopeliae* Fain. — 16, Tarsus I ♀ (external); 17, Tarsus III ♀ (ventral).
(The paratypes figured from Leptoptila, another Brazilian dove, do not appear to be conspecific with the holotype.)

Types. — Holotype female, allotype male and two paratype females from the common bronzewing, Phaps chalcoptera (Latham) (Columbidae, Columbiformes), Esk, 8.ii.1964.

Female. — Idiosoma 682-715 μ long. Proportions and texture of podosomal and opisthosomal shields as in M. geopeliae Fain. Setal pattern, especially on podosomal shield, very difficult to discern, but essentially as figured. Cuticular setation and stigmatic complex as in M. geopeliae.

Venter. Sternal shield ill-defined, but slightly granulate, and with weak scalation. Remainder of intercoxal structures as in M. geopeliae. Anal shield elongate, arched anteriorly and almost parallel-sided. Anus set in anterior half, preceded by small adanal setae, and followed by elongate postanal seta; cribrum distinct. Ventral cuticle with three pairs of shorter, and about five pairs of much stronger setae.

Legs. Coxal formula 2.2.2.1. One seta on each coxa greatly expanded and hyaline basally, with distinct terminal filament. Remaining seta on coxa I small, slender. Posterior seta on coxae II and III comparable to posterior ventral setae. All coxae, especially II-IV, with crescentic marking discally. Leg setation (ventral surface) comparable to that on coxae, with additional strong, peg-like setae on femora-genua I and femora-basitarsi II. Setae on dorsal surface of legs minute. Tarsus I with dorsodistal sensory zone. All claws subequal, with similar stalks and pulvilli.

Gnathosoma as in M. geopeliae, but palpal trochanters stouter. Chelate portion of chelicerae occupying one-quarter of total length.

Male. — Idiosoma 583 μ long. Essentially similar to female, but genital shield broader and chelate portion of chelicerae occupying one-third of total length. Genital aperture well in front of SI.

Mesonyssus ocyphabus n. sp. (Figs. 8-13).

Diagnosis. — FAIN (1962 a) divides the species of Mesonyssus parasitic in columbids into two main groups. The first, with a broad opisthosomal shield, is the zenaidurae group, and the second is subdivided into a melloi group with subequal tarsal claws and the postanal seta present, and a more specialized columbae group with heavy claws on tarsus I and the postanal seta absent. However, M. treronis (Fain), which is keyed out in the zenaidurae group, appears to show the characters diagnostic of the columbae group, while the subsequently described M. oenae FAIN (1963 b) is said to bridge the gap between the zenaidurae and melloi groups. M. ocyphabus, if only by a process of elimination, seems nearest to M. oenae Fain,
but differs in having the opisthosomal shield encroaching onto the venter in un-engorged specimens, an anteriorly rounded anal shield with the adanal setae twice as strong as the postanal, very unequal setae on coxae I-III, and (weak) crescentic markings on coxae II-IV. (However, populations of *M. melloi* (de Castro) from various species of *Streptopelia* may or may not show these crescents, see FAIN, 1962 a).


*Types.* — Holotype female and three paratype females from the crested pigeon, *Ocyphaps lophotes* (Temminck) (Columbidae, Columbiformes), Condamine, 5.vii.1963. Allotype male, three males and five females from *O. lophotes*, Samford, 24.i.1964 (a series largely overcleared in an experiment with caustic potash in general, I find clearing in warm lactic acid preferable, despite the occasional cuticular exfoliation on over-heating).
Female. — Idiosoma of fed specimens normally about 510 μ long, but from 540-580 μ in rather flattened mounts; 450 μ in one unengorged specimen. Podosomal shield as in \textit{M. geopeliae} Fain but slightly sinuous anteriorly. Opisthosomal shield very nearly as wide as podosomal shield, rather wider than long, with maximum width just behind centre; narrower in posterior third. Texture as in \textit{M. geopeliae}. Arrangement of setae very clear, podosomal shield with six pairs discally, and opisthosomal shield with four pairs, as figured. Marginal cuticle with about six pairs of setae, pair near posterolateral margins of opisthosomal shield not enlarged. Stigmatic complex as in \textit{M. geopeliae}.

Venter. Sternal shield virtually absent, textureless. Remainder of intercoxal structures as in \textit{M. geopeliae}. Anal shield quite rounded anteriorly, with anus centrally placed. Adanal setae set in front of anus, twice as strong as postanal
seta; cribrum present. Ventral cuticle with about ten pairs of setae, some rather stronger than others.

Legs. Coxae as in *M. geopeliae*, but ornamentation reduced to weak crescentic marking. Leg setation, claws and pulvilli as in *M. geopeliae*.

Gnathosoma as in *M. geopeliae*, but palpal trochanter slightly stouter.

Male. — Idiosoma 430 μ long in three specimens. Essentially as in female, but disc of genital shield punctate, with muscle insertions strongly marked. Genital aperture well in front of SI.

*Mesyonyssus columbae* (Crossley).


Mites typical of Crossley's detailed description of specimens from domestic pigeons may now be recorded from Australia- 4 ♀♀ from the crested pigeon, *Ocyphaps lophotes* (Temminck) (Columbidae, Columbiformes), Esk, 2.v.1964.

*Mesyonyssus geopeliae* Fain (Figs. 16-17, 22-25).


I had already chosen the same specific name for this species in the original draft of this manuscript, and am most grateful to Dr. A. Fain for pointing out to me that he too had the same species — "... I notice that you have described a *Mesonyssus geopeliae*. I am sorry but I have in press to appear in Sept. a species with the same name. I found it in *Geopelia striata* in Malaya... Your description agrees rather well with my species except a few minor differences and it is probably identical." Both because of the differences detected by Fain, and because the two other new species from columbids have been described in comparison with *M. geopeliae*, its description has been retained in the final manuscript.

When compared with the other species of *Mesonyssus* described from columbids, and treated by Fain (1962 a, 1963 b), *M. geopeliae*, lacking the postanal seta and possessing unusually heavy claws on tarsus I, keys out near *M. columbae* (Crossley), although *M. treronis* (Fain) also appears to show the same characteristics. However, *M. geopeliae* is separable (i) from *M. columbae* by its heavy, elongate anal and ventral setae, and its strong coxal ornamentation; and (ii) from *M. treronis* by its much narrower opisthosomal shield (which never encroaches onto the venter, even in relatively unengorged specimens), and distinct cribrum.

I have examined four females from the bar-shouldered dove, *Geopelia humeralis* (Temminck) (Columbidae, Columbiformes), Samford, 21. and 24.i.1964.

Female. — Idiosoma 480-520 μ long, slightly narrower in posterior half, especially if only partially engorged. Podosomal shield wider than long, broadly
arched in anterior half, irregularly eroded posterolaterally, and rectilinear posteri­orly. Setal pattern fairly easy to discern, with five pairs set discally, and two pairs sub-marginally. Opisthosomal shield narrower than podosomal shield, longer than wide, and narrower in posterior third; with three pairs of setae arranged as figured, those on anterior margin rather stronger, and sometimes just off shield. Both shields heavily punctate except for narrow marginal strip, with superimposed

subhexagonal reticulation, which reaches to extreme edge of shield. Dorsal body cuticle with one or two pairs of setae near stigmata, and three or four pairs beside opisthosomal shield (pair nearest shield much the strongest). Stigmata provided with short peritremes and poststigmatic shields.

Venter. Sternal shield ill-defined, textureless, without pores, but with six submarginal sternal setae. Six subdermal sclerotizations present, apparently

Figs. 22-23. — *Mesonyssus geopeliae* Fain. — 22, Dorsum ♀; 23, Gnathosoma ♀ (ventral)
representing remnants of angles of sternal shield. Metasternal complex absent. Genital shield rather narrow, not reaching posterior margin of coxae IV, striate-punctate, marked by muscle insertions, and with rayed operculum; flanked by two genital setae. Anal shield elongate oval, with anterolateral margins more strongly sclerotized. Anus posteriorly set, preceded by two strong adanal setae, and followed by distinct cribrum, which extends onto dorsal surface in all four specimens. Ventral cuticle with five or six pairs of strong, basally thickened setae, and one much shorter pair both anteriorly and posteriorly.

Legs. Coxal formula 2.2.2.1, setae in posterior angles of coxae I-III much stronger than remainder and comparable to ventral setae. Coxae II-IV discally with distinct rounded processes. Setae on ventral surface of legs rather similar.
to coxal setae, but dorsal setae minute. Tarsus I somewhat attenuate in distal two-thirds, with dorsodistal sensory zone. Tarsi II-IV without stronger ventro-distal spines. Claws I much stronger than II-IV, set on shorter, stouter stalks, and with less extensive diaphanous pulvilli.

Gnathosoma. Tritosternum and deutosternum absent. Gnathobase with one pair, and hypostome with three pairs of small blunt setae. Palpi with five free segments; trochanter rather slender. Tibia with two dorsodistal rods, obscuring tarsus dorsally. Tarsus with one longer seta; without claw. Chelicerae of uniform diameter; chelae unarmed, occupying almost one-third of total length.

Mesonyssus halcyonus n. sp. 1 (Figs. 26-30).

Diagnosis. — See that given for M. daceloae n. sp. M. halcyonus may be separated from the two African species from Halcyon by the absence of a middorsal hump, and the presence of four large middorsal setae and two pairs of setae on the sternal plate. In M. zumpti Fain, at least, the male sternogenital shield is much more reduced than in M. halcyonus. In addition to the characters just discussed, M. halcyonus is separable from M. daceloae by its heavy tarsal claws, which do not taper at all in their distal half.

Types. — Holotype female, allotype male, nine paratype females and eight paratype males (together with three females and six nymphs) from the sacred kingfisher, Halcyon sancta Vigors and Horsfield (Alcedinidae, Coraciiformes), Logan Village, 23.II.1963.

Also one male, H. sancta, Brisbane, 6.II.1964.

Female. — Idiosoma 630 µ long. Podosomal shield slightly wider than long, rather narrower anteriorly. Anterior margin concave, lateral margins angularly and irregularly convex, posterior margin evenly and shallowly convex. Shield well sclerotized, punctate, marked sublaterally by two groups of three anteriorly converging zones of muscle insertions, and centrally by one circular zone. Five pairs of weak, and one pair of strong setae present on shield. Middorsum with two zones of muscle insertions; without any trace of hump. Cuticle with four pairs of setae, the central two pairs very strong. Stigmata and peritremes as in M. daceloae, but surrounded by very weak peritremal shield.

Venter. Sternal shield subquadrate, well defined and punctate, bearing SI and SII. SIII free in cuticle; metasternal complex absent. Genital complex as in M. daceloae. Anal shield often extending onto dorsum, with strong adanal setae in front of anus; postanal seta present, only slightly weaker; cribrum present. Venter with about eight stoutly based setae arranged 2.4.2.

1. From the unaspirated "uxtaposition", but I retain the "h" because Halcyon and Alcyone, each a genus of kingfishers, occur side by side along streams in S. E. Queensland.

Legs. Coxal formula 2.2.2.1, setae slightly expanded basally, especially on II-IV. Leg setation as in *M. daceloae*. Tarsus I with dorsodistal sensory zone. Claws I-IV subequal, of uniform diameter throughout their length, spatulate distally. Stalk stout and pulvillus rounded.

Gnathosoma. Tritosternum absent, but quite well defined deutosternum with several rows of minute denticles present. All gnathosomal and hypostomal setae subequal, except minute outer posterior hypostomals. Palpi with five free segments. Tibiae and tarsi essentially as in *M. daceloae*, but setae on tarsus uniformly short. Chelate portion of chelicerae occupying one-fifth of total length.

Male. — Idiosoma 530-560 μ long. Dorsum as in female. Venter as in female except that genital aperture is in front of SI. Legs as in female. Gnathosoma as in female, but chelate portion of chelicerae occupying one-quarter of total length.

Figs. 26-27. — *Mesonyssus halcyonus* n. sp. — 26, Dorsum ♀; 27, Venter ♀.
Figs. 28-30. — *Mesonyssus halcyonus* n. sp. — 28, Venter ♂; 29, Tarsus III ♂ (ventral); 30, Gnathosoma ♀ (ventral).

**Mesonyssus daceloae** n. sp. (Figs. 31-38).

*Diagnosis.* — Two species of *Mesonyssus* have been described from kingfishers, both from *Halcyon* in Africa, namely *M. schoutedeni* (Fain) and *M. zumpti* Fain (see Fain, 1957, 1960a). *M. daceloae* may be separated from both by the absence of a middorsal hump, the postanal seta and deutosternal denticles. Differences are also shown in the pattern of muscle insertions on the shields and the degree of sclerotization on the sternal shield. In *M. zumpti*, at least, the male sternogenital shield is much more reduced than in *M. daceloae*.

*Types.* — Holotype female, allotype male, five paratype females and three paratype males (together with five females and eight nymphs) from the laughing kookaburra, *Dacelo gigas* (Boddaert) (Alcedinidae, Coraciiformes), Samford, 25.x. 1963.

Also 7 ♀♀, 1 ♂ and 1 nymph from the blue-winged kookaburra, *D. leachi* Vigors and Horsfield, *Chelona*, near Sarina, vi.1964.

**Female.** — Idiosoma c. 825 μ long. Podosomal shield slightly longer than wide, with anterior margin arched and lateral margins fairly straight, yet with many small irregularities. Posterior margin very irregular, sometimes with two fenestrations, which may even occasionally be open. Thus only pair of setae (mid-

posteriors) may be set on shield, in fenestrations or free in cuticle. Shield well sclerotized, strongly punctate and marked by large areas of muscle insertions both in anterior half and posterolateral corners; surrounded by numerous pores and small plaques, in some of which appears to be set a minute seta. Middorsum with two zones of muscle insertions; without trace of hump either in fresh of mounted specimens. Cuticle with perhaps five pairs of short setae. Stigmata provided with short peritremes, but without associated shieldlets.
Venter. Sternal shield well sclerotized, punctate, with definite (but irregular) outline, especially anteriorly, where it may be fenestrated or fragmented. SI submarginal, but SII and III free in cuticle. Sternal pores and metasternal complex absent. Genital shield irregularly drop-shaped, punctate, with irregular striae and muscle insertions; operculum weakly rayed. Genital setae lacking, but attendant pores present. Anal shield irregularly pear-shaped, more heavily sclerotized laterally. Anus set in anterior half, with adanal setae set level with its centre. Postanal seta absent; cribrum present. Ventral cuticle with six setae arranged 2-4.

Legs. Coxal formula 2.2.2.1, all setae slenderly tapering. Somewhat similar setae appear on all legs, together with small cone-like setae. Tarsus I with dorso-distal sensory zone. Claws I of uniform diameter and straight throughout most of their length, but pointed and curved through 90° distally; with elongate stalk and pulvillus. Claws II-IV much more heavily scleritized, tapering throughout.
their length to definite point, and abruptly turned through almost 180°; with stout stalk and rounded pulvillus.

Gnathosoma. Tritosternum and deutosternum absent. Gnathobase with two strong setae subequal to inner posterior hypostomals. Anterior hypostomals smaller, and outer posteriors minute. Palpi with five free segments. Tibia with two dorsodistal rods. Tarsus not obscured dorsally by tibia, with one longer seta; claw apparently absent. Chelate portion of chelicerae occupying one-fifth of total length.

Male. — Length of idiosoma 740-770 μ. Dorsum as in female. Sternal shield well defined, with SI (and sometimes SII) on shield. SIII and metasternal complex as in female. Genital shield an irregular fragment, with genital setae absent, but flanked by two pores. Genital aperture just in front of SI. Remainder of venter as in female. Legs as in female. Gnathosoma as in female, but chelate portion of chelicerae occupying one-third of total length.

*Sternostoma cooremansi* Fain.


This species was originally described from coraciiform birds in Africa and Malaya-Merops (Meropidae) and Halcyon (Alcedinidae), respectively. The first Australian record comprises 22 ♀♂ from the laughing kookaburra, Dacelo gigas (Boddaert) (Alcedinidae, Coraciiformes), Condamine, 13.vi.1963.

Sternostoma cuculorum Fain.


This species, originally described from several African cuckoos, may now be recorded from Australia as follows- 4 ♀♂ from the fan-tailed cuckoo, Cacomantis pyrrhophanus (Vieillot) (Cuculidae, Cuculiformes), Esk., 16.v.1964.

Sternostoma laniorum Fain.


This species, described from laniids, muscicapids and turdids in Africa and Thailand, may now be recorded from Australia as follows- 5 ♀♂ (with blunt tarsal setae) from the willie wagtail, Rhipidura leucophrys (Latham) (Muscicapidae, Passeriformes), Esk, 21.iii.1964.

Sternostoma thienponti Fain.


Specimens typical of this species, originally described from African and Thai drongos (Dicruridae, Passeriformes), may now be recorded from Australia- 18 ♀♂ from the black-backed magpie, Gymnorhina tibicen (Latham) (Cracticidae, Passeriformes), Condamine, 13.vi.1963.¹

¹ Sternostoma tracheacolum Lawrence, 1948 (J. Parasit. 34 : 366), a widespread parasite of a variety of birds, and the cause of severe inflammation of the respiratory organs, especially in canaries, has been recorded from two Australian birds- the budgerygah, Melopsittacus undulatus (Shaw) (Psittacidae, Psittaciformes) and the Gouldian finch, Poephila gouldiae (Gould) (Ploceidae, Passeriformes). The former birds died in the Antwerp Zoo, having been reared there; the latter were obtained from a breeder of German roller canaries in South Africa (see Fain and Hyland, 1962). Both these cases may easily have been cross-infestations, and the mite is therefore not yet considered a member of the Australian fauna.
Rhinonyssus poliocephali Fain.


This species, recorded on several occasions from the little grebe, Podiceps ruficollis (Vroeg) (Podicipidae, Podicipiformes), in Africa, may now be recorded from the same host in Australia: 3 ♀, one ♂ and one nymph, Esk, 16.v.1964.

Rhinonyssus coniventris Trouessart.


Rhinonyssus echinipes Hirst, 1921, loc. cit. 359.

Rhinonyssus neglectus Hirst, 1921, loc. cit. 359.


This widespread parasite of numerous shore birds may now be recorded from Australia: 1 ♀, 1 ♂ and 1 nymph from the red-capped dotterel, Charadrius alexandrinus Linné (Charadriidae, Charadriiformes), Half Tide, near Sarina, vi.1964. Both adults showed the cone-like opisthosoma clearly in life, and their podosomal shield is fragmented exactly as in Fain’s fig. 4.

Rhinonyssus minutus (Bregetova).


Rhinonyssus minutus, Fain, 1961, Acarologia 3: 514.

This species, described from Charadrius in Eurasia, may now be recorded from Australia: 1 ♂ with collection data as for R. coniventris, the preceding species.

Rallinyssus gallinulae Fain.


At the time of Fain’s (1960 b) revision, nasal mites had been recorded from rail-like birds in the United States, Africa and Europe. Additional records and species have since been listed from Europe (Gretillat, 1961; Fain, 1962 b, 1963 a), Brazil (Do Amaral, 1962) and Malaya (Fain and Nadchatram, 1962).

R. gallinulae, a parasite of the European moorhen (houle d’eau) may now be recorded from Australia: 3 ♀♀ and 2 ♂♂ from the banded landrail, Hypotaenidia philippensis (Linné) (Rallidae, Gruiformes), Innisfail, 10.ix.1957, M. L. Emanuel.

This bird had, after brief initial fixation in formalin, been stored dry. On
opening its beak in January, 1964, over six years later, I found the mites quite recognizable, and easily shaken out onto a sheet of paper. After overnight softening in lactophenol, gentle heating in 10% caustic potash and dealkalinization, the specimens mounted quite satisfactorily into Hoyer’s medium, and are confidently assigned to Fain’s species.

Passeronyssus dicruri (Fain).


*Ptilonyssoides faini* Strandtmann, 1960, J. Kansas ent. Soc. 33 : 142.

This species, recorded from drongos in Africa and Borneo, may now be listed from Australia—26 ♀, 2 ♂ and two nymphs from the spangled drongo, *Chibia bracteata* (Gould) (Dicuridae, Passeriformes), Samford, 25.X.1963 and Esk, 7.iii.1964.

My specimens seem to bridge the gap between Fain’s and Strandtmann’s species, showing the following features—podosomal shield usually almost rectilinear posteriorly (but sometimes slightly biconcave), with six pairs of setae arranged as in Strandtmann’s fig. 41; middorsal shield with four (occasionally three) setae; pygidial shield often with one seta rather than two; genital setae usually on shield, but occasionally one, or even both free in cuticle; setae on coxae I as in Strandtmann’s fig. 37.

*Ptilonyssus maluri* n. sp. (Figs. 39-40, 50).

Diagnosis. — Of the species of *Ptilonyssus* with the opisthosomal shield not reduced and metasternal setae present, *P. maluri* and *P. carduelis* Fain (1962 b) ¹ are the only two with the podosomal shield parallel-sided. However, the new species, lacking the four decidedly longer antero- and posterolateral setae on the podosomal shield, is easily separated thereby from Fain’s.

Types. — Holotype female and allotype male from the red-backed wren, *Malurus melanochephalus* (Latham) (Sylviidae, Passeriformes), Esk, 7.iii.1964.

Female. — Idiosoma 693 long in mounted specimen. Podosomal shield much longer than broad, parallel-sided, with both anterior and posterior margins trilobed; with nine pairs of setae arranged as figured. Middorsum with two areas of muscle insertions. Opisthosomal shield with anterior margin sinuous, wider in anterior half and tapered posteriorly; with three pairs of setae on disc, and two pygidial setae terminally. Cuticle with about nine pairs of setae arranged as figured. Dorsal shields minutely granulate, with muscle insertions indistinct, but with

¹. Both hosts of *P. carduelis*, the goldfinch, *Carduelis carduelis* (Linné), and the greenfinch, *Chloris chloris* (Linné) (Fringillidae, Passeriformes), are introduced and now well established in S. E. Australia.
definite pattern of subhexagonal reticulations. All dorsal setae (except pygidials) short, blunt and rod-like. Stigmata provided with short peritremes and definite poststigmatic shields.

Venter. Sternal shield well defined except posteriorly, minutely granulate and bearing six setae and two pores. Metasternal setae set in striate cuticle. Genital shield fairly broadly drop-shaped, minutely granulate, with distinct

\[ \lambda \text{-shaped discal thickening and rayed operculum. Genital setae set on shield.} \]

Anal shield arched anteriorly, tapering evenly to cribrum posteriorly; lateral margins more strongly sclerotized. Anus set well forward, with adanal setae near its anterior margin. Postanal seta smaller, set well back from anus. Ventral cuticle with twelve setae arranged 2.4.4.2. Setae on venter all similar to dorsal setae.

Figs. 39-40. — Ptilonyssus maluri n. sp. — 39, Dorsum ♂; 40, Venter ♀.
Coxal formula 2.2.2.1, all setae similar to dorsal setae, as is, in general, remainder of leg setation, although some dorsal and distal setae are stronger and more tapering. Coxa II without process on anterodorsal margin; genu III without modified setae dorsally. Tarsus I with dorsodistal sensory zone. All ambulacra with subequal, unmodified claws.

Gnathosoma. Tritosternum absent. Deutosternum present, with about six denticles in single file. Gnathosomal setae present, but weak. Only merest indications of anterior and outer posterior hypostomal setae present, but inner posteriors similar to gnathosomal pair. Palpi with five free segments. Tibia with two elongate dorsodistal rods. Tarsus obscured dorsally by tibia, apparently without claw. Chelicerae with shafts only gradually tapering; chelate portion larger than usual, occupying almost one-eight of total length.

Male. — Idiosoma 550 μ long in mounted specimen. Dorsum as in female. Venter as in female, but with genital aperture in front of SI. Arrangement of shields exactly as in *P.icteridius* (S. and F.) (see Strandtmann and Furman, 1956). Legs as in female. Gnathosomal as in female, but movable digit of chelicera with spermatophore-carrier. Chelate portion occupying almost one-third of total length.

_Ptilonyssus estrildicola_ Fain.


I have not myself taken this species, originally described by Fain from various ploceids in Africa. However, his latter specimens are from the zebra finch, *Taeniopygia castanotis* (Gould) (Ploceidae, Passeriformes), dying in Antwerp shortly after their importation from Australia, and are included here for the record.

_Ptilonyssus terpsiphonei_ Fain.


This species, described from African flycatchers, may now be recorded from Australia- 8 ♀♀ and 2 protonymphs from the black-faced, spectacled and white-eared flycatchers, *Monarcha melanopsis* (Vieillot), *M. trivirgata* (Temminck) and *Carterornis leucotis* (Gould) (Muscicapidae, Passeriformes), dying in Antwerp shortly after their importation from Australia, and are included here for the record.

_Ptilonyssus ly佐zemae_ n. sp. (Figs. 43-44, 46-47).

Diagnosis. — In _P. ly佐zemae_, the anus is set in front of the adanal setae as in _P. myzovulae_ n. sp., and both species occur together in the same host. However
they may easily be separated by the shape and setation of the podosomal shield, and the shape of the ventrodistal spurs on tarsi II-IV. Specimens of *P. lymozemae* do not show the very narrow podosomal shield (with only six setae) characteristic of *P. meliphagae* Domrow (1964c), nor do they assume, when fully engorged, the bizarre shape of the latter species.

*P. lymozemae* also resembles *P. phyllocopti* Fain (1962b), but only superficially. The latter species is a parasite of a sylviid (Passeriformes), and shows a short, broad genital shield, which bears the genital setae.
Types. — Holotype female, six paratype females and one protonymph from the scarlet honeyeater, *Myzomela sanguinolenta* (Latham) (Meliphagidae, Passeriformes), Samford, 25.x.1963.


Female. — Idiosoma elongate, of fairly uniform diameter except for two slight midlateral humps when engorged. Two unengorged specimens measure 605 and 616 μ long; engorged specimens range from 970-1070 μ long. Podosomal shield longer than wide, slightly narrower posteriorly, and with lateral margins sinuous and convex. Surface punctate except for narrow marginal strip, marked by muscle insertions; with eight pairs of setae and one pair of pores arranged as figured. Shield flanked posteriorly by one pair, and laterally by five pairs of stronger setae. Middorsum apparently without muscle insertions, but with ten setae arranged as in *P. myzomelae*. Posterior half of dorsum with circle of ten setae arranged 6.4. Pygidial shield obsolescent, represented by two fragments each bearing pores and spinose seta as figured. Peritremes as in *P. myzomelae*, but poststigmatic shield much weaker.

Venter. Sternal and metasternal complexes as in *P. myzomelae*, but former shield textureless. Genital and anal shields as in *P. myzomelae*. Ventral cuticle with about sixteen setae arranged 2.6.8.

Legs essentially as in *P. myzomelae*, but ventrodistal spurs on tarsi II-IV evenly tapering and not heavily sclerotized.

Gnathosoma. Minute tritosternal remnant present. Deutosternum with about ten denticles in single file. Setation of gnathobase and hypostome as in *P. myzomelae*. Palpi as in *P. myzomelae*. Chelicerae suddenly attenuate in apical three-fifths; chelate portion occupying one-twentieth of total length.

Protonymph. — Idiosoma 725 μ long in somewhat flattened specimen. Very similar to female except for absence of genital shield. Pygidial complex as in female, but pygidial setae minutely barbed, and very considerably longer.

*Ptilonyssus myzomelae* n. sp. (Figs. 41-42, 48-49).

Diagnosis. — Fain (1957) lists a group of five species of *Ptilonyssus* with the pygidial shield absent, but *P. myzomelae* seems unrelated to any of them. Among the parasites of the honeyeaters, a family almost exclusively Australasian, the condition of the pygidial shield seems quite secondary, being entire, divided, obsolescent or absent. In seeking a relationship with the species already known from meliphagids (Domrow, 1964 c), and ignoring the pygidial shield, *P. myzomelae* shares with *P. meliphagae* Domrow the following characters- adanal setae behind anus and coxae II with strong process on anterodorsal margin. However, the two species differ decidedly in the shape and setation of the podosomal and anal shields, as well as in the body contours when engorged.
Types. — Holotype female and three paratype females from the scarlet honeyeater, *Myzomela sanguinolenta* (Latham) (Meliphagidae, Passeriformes), Samford, 25.x.1963.

Female. — Idiosoma elongate, 1070-1190 μ long, of fairly uniform thickness except for two midlateral humps in engorged specimens. Podosomal shield longer than wide, slightly wider anteriorly than posteriorly, with both anterior and posterior

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Figs. 41-42. — *Ptilonyssus myzomelae* n. sp. — 41, Dorsum ♀; 42, Venter ♀.
margins slightly concave. Lateral margins sinuous, with semicircular convexity centrally. Surface strongly punctate except for narrow marginal strip, marked by muscle insertions which are particularly strong subposteriorly; with six pairs of small spinose setae laterally and three pairs of pores in anteromedian line. Shield flanked by four or five pairs of slightly stronger setae. Middorsum with two areas of muscle insertions, with ten setae arranged in transverse oval just behind them. Posterior body cuticle with row of five or six setae. Pygidial shield entirely absent, leaving two stout pygidial setae free in cuticle. Stigmata and short peritremes surrounded by weak, oval peritremal shieldlet, and immediately followed by strongly sclerotized poststigmatic shield.

Venter. Sternal shield elongate, weakly defined (yet slightly granulate), bearing four pores and flanked by six sternal setae. Metasternal complex absent. Genital shield striate-punctate, with weak muscle insertions and rayed operculum; flanked subposteriorly by two genital setae. Anal shield slightly elongate, with anus well forward, in front of all three subequal anal setae; cribrum present. Ventral body cuticle with about twelve setae arranged 2.4.6.

Legs. Coxal formula 2.2.2.1, all setae slenderly tapering. Coxae II with particularly strong process on anterodorsal margin. Leg setae generally similar to coxal setae, but stronger ventrally and weaker dorsally. Tarsus I with dorso-distal sensory zone. Setae on dorsum of genu III normal. Tarsi II-IV with two strongly sclerotized spurs ventrodistally, which are quite thick basally, but much narrower, with divergent hooks apically. Claws I weaker than II-IV, but of same general shape, all surrounded by diaphanous pulvillus.

Gnathosoma. Tritosternum absent. Deutosternum with about seven denticles in single file. Gnathobase with two setae discally, and small blunt process ventrally on anterolateral angles. Hypostome with three pairs of setae, the anterior and outer posterior pairs weak. Palpi with five free segments. Inner distal angle of trochanter salient ventrally as in *P. motacillae* Fain, but only very slightly so. Tibia with two dorsodistal rods. Tarsus obscured dorsally by tibia, apparently without claw. Chelicerae suddenly attenuate in distal two-thirds; chelate portion occupying one-thirtieth of total length.

*Ptilonyssus cercheis* Fain.


The species, recorded from hawks in Africa and the United States, may now be listed from Australia—1♀ from the brown hawk, *Falco berigora* Vigors and Horsfield (Falconidae, Falconiformes), Esk, 8.ii.1964.

Unfortunately, the mount exploded while being heated, and only the characteristic elongate anal shield, with its two adanal setae and extensive cribrum, remains.
Fig. 45. — *Ptilonyssus* sp. from *Melipha ga chrysops* (Latham), to be treated in subsequent paper. Gnathosoma ♀ (ventral).

Figs. 46-47. — *Ptilonyssus tymozemae* n. sp. — 46, Gnathosoma ♀ (ventral, with insert of tritosternal remnant); 47, Tarsus III ♀ (ventral).

Figs. 48-49. — *Ptilonyssus myzomelae* n. sp. — 48, Gnathosoma ♀ (ventral); 49, Tarsus III ♀ (ventral).

Fig. 50. — *Ptilonyssus maluri* n. sp. — Gnathosoma ♀ (ventral, with insert of chelicera ♀).
However, the characteristic podosomal shield with extended and areolate posteralateral angles, the middorsal hump, the rather broad gnathobase and longish palpal setae were all noted prior to the accident. I am therefore confident of the record.

Since writing this, I have seen 12 ♀♀ and 3 protonymphs from the nankeen kestrel, *F. cenchroides* Vigors and Horsfield, Mt. Jukes, near Mackay, vi.1964.

**Acknowledgements.**

Drs. R. W. Stranbtmann and A. Fain commented helpfully on many of the species treated above, and Dr. Fain loaned me a specimen of *Mesonyssus schoutedeni*. Miss H. I. McDonald, Messrs. G. J. Barrow, R. G. Rees, I. D. Fanning and J. S. Welch assisted me, and were my companions, in the field, while the latter two pencilled many of the illustrations. The late Mr. G. Mack and Mr. J. T. Woods identified many birds, and Miss B. Nolan prepared the manuscript from my longhand draft. I am most grateful to them all.

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ADDENDA.

The following two new Australian host records should be noted.


Ptilonyssus philemoni Domrow, 1964, Acarologia 6 : 600- five females from the little friar-bird, Philemon citreogularis (Gould) (Meliphagidae, Passeriformes), Samford, 21.i.1964, Brisbane, 31.i.1964 and Esk, 7.iii.1964.