1932, B. M. Hobby & A. W. Moore. Allotype ♀ (BMNH), same locality, 12. IX. 1932, Hobby & Moore. Paratypes: 4 ♂♂ taken at type locality, 21. VIII—1. X. 1632; 1♀ collected by Hobby & Moore at Long Miwah, Mt. Kalulong, 2. XI. 1932 (BMNH, BISHOP, and author's coll.)

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NEW RECORDS AND DESCRIPTIONS OF RHINONYSSIDAE, MOSTLY FROM NEW GUINEA

(Acarina: Mesostigmata)[1]

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Abstract: The genus *Mesonyssoides* Fain & Nadchatram is synonymized with *Mesonyssus* Fain and the following 7 new species of *Mesonyssus* are described from New Guinea: *epileus* n. sp., *gourae* n. sp., *tetae* n. sp., *ptilinopi* n. sp., *alisteri* n. sp., *neopsittaci* n. sp. and *domicellae* n. sp. Records are given for 13 other species from New Guinea, Hawaii and North America. Keys to the species of *Mesonyssus* from Falconiformes, Columbiformes and Psittaciformes are presented.

The nasal mites of birds have been known since 1871 and in recent years have received increased attention from workers in many parts of the world. Despite the increased interest in this group of parasites there are still many groups of birds and faunal areas which have not been studied. One such area is New Guinea which has had only one species of nasal mite, *Ptilonyssus novaeguineae* (Hirst), described from its rich avifauna.

In 1962 several months were spent in West New Guinea collecting ectoparasites, including avian nasal mites (Wilson, 1964). Since then Bishop Museum field associates have continued to sample the avifauna and as a result a large collection of nasal mites are at hand from this region. This paper lists several new records and species from New Guinea, some new records from North America, and the first records from Hawaii.

The holotypes are deposited in the acarology collection of Bishop Museum. Paratypes, insofar as they were available, have been deposited in the collections of Dr. R. W. Strandtmann and the United States National Museum. The measurements given first are the mean

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followed by the maximum and minimum in parentheses. The scientific and common names of the North American birds follows the 5th edition of the American Ornithologists' Union checklist (1957). Peters (1937) has been used for the scientific names and various regional publications (see References) for the common names of those species not occurring in North America. Unfortunately not all of the hosts were identified at the time this paper went to press and these will have to be listed in later papers.

Acknowledgment is extended to Dr. R. W. Strandtmann for critical review of parts of the manuscript and to Mrs. Sharon Burmeister for executing the excellent drawings.

Genus **Mesonyssus** Fain

Domrow (1964) has summarized the status of the genera *Mesonyssoides* Fain & Nadchatram and *Mesonyssoides* Strandtmann & Clifford and in a footnote indicated that *Psittanyssus* Fain was congeneric with those species of *Mesonyssoides* which he was describing from psittaciform birds. In addition I consider *Mesonyssoides* Fain & Nadchatram a synonym of *Mesonyssus* Fain as I can find no characters which are constant for separating the two species. *Mesonyssus* occurs in several orders of unrelated birds and in this respect is similar to *Sternostoma.*

Mesonyssus epileus Wilson, n. sp. Fig. 1.

Diagnosis: A medium sized, elliptical mite with 2 large, irregularly margined dorsal plates covering most of idiosoma, sternal plate lacking, genital plate elongate, truncate posteriorly and lacking setae, anal plate with 2 setae.

♀. Measurements the mean of 10 specimens. Body: length of idiosoma 651 μ (710–573), width 484 μ (512–465). Dorsum: with 2 large irregularly margined plates, podosomal 250 μ (265–237) long, 327 μ (350–299) wide, with about 5 pairs of setae, opisthosomal 297 μ (354–248) long, 324 μ (343–297) wide, with about 2 pairs of setae, plates with pattern as illustrated, several pairs of pores on and adjacent to both plates, 1 pair of setae lateral and 1 pair posterior to podosomal plate, 2 pairs of setae lateral to opisthosomal plate, all lateral setae located in indented area of plates, 2 pairs of setae posterior to opisthosomal plate near edge of idiosoma, stigma dorsal, between coxae III–IV, peritreme short, surrounded by narrow linear platelets laterally and small triangular platelet posteriorly. Venter: tritosternum, sternal plate and metasternal setae absent, 3 pairs of sternal setae, genital plate elongate, slightly tapering and truncate posteriorly, 182 μ (196–163), 70 μ (74–64) wide, reticulated, lacking setae, on mounted specimens the posterior edge appears to lie under a slight fold of the integument, 1 pair of small setae and 1 pair of pores lateral to plate, about 8 (10–7) pairs of long opisthosomal setae, anal plate ventral, elongate, 138 μ (145–129) long, 84 μ (90–78) wide, sides thickened except for small area anteriorly and occasionally, posteriorly, cribrum present, 2 long paranal setae well posterior to anal pore. Gnathosoma: no deutosternal teeth, 3 pairs of very small hypostomal setae, 1 pair of very small gnathosomal setae, ventrally palp trochanter and femur with 1 and 2 very small setae, respectively, palp tarsus with several small setae and 1 long needle-like seta, chelicera 117 μ (122–113) long, chela 27 μ (30–25) long, well developed, edentate, fixed digit with bifid (or fluted) tip. Legs: length of tarsus I, 107 μ (115–101), II, 133 μ (138–131), III, 124 μ (143–131) and IV, 161 μ (173–154), all ventral and dorsal setae on tarsi long and slender, mixed with short conical setae on other segments, number of setae

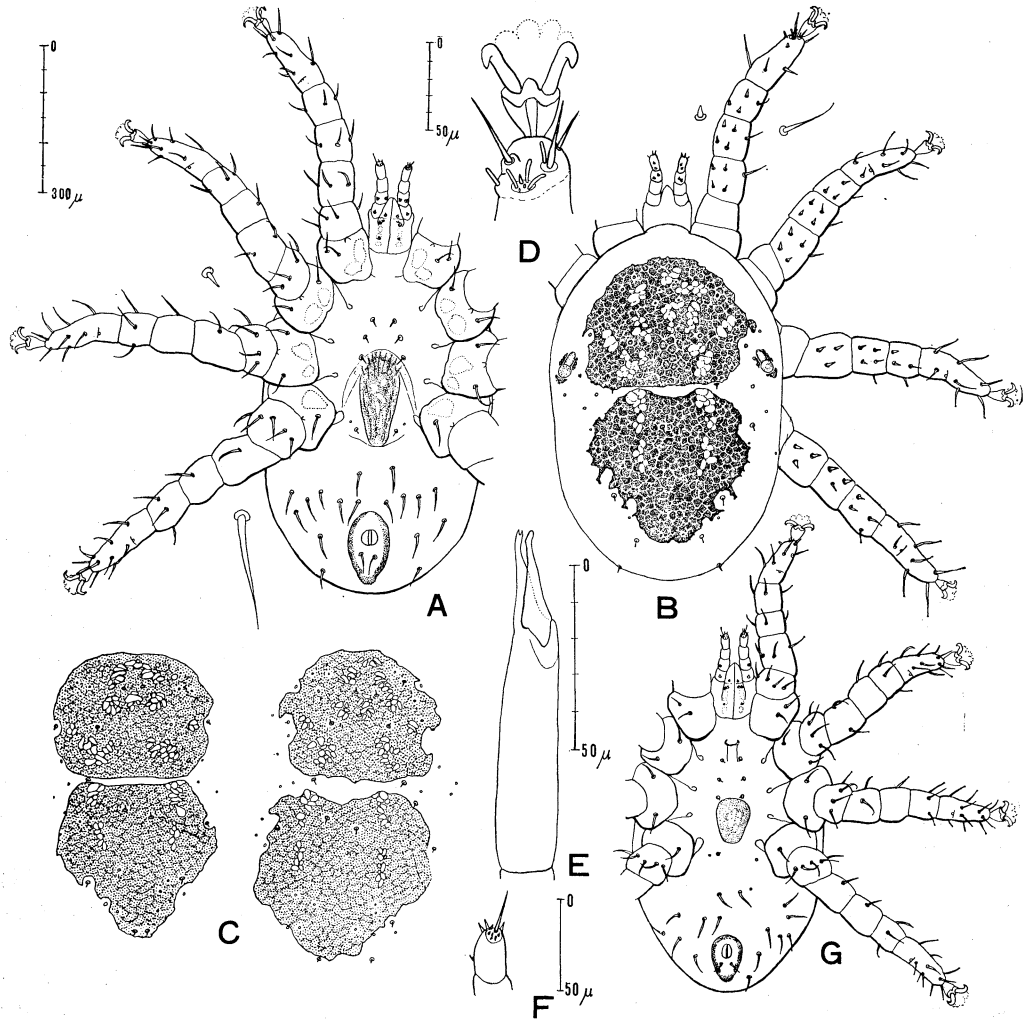

Fig. 1. *Mesonyssus epileus* Wilson, n. sp. A, ♀ ventral view with enlarged drawings of 3rd sternal seta and opisthosomal seta; B, ♀ dorsal view with enlarged drawings of leg setae; C, ♀ dorsal plates showing variation; D, ♀ apex of tarsus I; E, ♀ chelicera; F, ♀ apex of palp tibia-tarsus; G, ♂ ventral view.

on coxae, 2,2,2,1, trochanters, 4,4,4,5, femora, 8,7,4(5),4, genua, 8,6,6,4, tibiae, 7,7,7,7, apex of tarsus I with 3 long pointed setae, several short peg-like setae and several short conical setae, 1 long seta and 1 peg-like seta on slightly raised portion of tarsus.

♂. Measurements the mean of 4 specimens. Body: length of idiosoma 595 μ (635–545), width 416 μ (447–395). Dorsum: similar to ♀, podosomal plate 239 μ (255–225) long, 298 μ (313–278) wide, opisthosomal plate 246 μ (258–235) long, 284 μ (294–258) wide. Venter: ventral plate 82 μ (92–74) long, 53 μ (69–35) wide, anal plate 113 μ (117–108) long, 71 μ (74–69) wide, thickened sides may join anteriorly. Gnathosoma: similar to ♀.

Legs: length of tarsus I, 87 μ (92–89), II, 98 μ (104–92), III, 105 μ (113–99) and IV, 121 μ (129–110), chaetotaxy as in ♀.

Deutonymph: Measurements the mean of 4 specimens. Body: length of idiosoma 543 μ (610–380), width 400 μ (450–300). Dorsum: podosomal plate similar to adult but weakly defined, with 2 pairs of pores or setal bases, opisthosomal plate lacking, several pores or setal bases scattered over dorsal integument, stigma and peritreme similar to adults. Venter: similar to adults except chaetotaxy weaker, ventral plate similar in shape but much smaller than that of ♂, located between coxae IV, 10–12 opisthosomal setae. Gnathosoma and legs: similar to adult except chaetotaxy weaker.

Holotype ♀ (BISHOP 3630), NE New Guinea, Finschhafen, 15 m, hawk (BBM-NG 27661), 12.IV.1963, H. Clissold.

Paratypes: all NE New Guinea. 1 ♂, 8 ♀♀, Jumbora, 60 m, hawk (BBM-NG 28785), 19.II.1963, Clissold; 2 ♂♂, 9 ♀♀, Jumbora, 60 m, hawk (BBM-NG 29694), 26.II.1963, Clissold; 3 ♀♀, same data as holotype; 1 N, Soputa, 30 m, hawk (BBM-NG 29813), 3.X.1963, Clissold; 1 ♂, 3 ♀ ♀, Ahola, 45 m, hawk (BBM-NG 29876), 7.X.1963, Clissold; 1 ♂, 4 ♀♀, Soputa, 30 m, hawk (BBM-NG 29874), 7.X.1963, Clissold.

Other specimens: All NE New Guinea. 1 N, Jumbora, 60 m, hawk (BBM-NG 28785), 19.II.1963, Clissold; 1 ♂, 10 ♀♀ (in alcohol), Jumbora, 60 m, hawk (BBM-NG 29694), 26. II.1963, Clissold; 6 ♀♀, 1 N, Soputa, 30 m, hawk (BBM-NG 29813), 3.X.1963, Clissold; 10 ♀♀, 4 NN (8 ♀♀, 3 NN in alcohol), Ahola, 45 m, hawk (BBM-NG 29876), 7. X. 1963, Clissold; 1 ♂, 6 ♀♀ (1 ♂, 5 ♀♀ in alcohol), Soputa, 30 m, hawk (BBM-NG 29874), 7.X. 1963, Clissold.

M. epileus displayed only a nominal amount of variation. The dorsal plates varied somewhat in shape and in the number of setae and pores which they had (fig. 1c). The ventral leg chaetotaxy was constant except on femur III. Twelve of 24 ♀♀ and 3 of 4 ♂♂ had an extra ventral setae on one or both femora III. Only 3 of the 28 specimens had the extra seta on both of the femora and one ventral seta was considered to be the normal number. The number of ventral body seta ranged from as many as 21 to as few as 14; the average for 13 mites was 16. All of these differences were considered within the range of variation for nasal mites.

This species appears to be closest to *M. milvi* described from *Milvus aegyptius tenebrosus* from Ruanda-Urundi and Mozambique. It may be easily distinguished from *M. milvi* by the ventral anal plate, long ventral opisthosomal setae, truncate genital plate and differences in the ventral leg chaetotaxy. Dorsally *M. epileus* has a much larger and different shaped opisthosomal plate. Tarsus I does not have the long seta below the clump of sensory setae as illustrated by Fain (1962), otherwise the tarsi are very similar.

This is the third species of *Mesonyssus* to be described from the Falconiformes. The three species may be separated in the following key. Only the new species has been seen.

KEY TO SPECIES OF MESONYSSUS FROM FALCONIFORMES

1. With 1 dorsal plate ..... **buteonis** (Fain) 1956
   With 2 dorsal plates 2
2. Anus terminal, paranal setae anterior to anal pore ..... **milvi** Fain 1962
   Anus ventral, paranal setae posterior to anal pore ..... **epileus** Wilson, n. sp.

HOST AND LOCALITY LIST OF MESONYSSUS FROM FALCONIFORMES: ACCIPITRIDAE

Host	Locality	Species
Buteo rufofuscus augur	Ruanda-Urundi	*buteonis* (Fain)
Lophaetus occipitalis	Ruanda-Urundi	*buteonis* (Fain)
Milvus aegyptius tenebrosus	Mozambique Ruanda-Urundi	*milvi* Fain
hawk	E. New Guinea	*epileus* n. sp.

Mesonyssus gourae Wilson, n. sp. Fig. 2.

Diagnosis: A large mite with stout setae, 2 dorsal plates, of which the opisthosomal extends laterally, posteriorly and slightly ventrally, no sternal plate, a well developed excrescence on coxae II–III, no gnathosomal setae and 3 anal setae.

♀. Measurements the mean of 4 specimens. Body: length of idiosoma 773 μ (800–740) width 513 μ (530–500). Dorsum: with 2 large plates, podosomal 298 μ (310–282) long, 400 μ (409–381) wide, broadly arched anteriorly, sinuous posteriorly, with 1 pair of small submarginal setae (or their bases) near the posterior margin and about 10 pairs of pores, opisthosomal (to posterior edge of idiosoma) 429 μ (456–385) long, 494 μ (522–451) wide, subcircular, wider than long, extending laterally, posteriorly and slightly ventrally, with about 3 pairs of setae and about 9 pairs of pores, setae on plates difficult to distinguish, 2 pairs of pores posterolateral to podosomal plate near peritreme, 1 pair of setae and 1 pair of pores antero-lateral to opisthosomal plate, stigma dorsal, between coxae III–IV, peritreme short. Venter: tritosternum, sternal plate and metasternal setae absent, 3 pairs of sternal setae, genital plate 167 μ (177–161) long, 75 μ (83–67) wide, reticulated, lacking setae, rounded posteriorly, constricted toward middle, 1–2 pairs of pores postero-lateral to plate, anal plate ventral, suboval, sides extensively thickened, 123 μ (131–110) long, 98 μ (106–92) wide, paranal setae extend from about anterior margin of anal pore to about base of postanal seta, postanal seta slightly smaller than paranal setae, extending to small cribrum, 12 opisthosomal setae in approximately 4 transverse rows, 1st row posterior to genital plate with 2 setae, 2nd row anterior to anal plate with 6 setae, 3rd and 4th rows flanking anal plate each with 2 setae, setae with slightly swollen bases, 1 pair of pores behind leg IV near lateral body margin. Gnathosoma: deutosternal groove with about 5 rows of teeth, 1–3 teeth per row, teeth can be seen only in specimens with well flattened gnathosoma, 3 pairs of hypostomal setae arranged as illustrated, dorsally palp femur, genu and tibia with 1, 2 and 2 very small setae, respectively, ventrally palps with several small and 2 long setae on apex of tibia and tarsus, chelicera 125 μ (128–120) long, chela 34 μ (35–33) long, well developed, fixed digit with bifid (or fluted tip). Legs: length of tarsus I, 141 μ (145–133), II, 160 μ (168–150), III, 168 μ (173–161) and IV, 179 μ (189–166), coxae II–III with well developed ovate excrescence on postero-ventral margin, most dorsal and ventral setae stout, some dorsal setae fine, number of setae on coxae, 2,2,2,1, trochanters, 3,4,4,5, femora, 8,7,7,6(5), genua, 8,6,6,7(6), tibiae, 6,7,7,7, apex of tarsus I with 2 long pointed vertical setae, 1 long whip-like horizontal seta, 1 short peg-like seta and cluster of short peg-like setae and minute conical setae, 2 vertical setae and peg-like seta on pedicel, tarsal claws well developed, those on tarsus I stouter than those on tarsi II–IV.

♂. Measurements the mean of 2 specimens. Body: smaller than ♀, length of idiosoma

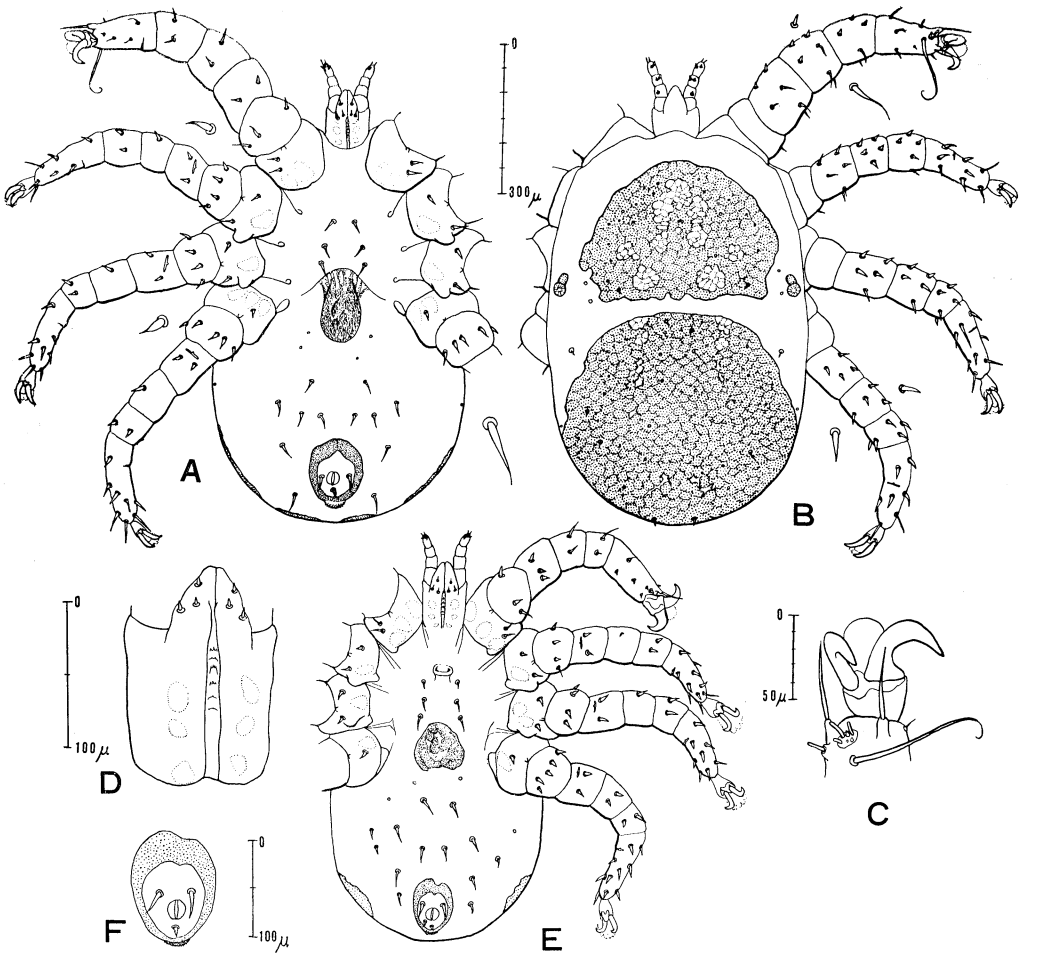

Fig. 2. *Mesonyssus gourae* Wilson, n. sp. A, ♀ ventral view with enlarged drawings of leg setae; B, ♀, dorsal view with enlarged drawings of leg setae; C, ♀ apex of tarsus I; D, ♀ ventral view of gnathosoma; E, ♂ ventral view; F, ♂ anal plate showing variation.

650 μ, width 440 μ. Dorsum: similar to ♀, podosomal plate 259 μ long, 367 μ wide, opisthosomal plate 385 μ long, 440 μ wide. Venter: similar to ♀, ventral plate suboval, wider than long, 77 μ long, 86 μ wide, lying between coxae IV, anal plate 108 μ long, 83 μ wide. Gnathosoma: similar to ♀. Legs: length of tarsus I, 117 μ, II, 112 μ, III, 121 μ and IV, 143 μ, chaetotaxy similar to ♀ except femur I may have 9 setae instead of 8.

Protonymph: One engorged specimen in poor condition. Idiosoma 740 μ long, 450 μ wide, no dorsal plates evident, stigma, peritreme, deutosternal groove and anal plate similar to adult, chaetotaxy appears to be similar to adult except weaker. The specimen contains a fully developed deutonymph which appears to have 2 weakly developed dorsal plates with some minute setae; stigma, peritreme and anal plate similar to adult.

Holotype ♀ (BISHOP 3631), NW New Guinea, Boemi River, 5 m, *Goura cristata* (BBM-NG 21725), 10.IX.1962, N. Wilson.

Paratypes: All NW New Guinea. 1 ♀, Nabire, 5 m, *Ducula pinon* (BBM-NG 21629), 31.VIII.1962, Wilson; 1♂, 2 ♀♀, Nabire, 5 m, *Goura cristata* (BBM-NG 21639), 1.IX.1962, Wilson; 2 ♂♂, 2 ♀♀, same data as holotype.

Other specimens: 1 N, NW New Guinea, Nabire, 5 m, *Goura cristata* (BBM-NG 21639), 1.IX.1962, Wilson.

There was considerable variation in the number of pores adjacent to the genital plate in the 9 adult specimens. The holotype had 4 (fig. 2a) while other specimens had 1, 2 or 3. One specimen had a seta in place of a pore. In some specimens the thickened portion of the anal plate was not united anteriorly and there were 11 or 13 ventral body setae. Two of the 3 ♂♂ had an extra postanal seta on the anal plate. There was a small amount of variation in the number of ventral leg setae which has been indicated in the description.

M. gourae shares a similarity to *M. treronis* in that both have very large opisthosomal plates which extend laterally, posteriorly and slightly ventrally. They are easily distinguished by the arrangement of the setae on the apex of tarsus I, the ventral leg chaetotaxy and number of anal setae.

Four of 8 *Goura cristata* and 1 of 7 *Ducula pinon*, which I examined in West New Guinea, were infested with *M. gourae*. Only 1 mite was recovered from *D. pinon* and additional collecting is necessary to determine whether this was a normal host association.

Mesonyssus tetae Wilson, n. sp. Fig. 3.

Diagnosis: A medium sized mite with 2 dorsal plates of which the opisthosomal covers most of the opisthosoma, no sternal plate or excrescences on coxae, 1 pair of gnathosomal setae and 3 long anal setae.

♀. Measurements the mean of 2 specimens. Body: length of idiosoma 578 μ, width 376 μ. Dorsum: with 2 large plates, podosomal 230 μ long 291 μ wide, broadly arched anteriorly, subparallel, laterally, sinuous posteriorly, with 3 pairs of minute peg-like setae and 4–5 pairs of pores, opisthosomal (to posterior edge of idiosoma) 310 μ long, 327 μ wide, subcircular, slightly wider than long, extending laterally and posteriorly but not ventrally, anterior margin may be slightly concave or sinuous, 2 pairs of minute peg-like setae, 4 pairs of pores, setae on both plates difficult to distinguish and some pores may be setal bases, dorsal plates with scalloped pattern and hyaline margin as illustrated, 1–2 pairs of pores lateral to podosomal plate near peritreme, 1 pair of pores antero-lateral to opisthosomal plate, stigma dorsal, between coxae III–IV, peritreme short. Venter: tritosternum, sternal plate and metasternal setae absent, 2nd and 3rd pair of sternal setae stouter than 1st, genital plate 130 μ long, 46 μ wide, parallel-sided, rounded posteriorly, a weakly, reticulated area posterior to well defined portion of genital plate may be an extension of plate, 1 pair of minute conical setae and 1 pair of pores lateral to genital plate, the pores may be setal bases, anal plate ventral, 104 μ long, 67 μ wide, elongate-oval, sides thickened laterally, cribrum present, paranal setae long, tapering, located anterior and lateral to anal pore, extending beyond base of postanal seta, postanal seta somewhat shorter than adanals, extending to posterior margin of cribrum, 10 opisthosomal setae in approximately 4 trans-

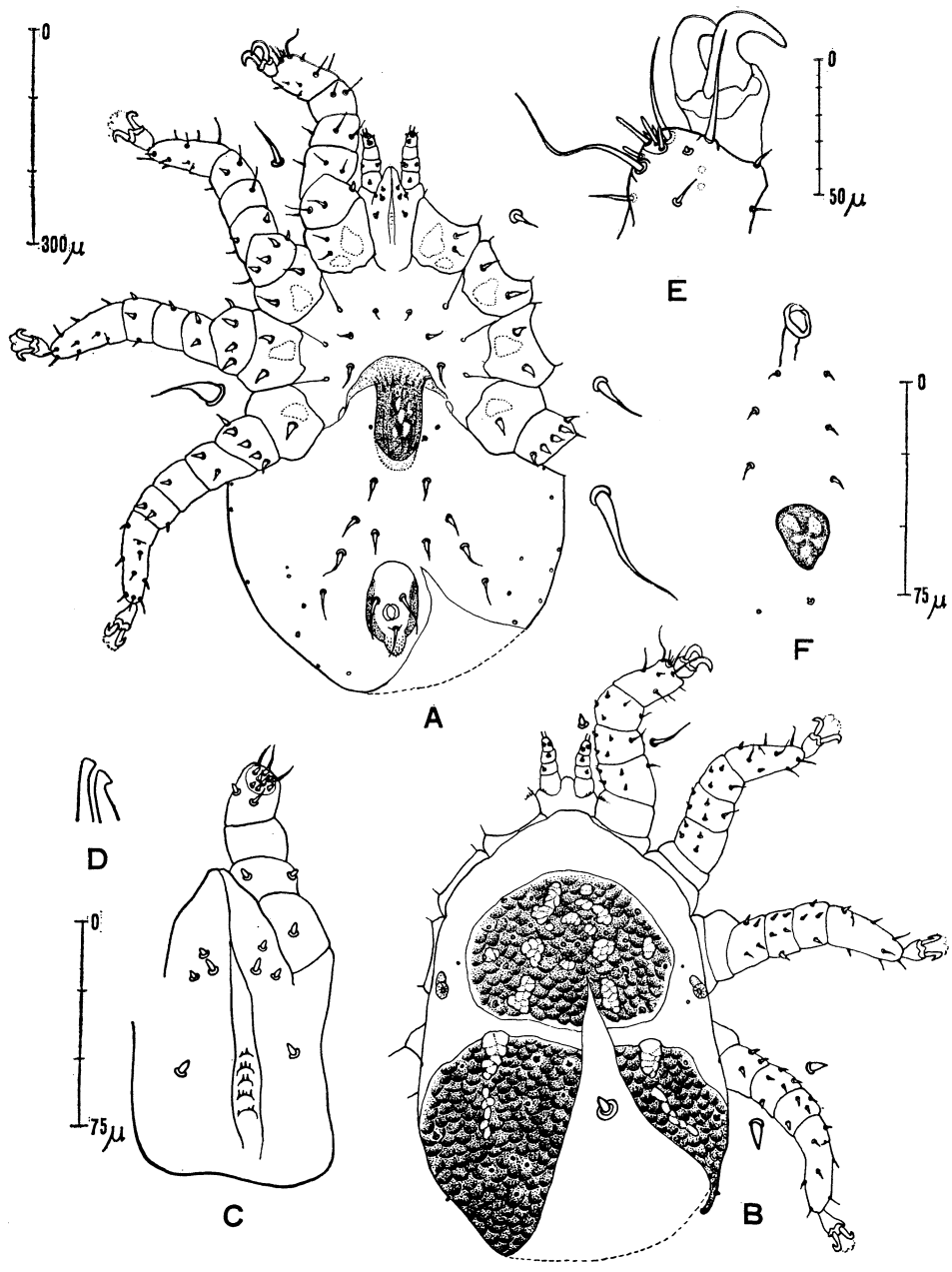

Fig. 3. *Mesonyssus tetae* Wilson, n. sp. A, ♀ ventral view with enlarged drawings of 1st and 3rd sternal setae, opisthosomal seta and leg setae; B, ♀ dorsal view with enlarged drawings of leg setae and opisthosomal plate seta; C, ♀ ventral view of gnathosoma; D, ♀ apex of chelicera; E, ♀ apex of tarsus I; F, ♂ sterno-genital area.

verse rows, 1st row posterior to genital plate with 2 setae, 2nd row anterior to anal plate with 4 setae, 3rd and 4th rows flanking anal plate, each with 2 setae, sometimes 3rd row joining 2nd row, setae with slightly swollen bases, those of 4th row weaker than others, about 8 pairs of pores on body margin. Gnathosoma: deutosternal groove with 5 rows of teeth, 2–4 teeth per row, 3 pairs of small peg-like hypostomal setae, 1 pair of small peg-like gnathosomal setae, dorsally palp femur and genu with 1 seta, tibia with 2 setae, ventrally palp trochanter, femur and tibia with 1, 2 and 4 setae respectively, tarsus with several setae, all palp setae of same shape as hypostomal setae except ventrally where 3 on tibia and 1 on tarsus are long and tapering, entire chelicera not observable, tip of movable digit with apical tooth, tip of fixed digit expanded, flattened apically. Legs: length of tarsus I, 81 μ, II–III, 110 μ and IV, 131 μ, ventrally setae on legs become stouter from I to IV, coxae without excrescences, number of setae on coxae 2,2,2,1, trochanters, 4,5,4,5, femora, 8,7,6,5, genua, 8,6,6,6 and tibiae 7,7,7,7, apex of tarsus I with 2 long pointed vertical setae, 1 long whip-like horizontal seta, 1 short and 1 minute peg-like seta, 4 short tapering setae and cluster of short peg-like and conical setae, long vertical and horizontal setae on short pedicels, tarsal claws well developed, those on tarsus I stouter than those on tarsi II–IV.

♂. One badly damaged specimen available. Body: too badly damaged to measure but appears to be smaller than ♀. Dorsum: dorsal plates broken but appear similar to ♀'s. Venter: similar to ♀, ventral plate 46 μ long, 30 μ wide, oval, lying between coxae II–IV, genital pore located well in front of lst pair of sternal setae, 1 pair of minute peg-like setae posterior to ventral plate, anal plate 99 μ long, 58 μ wide. Gnathosoma: damaged but appears similar to ♀. Legs: length of tarsus I, 76 μ, II, 90 μ, III, 101 μ and IV, 104 μ, chaetotaxy similar to ♀.

Nymph: measurements the mean of 2 specimens. Body: idiosoma 585 μ long, 385 μ wide. Dorsum: dorsal plates appear to be absent but it is difficult to be certain, 16–20 minute peg-like setae scattered over idiosoma, on one specimen some setae along posterolateral margin tapering. Venter: anal plate 75 μ long, 60 μ wide, body setae similar to adult. Gnathosoma: similar to adult. Legs: length of tarsus I, 67 μ, II, 76 μ, III, 81 μ and IV, 83 μ, apex of tarsus II–IV extended mid-ventrally into small spine, chaetotaxy and tarsal claws similar to adult.

Holotype ♀ (BISHOP 3632), NW New Guinea, Enarotali, 1900 m, green fruit dove (BBM-NG 21523), 8.VIII.1962, N. Wilson.

Paratype: 1♀, NE New Guinea, Wau Creek, 1525 m, fruit dove (BBM-NG 27591), 2. IV.1963, H. Clissold.

Other specimens: 1♂, NW New Guinea, Enarotali, 1900 m, green fruit dove (BBM-NG 21523), 8.VIII.1962, Wilson; 2 NN, NE New Guinea, Wau Creek, 1525 m, fruit dove (BBM-NG 27591), 2.IV.1963, Clissold.

The new species is related to *M. zenaidurae*, *M. treronis* and *M. gourae* all distinguished by a large opisthosomal plate which covers most of the opisthosoma. This plate is wider than long and extends laterally, posteriorly and sometimes to the venter. *M. tetae* is nearest *M. gourae* described in this paper from New Guinea. It may be distinguished from *M. gourae* by the presence of a pair of gnathosomal setae, the absence of excrescences on the coxae and long anal setae.

Mesonyssus ptilinopi Wilson, n. sp. Fig. 4.

Diagnosis: A small mite with numerous long ventral setae, 2 dorsal plates, short peritreme, an irregular and weakly sclerotized sternal plate and 2 long anal setae.

♀. Measurements the mean of 12 specimens. Body: length of idiosoma 527 μ (650–440), width 325 μ (390–260). Dorsum: with 2 large irregularly margined plates, podosomal 226 μ (235–212) long, 241 μ (259–221) wide, subcircular, posterior margin usually straight but may be slightly rounded or concave, with 5 pairs of setae and 0–2 pairs of pores, opisthosomal 241 μ (259–220) long, 205 μ (235–179) wide, triangular, posterior margin extended, or relatively short, anterior margin weakly concave, with 2–3 pairs of setae, 5–8 pairs of pores, 1 pair of setae and 1–3 pairs of pores postero-lateral to podosomal plate and near stigma, 1–3 pairs of setae (or pores) postero-lateral to opisthosomal plate, occasionally some lateral setae and pores of plates are on integument, integument frequently invaginated into antero-lateral area of muscle attachment of podosomal plate, stigma dorsal, over coxa III, peritreme short, length equal to or less than diameter of stigma. Venter: tritosternum and metasternal setae absent, sternal plate weakly sclerotized, very irregular in shape, reticulated, confined within area bordered by 6 very small sternal setae or their bases, some of which may be included on extensions of plate, genital plate 119 μ (131–104) long, 71 μ (81–64) wide, lacking setae, rounded posteriorly, 1 pair of setal bases (or pores) lateral to plate, 1 pair of very small peg-like setae posterior to plate, anal plate ventral, 68 μ (83–62) long, 51 μ (60–41) wide, sides thickened, cribrum absent, 2 long paranal setae located 1/2 width of anal pore or more in front of it and extending to or past its posterior margin, about 17 pairs (20–8) of long slender posterior body setae, these with slightly swollen bases, 1 pair on posterior body margin slightly smaller than others. Gnathosoma: no deutosternal teeth, 2–3 pairs of hypostomal setae or their bases, ventrally 1 seta on palp trochanter and femur, apex of palps with several small setae and 1 long seta, dorsally palp femur, genu and tibia with 2 setae arranged as illustrated, chelicera 78 μ long, chela 23 μ long, well developed, edentate, fixed digit with bifid (or fluted) tip. Legs: length of tarsus I, 70 μ (78–58), II, 73 μ (78–69), III, 79 μ (83–71), IV, 100 μ (106–92), most ventral setae long and slender, with somewhat swollen bases, most dorsal setae short, number of setae on coxae, 2,2,2,1(2), trochanters, 3,4(3),4,5, femora, 9,7,5,5, genua, 8,7,7,6, tibiae, 6,6,6,6, apex of tarsus I with 2 long setae, several short peg-like and conical setae, tarsal claws well developed and of equal size.

♂. Measurements the mean of 2 specimens. Body: length of idiosoma 465 μ, width 275 μ. Dorsum: similar to ♀, podosomal plate 208 μ long, 205 μ wide, opisthosomal plate 191 μ long, 166 μ wide. Venter: similar to ♀, genital plate broadly rounded behind, joined to weakly developed sternal plate anteriorly to form sterno-genital plate, genital pore immediately anterior to 1st pair of sternal setae, anal plate 62 μ long, 46 μ wide. Gnathosoma: similar to ♀. Legs: length of tarsus I–II 62 μ, III, 69 μ, IV 82 μ, chaetotaxy as in ♀.

Holotype ♀ (Bishop 3633), SE New Guinea (Papua), Cape Kileton, 5 m, fruit dove (BBM-NG 29273), 20.X.1963, H. Clissold.

Paratypes: 2 ♀♀, NW New Guinea, Enarotali, 1900 m, fruit dove, (BBM-NG 21307), 6.VII.1962, N. Wilson; 2 ♂♂, 11 ♀♀, NW New Guinea, Enarotali, 1900 m, green fruit dove (BBM-NG 21523), 8.VIII.1962, Wilson; 2 ♀♀, NE New Guinea, Mt. Kaindi, *Ptilinopus ornatus* (BBM-NG 20564), 11.IX.1962, Clissold; 7 ♀♀, 1 N, NE New Guinea, Forestry, Wau, *Ptilinopus perlatus* (BBM-NG 21142), 26.I.1963, Clissold; 1♀, NE New Guinea, Finschha-

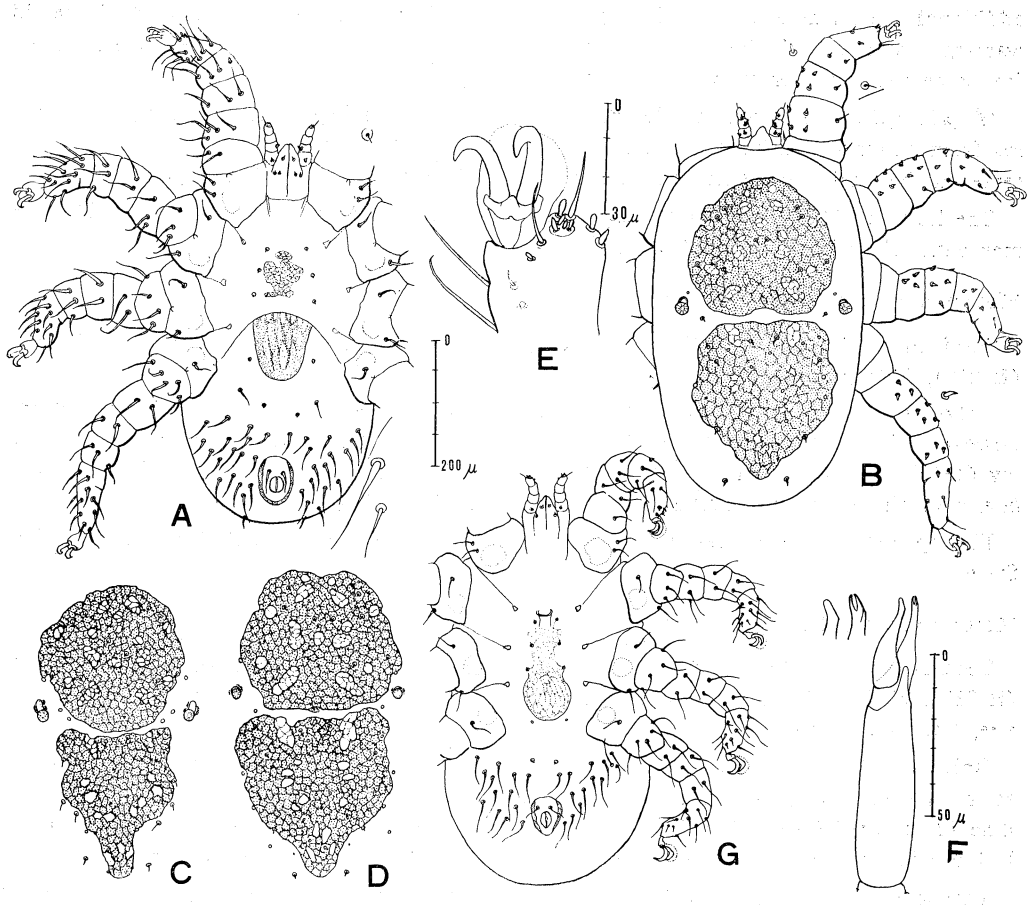

Fig. 4. *Mesonyssus ptilinopi* Wilson, n. sp. A, ♀ ventral view with enlarged drawings of 3rd sternal seta and opisthosomal setae; B, ♀ dorsal view with enlarged drawings of leg setae; C–D, ♀ dorsal plates showing variation; E, ♀ apex of tarsus I; F, ♀ chelicera with enlarged drawing of tip; G, ♂ ventral view.

fen, 15 m, fruit dove (BBM-NG 27660), 12.IV.1963, Clissold; 1♀ same data as holotype.

Other specimens: all NW New Guinea. 1♂, Enarotali, 1900 m, fruit dove (BBM-NG 21307), 6.VII.1962, Wilson; 2 NN, Enarotali, 1900 m, green fruit dove (BBM-NG 21523), 8.VIII.1962, Wilson.

There were two types of variation noted among the specimens of *M. ptilinopi* which are available. One form was characterized by a non-elongate opisthosomal plate and extremely short peritremes (fig. 3B, D) while the other form had an elongate opisthosomal plate and longer peritremes (fig. 3C). There were other minor differences in the number, length and arrangement of setae and pores on the idiosoma. Two specimens from *Ptilinopus ornatus* (BBM-NG 20564) were intermediate in that they had an elongate opisthosomal plate but extremely short peritremes. In addition they had considerably fewer (8 pairs) ventral opisthosomal setae than other specimens. When all of the hosts have been identified and

additional specimens are available for study, other characters may be found which would warrant separation of these forms into different species. However at the present time I feel it best to consider them as variants of one species.

M. ptilinopi appears to resemble *M. triangulus* more than any other member of *Mesonyssus* from columbiform birds. The two species are easily distinguished by the number of setae on the anal plate which number 2 in *M. ptilinopi* and 3 in *M. triangulus*.

One host (BBM-NG 21523) was infested with both *M. ptilinopi* and *M. tetae*. The former outnumbered the latter 14 specimens to 2.

Mesonyssus columbae (Crossley)

Specimens: 3 ♀♀, United States, Indiana, Tippecanoe Co., West Lafayette, *Columba livia* (E 818), 24.II.1959, N. Wilson.

Only 1 of 15 pigeons (7%) which I examined in Indiana was infested with nasal mites, however this individual harbored 24 specimens of this and the following species. Crossley (1952) reported 12 of 60 pigeons (20%) examined in Texas infested with *M. columbae*, a much greater infestation rate than observed in Indiana.

This species has been reported from Ruanda-Urundi and the state of Texas in the United States.

Mesonyssus melloi melloi (Castro)

Specimens: All United States. 2 ♀♀, Indiana, Wayne Co., Richmond, *Columba livia* (E 317), 21.IV.1957, P. Ferrero; 5 ♂♂, 14 ♀♀, 2 NN, Indiana, Tippecanoe Co., West Lafayette, *Columba livia* (E 818), 24.II.1959, N. Wilson.

Only 7% of the pigeons which I examined in Indiana were infested with *M. m. melloi* as compared to 25% of those examined in Texas by Crossley (1952). This is the first time *M. m. melloi* and *M. columbae* have been reported from the same host. Their numerical distribution in the host was very disproportionate with 87% being *M. m. melloi*.

This species is known from Africa, South America and the state of Texas in the United States. It is surprising that *M. m. melloi* and *M. columbae* would have so few published locality records considering they infest such a common and widespread host as *C. livia*. It would seem desirable to publish additional records of these two species and to have a study made of the relationships between them.

A key to the species of *Mesonyssus* from columbiform birds follows. Specimens of *M. columbae*, *M. m. melloi*, *M. triangulus* and *M. zenaidurae* have been seen. Two recently described species, *M. oenae* and *M. pteroclesi*, have not been included because the literature was not available.

KEY TO SPECIES AND SUBSPECIES OF MESONYSSUS FROM COLUMBIFORMES

1. Anal plate with 2 setae 2
   Anal plate with 3 setae 4
2. Paranal setae shorter than length of anal pore ..... **columbae** (Crossley) 1950
   Paranal setae longer than length of anal pore 3
3. Opisthosomal plate covering all of opisthosoma and extending to venter; sternal plate absent ..... **treronis** (Fain) 1956

Opisthosomal plate not covering all of opisthosoma, narrowed posteriorly; trace of sternal plate in both sexes ..... **ptilinopi** Wilson, n. sp.

4. With a sclerotized plate posterior to stigma..... 5
   Without a sclerotized plate posterior to stigma 8
5. Post stigmal plate larger than stigma..... 6
   Post stigmal plate smaller than stigma ..... **melloi streptopeliae** Fain 1962
6. Opisthosomal plate as wide as opisthosoma, its greatest width posterior to middle... ..... **zenaidurae** (Crossley) 1952
   Opisthosomal plate not as wide as opisthosoma, its greatest width anterior to middle...7
7. All lateral ventral setae longer than greatest width of anal plate; setae on coxae I–III grossly unequal in size..... **melloi melloi** (Castro) 1948
   All ventral setae shorter than greatest width of anal plate; setae on coxae I–III about equal size.....**turturi** Fain 1962
8. Opisthosomal plate triangular in shape, not covering most of opisthosoma .... **triangulus** (Strandtmann) 1961
   Opisthosomal plate subcircular in shape, covering most of opisthosoma and extending laterally, posteriorly and sometimes to venter 9
9. Coxae II–III with a well developed postero-ventral excrescence; no gnathosomal setae..... **gourae** Wilson, n. sp.
   Coxae without a postero-ventral excrescence; 1 pair of gnathosomal setae ....**tetae** Wilson, n. sp.

HOST AND LOCALITY LIST OF MESONYSSUS FROM COLUMBIFORMES: COLUMBIDAE

Host	Locality	Species
Columba g. guinea	Ruanda-Urundi	*columbae* (Crossley)
Columba livia	Ruanda-Urundi	*columbae* (Crossley)
	United States	
	Brazil	*melloi melloi* (Castro)
	Ruanda-Urundi	
	United States	
Columbigallina passerina	United States	*zenaidurae* (Crossley)
Ducula pinon	New Guinea	*gourae* n. sp.
Goura cristata	New Guinea	*gourae* n. sp.
Ptilinopus ornatus	New Guinea	*ptilinopi* n. sp.
Ptilinopus perlatus	New Guinea	*ptilinopi* n. sp.
Streptopelia capicola tropica	Ruanda-Urundi	*melloi streptopeliae* Fain
Streptopelia d. decaocto	Belgian Zoo	*melloi streptopeliae* Fain
Streptopelia l. lugens	Ruanda-Urundi	*melloi streptopeliae* Fain
Streptopelia s. semitorquata	Ruanda-Urundi	*melloi streptopeliae* Fain
Streptopelia s. senegalensis	Ruanda-Urundi	*melloi streptopeliae* Fain
	Transvaal	
Streptopelia turtur hoggara	Africa	*melloi streptopeliae* Fain
Treron c. calva	Ruanda-Urundi	*treronis* (Fain)
Turtur afer	Ruanda-Urundi	*turturi* Fain
Zenaida a. asiatica	United States	*triangulus* (Strandtmann)
Zenaidura macroura	United States	*zenaidurae* (Crossley)
green fruit dove	New Guinea	*tetae* n. sp.

Mesonyssus alisteri Wilson, n. sp. Fig. 5.

Diagnosis: a medium sized mite with 2 large dorsal plates, weak tritosternum, 2 anal setae and some stout conical or peg-like ventral leg setae.

♀. Measurements the mean of 2 specimens. Body: length of idiosoma 770 μ, width 580 μ. Dorsum: 2 large plates with pattern as illustrated, podosomal slightly longer than wide, 360 μ long, 353 μ wide, with sinuous lateral margins, almost parallel anterior-posterior margins, 3 pairs of slender tapering median setae, 1 pair of pores, opisthosomal subtriangular, 317 μ long, 261 μ wide, tending to be concave laterally, straight anteriorly, slightly expanded posteriorly, 1 pair of slender tapering median setae, 3 pairs of pores, integument with 12 pairs (11–13) of setae of the same type as on plates, about 6 pairs lateral to each plate, 1–2 pairs of pores lateral to opisthosomal plate, stigma dorso-lateral, between coxae II–IV, peritreme short, both enclosed in oval shieldlet. Venter: tritosternum poorly developed and difficult to see, short with large base from which extends a bifurcate lacina or lacinae, sternal plate elongate with indistinct margins, scale-like pattern and punctate as illustrated, 1st pair of sternal setae on margin of plate, 2nd and 3rd pairs off plate, anteromedian margin extends slightly beyond level of 1st pair of sternal setae, posterior margin ends before level of 3rd pair of setae, genital plate broadly rounded behind, slightly concave laterally, 221 μ long, 87 μ wide at level of genital setae, with well defined median longitudinal area of muscle insertion, weakly rayed anterior margin extends slightly beyond level of 3rd pair of genital setae, metasternal setae absent, 1 pair of small pores lateral to genital plate, 1 pair opisthosomal, anal plate ventral, 108 μ long, 87 μ wide, anterior margins arched, sides thickened postero-laterally to about level of paranal setae, postanal seta and base absent, cribrum present, paranal setae located adjacent to posterior margin of anal pore, 10–11 opisthosomal setae in 3 horizontal rows, 2 behind genital plate, 4–5 in front of anal plate, 4 lateral to anal plate on posterior body margin. Gnathosoma: weak deutosternal groove with about 3 rows of teeth, 1 tooth per row, the teeth are very difficult to see, 2 pairs of long hypostomal setae, anterior pair over 4× as long as posterior pair, dorsally palp femur and genu with a small conical internal seta, palp femur also with a small conical external seta, tarsus with 3 long whip-like setae, several small conical setae, chelicera not easily seen in any specimens, 105 μ long, chela 30 μ long, movable digit broadest at base, tip expanded with apical and subapical tooth, fixed digit narrower with tip expanded and fluted. Legs: length of tarsus I, 143 μ, II, 136 μ, III, 143 μ and IV, 179 μ, setae on coxae I–IV slender tapering, trochanters I–IV slender tapering, conical and peg-like, number of setae on coxae, 2,2,2,1, trochanters, 4,5,4,4, femora, 8,10(11),6(5),5, genua, 10,8,8,9, and tibiae, 8,9,9,9, apex of tarsus I with 2 long tapering setae, several short conical and peg-like setae, apex of tarsi II–IV extended mid-ventrally into small spine, tarsal claws well developed, II–IV stronger than I.

♂. Measurements the mean of 2 specimens. Body: smaller than ♀, idiosoma 705 μ long, 575 μ wide. Dorsum: similar to ♀, podosomal plate 336 μ long, 343 μ wide, opisthosomal plate 306 μ long, 261 μ wide. Venter: similar to ♀, sterno-genital plate extremely well developed, with distinct scale-like pattern as illustrated, extending from genital pore to coxae IV, 329 μ long, 174 μ wide, 3 pairs of sternal and 1 pair of genital setae, all on plate, 1 genital seta sometimes adjacent to plate, 1st pair of sternal setae set well in from edge of plate about on line with lateral edge of genital pore, 2nd and 3rd pairs submarginal, genital setae marginal, anal plate 108 μ long, 85 μ wide. Gnathosoma: simi-

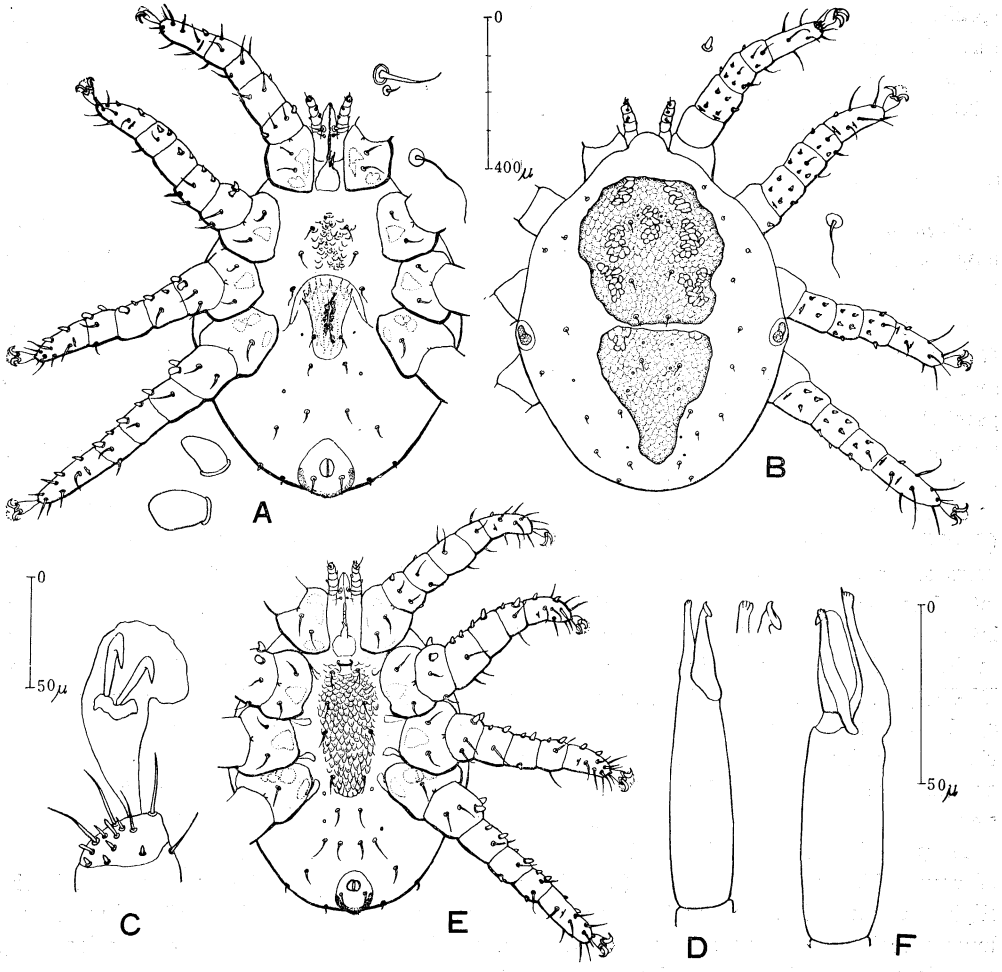

Fig. 5. *Mesonyssus alisteri* Wilson, n. sp. A, ♀ ventral view with enlarged drawings of 2nd sternal seta, hypostomal setae and leg setae; B, ♀ dorsal view with enlarged drawings of podosomal plate seta and leg seta; C, ♀ apex of tarsus I; D, ♀ chelicera with enlarged drawing of tip; E, ♂ ventral view; F, ♂ chelicera.

lar to ♀, chelicera 124 μ long, chela 41 μ long, movable digit with well developed spermatodactyl its exact shape and relationship to chela not clear, fixed digit expanded and fluted at tip with apical spine-like projection. Legs: length of tarsus I–II, 108 μ, III, 113 μ and IV, 148 μ, chaetotaxy as in ♀.

Holotype: ♀ (BISHOP 3634), NE New Guinea, Bulolo River, 915 m, king parrot (BBM-NG 28416), 6.VI.1963, P. Shanahan.

Paratypes: All NE New Guinea, Morobe Distr., 1♂, Sandy Creek or Mt. Missim, lorikeet (BBM-NG 21065), 14. I. 1963, H. Clissold; 2 ♂♂, 1 ♀, same data as holotype; 2 ♀♀, Nakata Ridge, 1525 m, green winged king parrot (BBM-NG 28557), 16.VII.1963, Shanahan.

Variation in the 7 specimens was slight and is indicated in the descriptions. The new

species is most closely related to *M. kakatuae* described from Australia. It may be distinguished from this species by the one less pair of setae on the opisthosomal plate, better developed sternal plate and heavier chaetotaxy of the legs. *M. alisteri* has a trochanter setal count of 4, 5, 4, 4, while *M. kakatuae* has 3, 4, 3, 3.

Mesonyssus neopsittaci Wilson, n. sp. Fig. 6.

Diagnosis: A medium sized mite with a well defined podosomal plate, reduced and longitudinally divided opisthosomal plate, both of which have some strong simple setae, sternal plate without setae, anal plate with 3 setae, coxal setae slender and tapering.

♀. Measurements the mean of 8 specimens. Body: suboval, length of idiosoma 560 μ (620–460), width 439 μ (510–380). Dorsum: with 3 plates, all well defined and with simple setae, podosomal 223 μ (259–155) long, 265 μ (301–207) wide, broadly rounded anteriorly, parallel sided laterally, concave postero-medially, 3 pairs of slender, tapering submarginal antero-lateral setae, median pair strongest followed by posterior and anterior pair, 1 pair of slender median setae, 2 pairs of long marginal postero-median setae, occasionally 1 or more of these submarginal, opisthosomal reduced to anterior portion, equally divided, 71 μ (80–66) long, 60 μ (66–56) wide, with 2 long setae along inner margin, integument with 9 pairs of setae, 5 pairs lateral to podosomal and opisthosomal plates, 2 pairs posterior and lateral to opisthosomal plates, 2 pairs on posterior body margin, all except 1 pair antero-lateral to opisthosomal plates much smaller than largest setae on plates, 1 pair of pores median and 2 pairs posterior to opisthosomal plates, stigma dorso-lateral, between coxae III–IV, peritreme short, both enclosed in oval shieldlet. Venter: tritosternum poorly developed, with large hyaline base, 2 slender laciniae divided 1 or more times at tip, sternal plate present but margins poorly defined, approximately pyramid-shaped with punctate pattern as illustrated, width at 3rd pair of sternal setae 105 μ (110–99), flanked by 3 pairs of sternal setae, anterior margin even with or projecting slightly beyond 1st pair of sternal setae, posterior margin indefinite but appearing to extend to about level of posterior margin of coxae III, genital plate 66 μ (67–44) wide at level of setae, broadly rounded behind, slightly concave laterally, with a pair of slender marginal setae, with well defined median longitudinal area of muscle insertion and scattered punctate, weakly rayed anterior-margin extends almost to level of 2nd pair of sternal setae and overlaps posterior margin of sternal plate, metasternal setae absent, 1 pair of pores postero-lateral to plate, anal plate ventral, oval, 113 μ (129–94) long, 83 μ (101–69) wide, sides thickened laterally and sometimes posteriorly in front of well developed cribrum, paranal setae located in front of and lateral to anal pore and extending slightly beyond its anterior margin, postanal seta shorter, extending almost to anterior margin of cribrum, 4 pairs of opisthosomal setae, 2 pairs between genital and anal plate, 1 pair antero-lateral and 1 pair postero-lateral to anal plate. Gnathosoma: weak deutosternal groove with 6 (4–8) rows of teeth, 1 infrequently 2 teeth per row, 2 pairs of long slender hypostomal setae about equal in size and lying in vertical row, dorsally palp femur, genu and tibia with 1 external seta, palp genu and tibia with 1 internal seta, all minute and conical except external seta on palp tibia which is long and slender, ventrally palp tibia with 2 short peg-like setae, palp tarsus with several small conical and peg-like setae and 1 long whip-like seta, chelicera 133 μ long, movable digit 27 μ long, broadest at base, with tip expanded and fluted, fixed digit narrower with bifid tip and internal tooth. Legs: length of tarsus I, 90 μ (97–81), II, 79 μ (83–70), III, 80 μ (85–74)

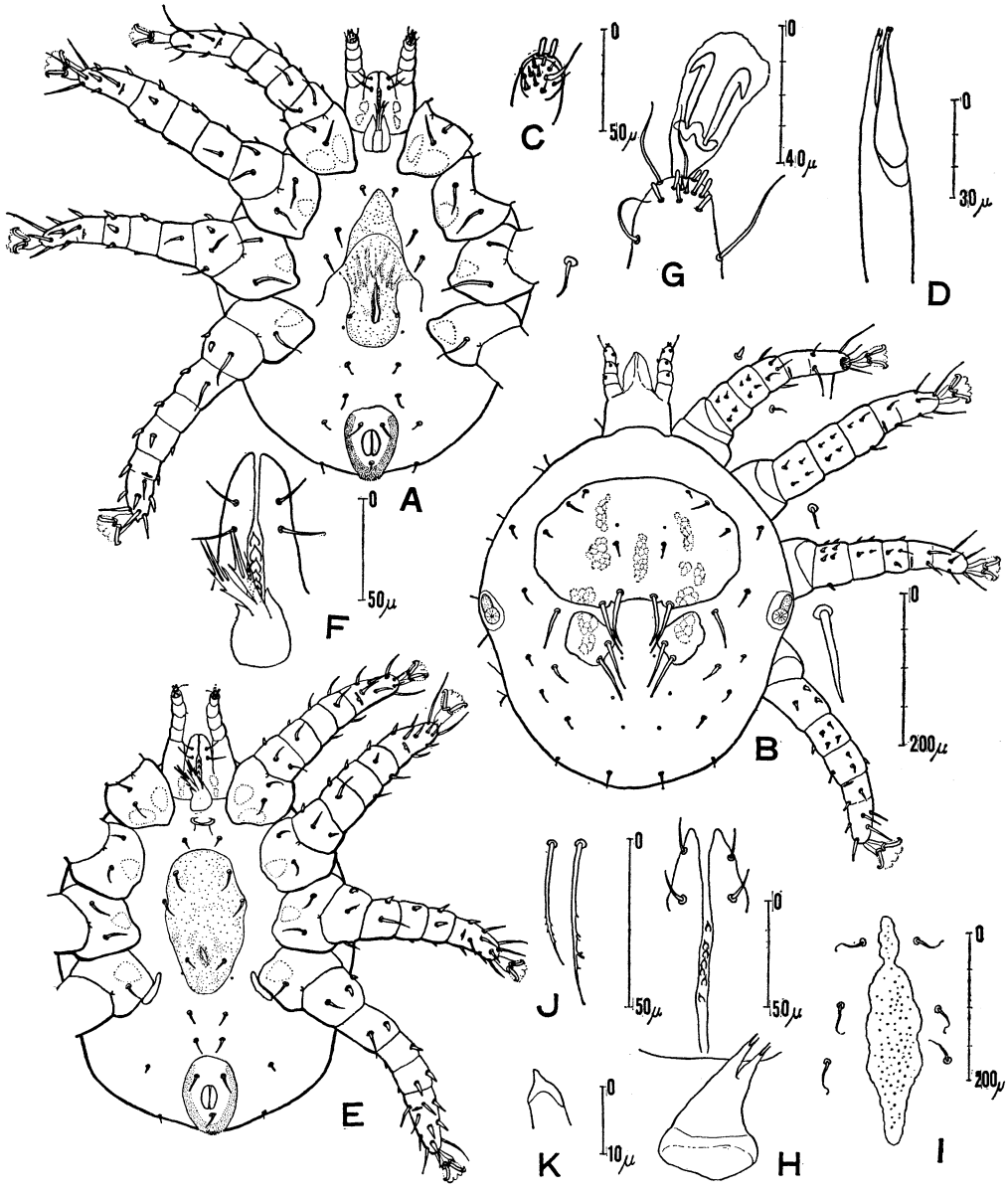

Fig. 6. *Mesonyssus neopsittaci* Wilson, n. sp. A, ♀ ventral view with enlarged drawing of 3rd sternal seta; B, ♀ dorsal view with enlarged drawings of median and postero-median podosomal plate setae and leg setae; C, ♀ apex of palp tibia-tarsus; D, ♀ chelicera; E, ♂ ventral view; F, ♂ tritosternum and gnathosoma; G, ♂ apex of tarsus I; H, nymph tritosternum and gnathosoma; I, nymph sternal area; J, nymph posterior dorsal opisthosomal setae; K, nymph apex of chelicera.

and IV, 93 μ (97–87), all setae on coxae slender and tapering, that on coxa IV only slightly stouter than those on coxa I, other leg setae as coxal setae or conical as illustrated, number of setae on coxae, 2, 2, 2, 1, trochanters, 4, 4, 4, 3, femora, 6,6,6,5, genua, 6,6,6,6 and tibia, 7, 7, 7, 7, apex of tarsus I with 2 long slender vertical setae, several short peg-like setae, apex of tarsi II–IV extended mid-ventrally into small spine, tarsal claws well developed, all of about equal size.

♂. Measurements the mean of 2 specimens. Body: smaller than ♀, idiosoma 493 μ long, 398 μ wide. Dorsum: similar to ♀, podosomal plate 201 μ long, 274 μ wide, opisthosomal plate 71 μ long, 59 μ wide. Venter: similar to ♀, sterno-genital plate over 2× as long as wide, 177 μ long, 83 μ wide, 1st and 3rd pair of sternal setae off plate, 2nd pair on margin, genital setae on sub-margin of plate, sometimes 1 or both of 2nd pair of sternal setae off plate and 1 genital seta missing, genital pore located well in front of 1st pair of sternal setae, anal plate, 104 μ long, 77 μ wide. Gnathosoma: similar to ♀. Legs: length of tarsus I, 70 μ, II, 66 μ, III, 71 μ and IV, 86 μ, chaetotaxy as in ♀.

Deutonymph: Measurements, except opisthosomal and sternal plate, the mean of 2 specimens. Body: length of idiosoma 543 μ, width 425 μ. Dorsum: similar to adult, podosomal plate with setae as in adult except antero-lateral ones not on plate or sometimes 1 on margin, divided opisthosomal plate, 50 μ long, 30 μ wide, setae not on plates and sometimes represented by only 1 pair rather than 2, about 8 pairs of body setae, posterior pair slightly longer than in adult and barbed. Venter: tritosternum with distally bifurcate laciniae, 1 specimen with multifurcate laciniae, sternal plate 170 μ long, weakly punctate, extending from about midpoint of coxae II to midpoint of coxae IV, flanked by 3 pairs of sternal setae, anterior margin extending beyond 1st pair of sternal setae, other characters similar to adult. Gnathosoma: deutosternal groove with 7(5) rows of teeth, 1 tooth per row, other characters similar to adult. Legs: length of tarsus I, 87 μ, II–III, 72 μ, and IV, 87 μ, chaetotaxy as in adult.

Protonymph: One specimen available. Body: idiosoma 451 μ long, 338 μ wide. Dorsum: no plates but podosomal and opisthosomal plate setae of adult present, 2 pairs of opisthosomal body setae. Venter: tritosternum present but not clearly distinguishable, no plates, 3 pairs of sternal setae, 3 anal setae, 2 pairs of opisthosomal body setae. Gnathosoma: similar to adult. Legs: number of setae on coxae and trochanters same as adult, other segments appear to have fewer setae but difficult to distinguish them.

Larva: One ♀ contained a larva which was extruded when the mite was mounted. In a curled position it measured 414 μ long, 353 μ wide, there are no visible plates, the chela is distinctly visible in lateral view as a sclerotized hook-like process not unlike the movable chela of adults of *Sternosoma tracheacolum* (see Fain & Hyland, 1962). There are 4 pairs of dorsal setae, 2 pairs podosomal, 2 pairs opisthosomal, 2 pairs of ventral setae, 1 pair opisthosomal, 1 pair anal, only 1 sternal seta can be seen, however there may be more as it is difficult to distinguish features in this area. All tarsi have several setae and the other leg segments very few setae, tarsal claws well developed on all legs.

Holotype ♀ (BISHOP 3635), NW New Guinea, Enarotali, 1900 m, *Neopsittacus pullicauda* (BBM-NG 21413), 20. VII. 1962, N. Wilson.

Paratypes: 1 ♀, NE New Guinea, Bulldog Road, 2440 m, *Neopsittacus pullicauda* (HC 211), 27. V. 1962, H. Clissold; 1 ♂, NW New Guinea, Enarotali, 1900 m, *Neopsittacus pullicauda* (BBM-NG 21308), 6. VII. 1962, Wilson; 1 ♂, 3 ♀♀, 2 NN, NW New Guinea, Ena-

rotali, 1900 m, *Psittacella modesta* (BBM-NG 21491), 1. VII. 1962, Wilson; 1 ♂, 1 ♀, NW New Guinea, Enarotali, 1900 m, *Neopsittacus pullicauda* (BBM-NG 21514), 6. VIII. 1962, Wilson; 4 ♀♀, NW New Guinea, Lake Anggi Gidji, 1950 m, *Psittacella brehmii* (BBM-NG 22466), 5. III. 1963, M. Thompson; 3 ♀♀, 1 N, NE New Guinea, Tambul, 2260 m, lorikeet (BBM-NG 27955), 30. V. 1963, Clissold; 1 ♂, 2 ♀♀, NE New Guinea, McAdam Reserve, 1220 m, lory (BBM-NG 28441), 13. VI. 1963, P. Shanahan; 1 ♂, 1 ♀, 1 N, NE New Guinea, Nakata Ridge, 1525 m, nr. Wau, lorikeet (BBM-NG 28521), 28. VI. 1963, Shanahan; 1 ♂, 1 N, NE New Guinea, Bulldog Road, 2440 m, *Psittacella brehmii* (BBM-NG 28927), 14. VIII. 1963, Clissold.

Other specimens: All NE New Guinea. 1♀, Tambul, 2260 m, lorikeet (BBM-NG 27955), 30. V. 1963, Clissold; 3 N, Bulldog Road, 2440 m, *Psittacella brehmii* (BBM-NG 28927), 14. VIII. 1963, Clissold.

The 23 adult specimens from 6 widely scattered localities and 10 different individuals showed little variability in characters. The only exceptions were 1 ♂ and 2 ♀♀ which have a loss of one seta and/or one seta off one of the opisthosomal plates.

M. neopsittaci is nearest *M. trichoglossi* and *M. domicellae* n. sp. in that all have an anteriorly divided opisthosomal plate and some of the dorsal setae long and stout. *M. neopsittaci* may be distinguished from the others by the 8 stout, simple setae on the dorsal plates while *M. trichoglossi* and *M. domicellae* have 12 or more such setae which are furled.

At Enarotali 5 of 17 *Neopsittacus pullicauda*, were infested (29%) with a total of 6 mites. One of 4 *Psittacella modesta* from the same locality was infested (25 %) with 6 mites. Infested parrots carried very low populations of these mites in their nares and it is possible they occurred deeper in the respiratory system of the host in such areas as the trachea, bronchi or lungs. These areas were not checked in the birds which I examined. The infestation rate was very close to the rate for all birds which I examined in New Guinea (Wilson, 1964).

Mesonyssus domicellae Wilson, n. sp. Fig. 7.

Diagnosis: A large mite with a well defined podosomal plate, reduced and longitudinally divided opisthosomal plate and several small platelets, all of which have some strong furled setae, sternal plate with 2nd and 3rd pair of sternal setae on plate, anal plate with 3 setae, ventral leg setae becoming progressively stouter from I to IV.

♀. Measurements, except podosomal plate, the mean of 3 specimens. Body: length of idiosoma 930 μ, width 657 μ. Dorsum: with 3 plates and several small platelets, all well defined and with furled setae, podosomal 320 μ long, 503 μ wide, with broadly rounded anterior and lateral margins, posterior margin sinuous with median notch, 3 pairs of long furled, submarginal antero-lateral setae, median pair strongest followed by posterior and anterior pair, 2 pairs of long furled, marginal postero-lateral setae, 1 pair of which is sometimes disconnected from podosomal plate and on small platelet, 1 pair of short, usually furled, median setae, 3 pairs of long furled, marginal postero-median setae which are always longest on plate, opisthosomal reduced to anterior portion, equally divided, 100 μ long, 86 μ wide, with 3 long furled setae along inner margin, 14 (16–11) pairs of furled setae lateral to podosomal and opisthosomal plates, many on small platelets and most about as long as longest setae on plates, a few very short setae lateral and not on platelets, posterior to

opisthosomal plates are 4 pairs of pores and 3–4 pairs of setae, the latter become smaller and more tapering as you proceed posteriorly, stigma dorsal, between coxae III–IV, peritreme short, both enclosed in oval shieldlet difficult to distinguish except in well cleared specimens. Venter: tritosternum poorly developed, with large rounded hyaline base, 2 slender laciniae bifid at tip for about 1/8–1/4 their length, sternal plate present but margin poorly defined, approximately pyramid-shaped, weakly punctate and lined as illustrated, width at 3rd pair of sternal setae 147 μ, 1st pair of sternal setae off plate, 2nd and 3rd pairs on margin although 3rd pair sometimes weakly connected to plate, anterior margin even with or projecting slightly beyond 1st pair of sternal setae, posterior margin indefinite but appearing to extend to about midpoint of coxae IV, genital plate narrow, slightly concave laterally, rounded posteriorly, 224 μ long, 72 μ wide at level of setae, with well defined median longitudinal area of muscle insertion, 1 pair of short marginal setae, one seta missing or a 3rd one present, weakly rayed anterior margin extends about 1/3 distance between 3rd and 2nd pair of sternal setae, metasternal setae absent, 1 pair of small pores lateral to plate, anal plate ventral, oval, 169 μ long, 116 μ wide, sides thickened antero-laterally, laterally and posteriorly in front of well developed cribrum, paranal setae located in front of and lateral to anal pore, extending almost to its posterior margin, postanal seta shorter, extending to about anterior margin of cribrum, 5–6 pairs of opisthosomal setae, 3 stout pairs lying in 2 rows between genital and anal plate, 2–3 smaller pairs lying lateral to anal plate. Gnathosoma: weak deutosternal groove with about 2–4 rows of teeth, 1 tooth per row, these very difficult to see in most specimens, 2 pairs of long slender hypostomal setae about equal in size and lying in vertical row, dorsally palp femur with 2 small conical external setae, genu with 1 internal, 1 external and 1 median conical setae, tibia with 1 long slender external and 1 short conical internal seta, ventrally palp tibia with several short conical setae, 2 long peg-like setae and 1 long slender seta surrounding palp tarsus, the latter contains several short conical setae, chelicera 142 μ long, movable digit 41 μ long, broadest at base, with tip slightly expanded and fluted, fixed digit narrow with fluted or bifid tip. Legs: length of tarsus I, 149 μ, II, 132 μ, III, 140 μ and IV, 155 μ, setae on coxa I slender and tapering, coxa II the same except slightly heavier, coxa III with anterior seta conical, posterior seta slender, coxa IV with conical seta, texture of other ventral leg setae similar to those of coxae, *i. e.* becoming stouter from I to IV, number of setae on coxae 2, 2, 2, 1, trochanters 4, 4, 4, 3, femora 7, 7, 7, 7, genua 6, 6, 6, 7, tibiae 7, 7, 7, 7, apex of tarsus I with 2 long vertical setae, several short conical and peg-like setae, apex of tarsus II–IV extended mid-ventrally into small spine, tarsal claws well developed, all of about equal size.

♂. Measurements, except podosomal plate, the mean of 2 specimens. Body: smaller than ♀, idiosoma 765 μ long, 550 μ wide. Dorsum: similar to ♀, podosomal plate 259 μ long, 423 μ wide, opisthosomal plate 99 μ long, 73 μ wide. Venter: similar to ♀, laciniae of tritosternum may be simple, sternogenital plate over twice as long as wide, 275 μ long, 126 μ wide, sternal and genital setae located as in ♀, genital pore located well in front of 1st pair of sternal setae, anal plate 127 μ long, 103 μ wide. Gnathosoma: similar to ♀, chelicera and movable digit, 120 μ and 47 μ long, respectively. Legs: length of tarsus I, 118 μ, II, 101 μ, III, 111 μ and IV, 129 μ, chaetotaxy as in ♀.

Deutonymph. One specimen available. Body: length of idiosoma 490 μ, width 380 μ, strong setae furled. Dorsum: weakly developed podosomal and opisthosomal plate with shape similar to adult, the latter 53 μ long, 28 μ wide, and not paired in the 1 specimen,

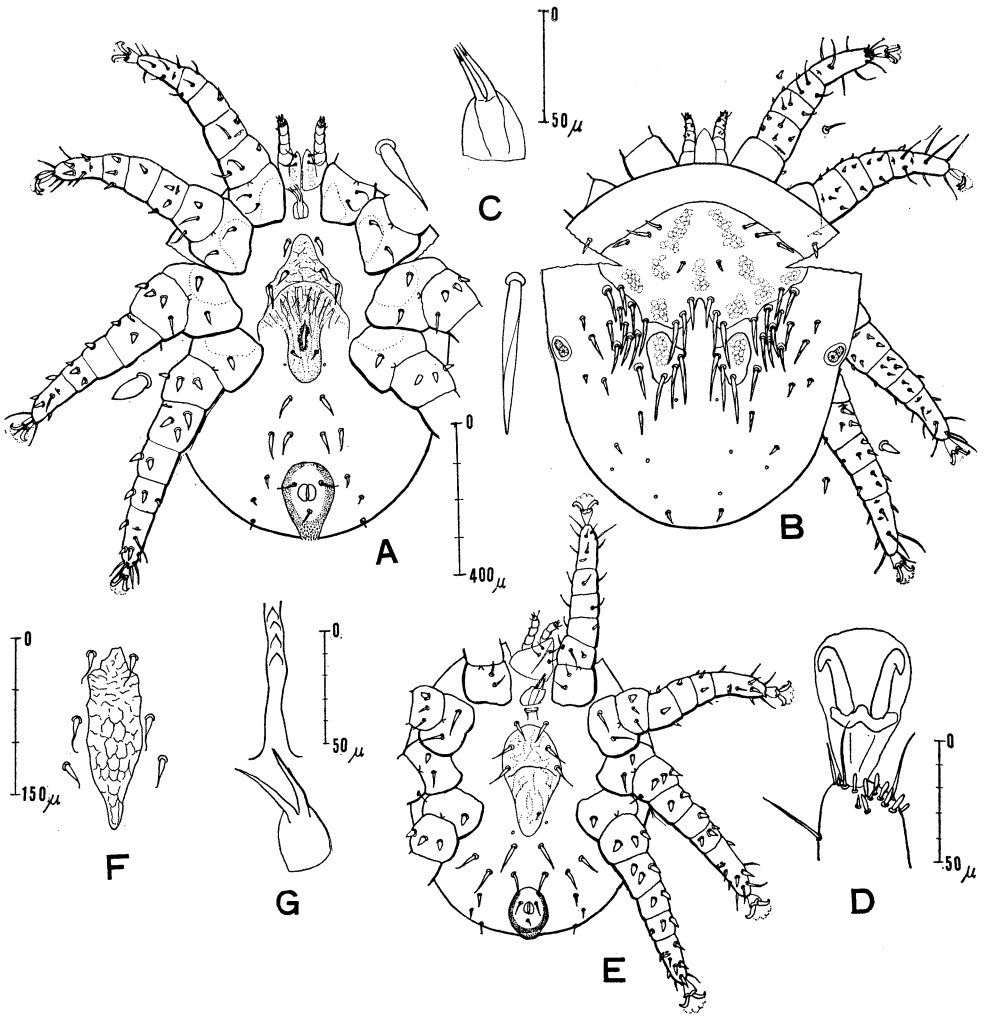

Fig. 7. *Mesonyssus domicellae* Wilson, n. sp. A, ♀ ventral view with enlarged drawings of 3rd sternal seta and leg seta; B, ♀ dorsal view with enlarged drawings of postero-median podosomal plate seta and leg setae; C, ♀ tritosternum; D, ♀ apex of tarsus I; E, ♂ ventral view; F, nymph sternal area; G, nymph tritosternum and deutosternal groove.

paired opisthosomal plates considered normal, 6 antero-lateral setae of podosomal plate and 6 setae of opisthosomal plate off plate, 4 postero-lateral and 6 postero-median setae of podosomal plate only weakly attached to plate, body setae similar to adult except posterior pair much longer and slimmer. Venter: tritosternum with simple laciniae, weakly sclerotized sternal plate 306 μ long, 94 μ wide, extending from posterior margin of coxae I to midpoint of coxae IV, 3 pairs of long inflated sternal setae adjacent to plate, 5–7 pairs of opisthosomal setae, stigma, peritreme and anal plate similar to adult. Gnathosoma: deutosternal groove better developed than in adult (or at least better seen), with 4 rows of teeth, 1

tooth per row, other characters as in adult. Legs: length of tarsus I, 87 μ, II, 92 μ, III, 94 μ and IV, 108 μ, number of leg setae as in adult except femur II has 9 setae, femora III–IV, 6, genu IV, 6, other characters similar to adult.

Holotype ♀ (BISHOP 3636). NE New Guinea, May River, 120 m, *Domicella lory* (BBM-NG 22634), 3. VI. 1963, P. Temple.

Paratypes: 2 ♂♂, 2 ♀♀, 1 N, with same data as holotype.

M. domicellae is nearest *M. trichoglossi* and would key to it in Domrow's (1964) key. It may be separated from *M. trichoglossi* by the shape of the coxal setae which become progressively stouter from coxae I to IV in *M. domicellae* but are all long and slender in *M. trichoglossi*. In addition to the coxae there are differences in the setae of the other leg segments between the two species. *M. domicellae* has only 3 stout furled setae on the inner margin and none on the outer margin of the opisthosomal plates while *M. trichoglossi* has 3–6 such setae (usually 4) on the inner margin and 1–2 on the outer margin.

Mesonyssus trichoglossi (Domrow) Fig. 8.

1 ♂, NE New Guinea, Mumeng (Marposvill), 915 m, dusky lory (BBM-NG 20353), 2. III. 1963, P. Shanahan; 1 ♀, NE New Guinea, Mumeng, 765 m, lorikeet (BBM-NG 21227), 16. II. 1963, H. Clissold; 1 ♂, NW New Guinea, Enarotali, 1900 m, *Charmosyna papou*, 21. VII. 1962, Clissold; 1 ♂, 1 ♀, NW New Guinea, Biak, *Trichoglossus haematodus* (BBM-NG 22502), 17. III. 1963, M. Thompson; 1 ♀, NE New Guinea, Ambunti, 60 m, *Pseudeos fuscata* (BBM-NG 22552), 4. V. 1963, Temple.

The following descriptive notes, based on New Guinea specimens, may be added to those given by Domrow (1964) in his original description. Body: ♀ length of idiosoma 840 μ, width 640 μ, ♂ length 603 μ, width 447 μ. Dorsum: ♀ podosomal plate 313 μ long, 349 μ wide, ♂ 260 μ long, 306 μ wide, antero-lateral setae as well developed as postero-median setae, 1 pair of pores anterior to 1st pair of antero-lateral setae, 5–6 postero-median setae, ♀ opisthosomal plate 124 μ long, 108 μ wide, ♂ 99 μ long and wide, 3 setae on inner and 1 on outer margin of all specimens, integument with 10–14 pairs of setae of which 7–11 pairs developed as well as heavy setae on dorsal plates, some furled and on small platelets. Venter: genital plate with well defined median longitudinal area of muscle insertion, genital setae on plate in ♂, ♀ anal plate 161 μ long, 111 μ wide, ♂ 124 μ long, 89 μ wide, sides thickened posteriorly, laterally and antero-laterally, 1 pair of pores lateral to genital plate, 4–6 pairs of body setae, 1 pair posterior to genital plate, 2 pairs anterior to anal plate, 2 pairs lateral to anal plate. Gnathosoma: ♀ chelicera 136 μ long, movable digit 40 μ long, widest at base, appearing to be weakly fluted at tip, fixed digit expanded and fluted at tip. Legs: length of ♀ tarsus I, 159 μ, II, 116 μ, III, 120 μ and IV, 157 μ, ♂, I, 94 μ, II, 95 μ, III, 93 μ and IV, 117 μ, leg setae rather strong, peg-like on trochanter and femur, number of setae on coxae, 2, 2, 2, 1, trochanters 4(3), 5, 4, 3, femora, 7, 7, 6, 5, genua, 6, 6, 6(7), 6(7), and tibiae, 7, 7, 7, 7(6).

Specimens from New Guinea differed in several minor respects from those from Australia. Most noticeable of these differences was the well developed median longitudinal area of muscle insertion on the genital plate, stouter and more numerous dorsal body setae, fewer podosomal and opisthosomal plate setae and stouter leg setae. In general the New Guinea specimens may be said to resemble the variants of this species described by Domrow (1964)

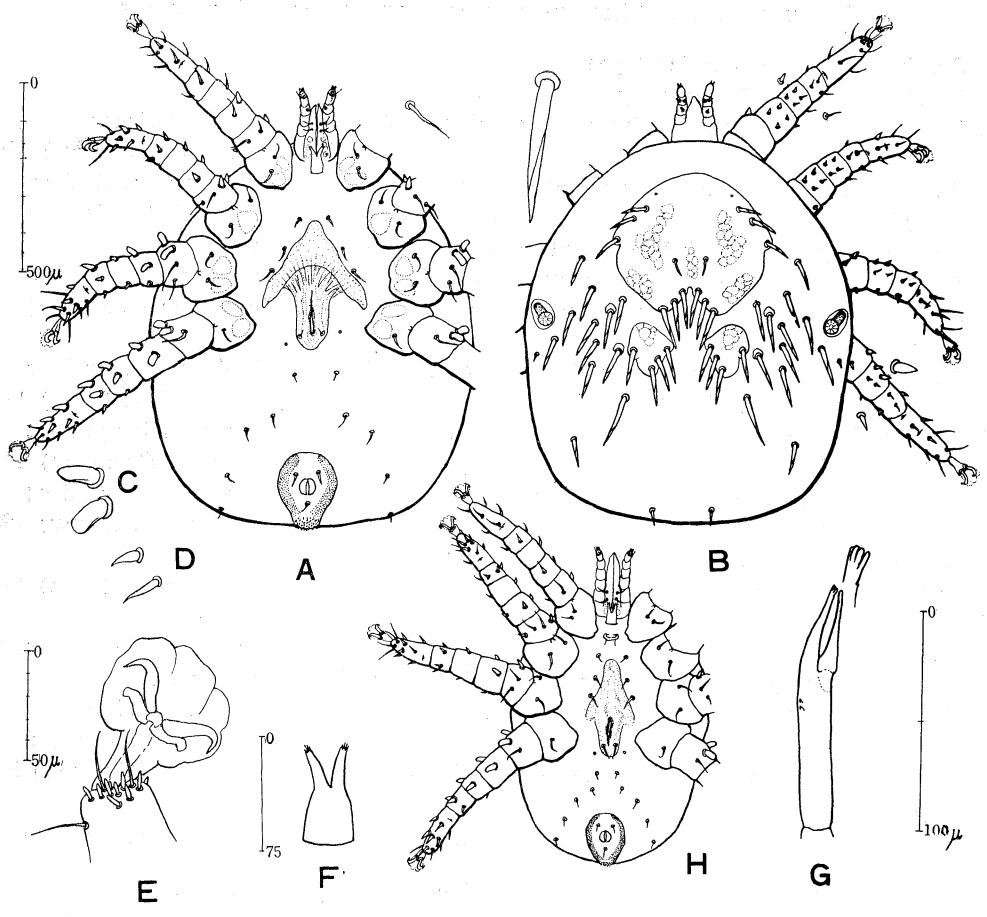

Fig. 8. *Mesonyssus trichoglossi* (Domrow). A, ♀ ventral view with enlarged drawing of 3rd sternal seta; B, ♀ dorsal view with enlarged drawings of postero-median podosomal plate seta and leg setae; C, ♀ wedged-shaped setae on venter of femur IV of New Guinea specimen; D, ♀ conical setae on venter of femur IV of Australian specimen (paratype); E, ♀ apex of tarsus I; F, ♀ tritosternum; G, ♀ chelicera with enlarged drawing of fixed digit; H, ♂ ventral view.

rather than the typical form. The New Guinea records add three new hosts to the two listed by Domrow (1964).

The four species of *Mesonyssus* from the Psittacidae with anteriorly divided opisthosomal plates exhibit interesting degrees of development in relation to the dorsal chaetotaxy. *M. psittaculae* lacks long stout dorsal setae entirely, *M. neopsittaci* has a small number of these setae, however they are simple and none are on platelets, *M. trichoglossi* and *M. domicellae* have numerous such setae, all of which are furled and some of which are on platelets.

A key to the species of *Mesonyssus* from the Psittacidae follows. Only *M. baforti* and *M. psittaculae* have not been seen.

KEY TO SPECIES OF MESONYSSUS FROM PSITTACIFORMES: PSITTACIDAE

1. Opisthosomal plate well developed 2
   Opisthosomal plate fragmentary 3
2. Opisthosomal plate with 2 pairs of setae, all ventral leg setae long and slender ..... **kakatuae** (Domrow) 1964
   Opisthosomal plate with 1 pair of setae, some ventral leg setae stout and conical or peg-like ..... **alisteri** Wilson, n. sp.
3. Anterior fragment of opisthosomal plate entire, postanal seta absent 4
   Anterior fragment of opisthosomal plate divided, postanal seta present 6
4. Anterior fragment of opisthosomal plate with cluster of 10–12 extremely long setae; tritosternum present 5
   Anterior fragment of opisthosomal plate without cluster of 10–12 extremely long setae; tritosternum absent ..... **baforti** (Fain) 1963
5. Anterior fragment of opisthosomal plate with cluster of 10 extremely long setae; metasternal setae present ..... **aprosmicti** (Domrow) 1964
   Anterior fragment of opisthosomal plate with cluster of 12 extremely long setae; metasternal setae absent ..... **platycerci** (Domrow) 1964
6. Dorsal plates with some strong setae 6
   Dorsal plates without strong setae ..... **psittaculae** (Fain) 1962
7. Strong setae of podosomal and opisthosomal plates simple, 8 or less ..... **neopsittaci** Wilson, n. sp.
   Strong setae of podosomal and opisthosomal plates furled, 12 or more 7
8. Coxa IV with a stout conical seta, 2nd and 3rd pair of sternal setae on plate ..... **domicellae** Wilson, n. sp.
   Coxa IV with a slender tapering seta, all sternal setae off plate... **trichoglossi** (Domrow) 1964

HOST AND LOCALITY LIST OF MESONYSSUS FROM PSITTACIFORMES: PSITTACIDAE

Host	Locality	Species
Aprosmictus erythropterus	Australia	*aprosmicti* (Domrow)
Charmosyna papou	New Guinea	*trichoglossi* (Domrow)
Domicella lory	New Guinea	*domicellae* n. sp.
Kakatoe roseicapilla	Australia	*kakatuae* (Domrow)
Neopsittacus pullicauda	New Guinea	*neopsittaci* n. sp.
Platycercus adscitus	Australia	*platycerci* (Domrow)
Pseudeos fuscata	New Guinea	*trichoglossi* (Domrow)
Psittacella brehmii	New Guinea	*neopsittaci* n. sp.
Psittacella modesta	New Guinea	*neopsittaci* n. sp.
Psittacula cyanocephala	Belgian Zoo (India)	*psittaculae* (Fain)
Psittacula krameri	Africa	*baforti* (Fain)
Trichoglossus chlorolepidotus	Australia	*trichoglossi* (Domrow)
Trichoglossus haematodus	New Guinea	*trichoglossi* (Domrow)
Trichoglossus moluccanus	Australia	*trichoglossi* (Domrow)
king parrot (*Alisterus*?)	New Guinea	*alisteri* n. sp.

Genus **Ptilonyssus** Berlese and Trouessart

The genus *Ptilonyssus* is used here as it is interpreted by Fain (1957) or *Ptilonyssus sensu lato.*

Ptilonyssus ailuroedi Domrow

9 ♀♀, 2 ?? (3 ♀♀, 2 ?? in alcohol), NE New Guinea, Bulolo River, 915 m, *Ailuroedus buccoides* (BBM-NG 27846), 23. V. 1963, P. Shanahan.

This species recently has been described (Domrow, 1964) from Australia from *Ailuroedus crassirostris.* Our specimens agree well with the description and figures with one exception. There are minute cone-like setae and long fine setae on the venter of trochanters I–IV. Domrow (1964) mentions only minute cone-like setae on the ventral basal segments of the legs of his specimens. On specimens preserved in alcohol the mid-dorsal shield is on a hump above the remainder of the dorsal body surface. This is readily seen on alcohol preserved specimens but difficult to distinguish or illustrate on slide mounted specimens.

Ptilonyssus echinatus Berlese and Trouessart Fig. 9.

1 ♀, United States, Indiana, Posey Co., Mt. Vernon, *Riparia riparia* (E 539), 26. VI. 1958, N. Wilson.

Some of the setae on the coxa, trochanter and femur are tapering with swollen bases rather than blunt as described and illustrated by George (1961). Only 1 or 7 bank swallows (14 %), including 4 young from nests, was infested with *P. echinatus.* One tree swallow and 2 rough-winged swallows examined in Indiana were without mites. This species has been reported from Africa, Asia, Europe and the states of Florida, Kansas and Texas in the United States.

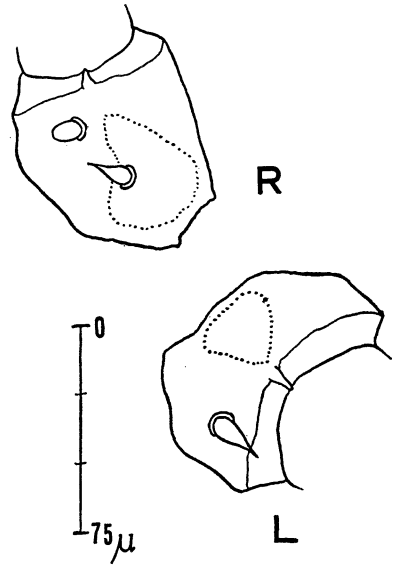

Fig. 9. *Ptilonyssus echinatus* Berlese & Trouessart. Right coxa I and left coxa IV.

Ptilonyssus hirsti (Castro and Pereira)

Specimens: Hawaii and N. America. 13 ♂♂, 21 ♀♀, 2 NN, Hawaii, Hawaii Co., Honokaa, *Passer domesticus* (E 1631), 9. I. 1962, N. Wilson; 11 ♂♂, 35 ♀♀, 4 NN, 2 LL, Hawaii Co., Honokaa, *Passer domesticus* (E 1632), 12.I.1962, Wilson; 2 ♂♂, 6 ♀♀, 4 NN, 1 L, Hawaii, Hawaii Co., Honokaa, *Passer domesticus* (E 1634), 16.I.1962, Wilson; 6 ♀♀, 1 N, 1 L, Hawaii, Hawaii Co., Honokaa, *Passer domesticus* (E 1635), 18.I.1962, Wilson; 7 ♂♂, 15 ♀♀, Hawaii, Hawaii Co., Honokaa, *Passer domesticus,* (E 1636) 19.I.1962, Wilson; 2 ♂♂, 5 ♀♀, 2 NN, Hawaii, Hawaii Co., Honokaa, *Passer domesticus* (E 1637), 20.I.1962, Wilson; 1 ♂, 6 ♀♀, Hawaii, Hawaii Co., Honokaa, *Passer domesticus* (E 1658), 9.II.1962, Wilson; 6 ♂♂, 11 ♀♀, 3 NN, 1 L, Hawaii, Hawaii Co., Honokaa, *Passer domesticus* (E 1659), 10.II.1962, Wilson; 3 ♂♂, 9 ♀♀, 1 N, 1 L, Hawaii, Hawaii Co., Hono-

kaa, *Passer domesticus* (E 1660), 11.II.1962, Wilson; 7 ♀♀, 1 N, Illinois, Crawford Co., Eaton, *Passer domesticus* (E 1254), 27. XI. 1959, J. L. Mumford; 3 ♀♀, 1 N, Indiana, Lagrange Co., Curtis Creek Trout Rearing Station, *Passer domesticus* (E 578), 10. VII. 1958, Wilson; 1 ♂, 3 ♀♀, Indiana, Tippecanoe Co., West Lafayette, *Passer domesticus* (E 958), 17. VII. 1958, K. Long; 1 N, Indiana, Allen Co., Arcola, *Passer domesticus* (E 794), 2. II. 1959, R. E. Mumford; 1 N, Indiana, Tippecanoe Co., South Raub, *Passer domesticus* (E 1119), 6.VIII.1959, Wilson; 1 ♂, 4 ♀♀, 1 L, Indiana, Tippecanoe Co., West Lafayette, *Passer domesticus* (E 1127), 12.VIII.1959, D. Parmelee; 3 ♀♀, 1 N, Kentucky, Nelson Co., Bardstown, *Passer domesticus* (E 1027a), 5. VI. 1959, Wilson; 1 ♂, 2 ♀♀, 3 NN Kentucky, Nelson Co., Bardstown, *Passer domesticus* (E 1027d), 21. VI. 1959, Wilson.

This species has been recorded previously from Africa, Europe, South America and the state of Texas in the United States. It appears to be a common parasite of house sparrows in Hawaii as 20 of the 21 birds (95%) examined were infested. A lower infestation rate was found in the midwestern United States where 8 of 38 birds (21%) were infested.

Ptilonyssus icteridius (Strandtmann and Furman)

Specimens: All United States. 5 ♀♀, 1 N, Indiana, Kosciusko Co., Etna Green, *Quiscalus quiscula* (E 500), 19.VI.1958, N. Wilson; 3 ♀♀, Indiana, Tippecanoe Co., West Lafayette, *Quiscalus quiscula* (E 403), 11.IV.1959, K. Long & D. Parmelee; 1 ♀, Indiana, Tippecanoe Co., West Lafayette, *Molothrus ater* (E 895), 14.IV.1959, L. Chandler; 3 ♀♀, 1 N, Indiana, Tippecanoe Co., West Lafayette, *Quiscalus quiscula* (E 909c), 18. IV. 1959, T. L. Chandler; 2 ♀♀, Indiana, Tippecanoe Co., Montmorenci, *Molothrus ater* (E 947a), 1.V.1959, Wilson; 2 ♀♀, Indiana, Tippecanoe Co., West Lafayette, *Quiscalus quiscula* (E 989a), 22. V.1959, T. L. Chandler; 1 ♀, Indiana, Marion Co., Indianapolis, *Agelaius phoeniceus* (E 1226), 4.VII.1959, H. C. West; 1 ♂, 2 ♀♀, Indiana, Tippecanoe Co., Montmorenci, *Molothrus ater* (E 1412), 26.IV.1960, R. E. Mumford.

P. icteridius is known from 9 species of passeriform hosts, all but 1 belonging to the family Icteridae. It has been reported from one or more localities in Alabama, California, Pennsylvania and Texas.

Ptilonyssus nudus Berlese and Trouessart

4 ♀♀, Indiana, Montgomery Co., Browns Valley, *Passer domesticus* (E 1022), 10.VI.1959, N. Wilson.

This species was found in 1 of 38 house sparrows (3%) examined from the midwestern United States and not at all in 21 birds examined in Hawaii. An earlier study in Kentucky, in which no special effort was made to collect nasal mites, indicated an infestation rate (4%) very close to that found in the midwestern United States for this species (Wilson, 1958).

P. nudus has been reported from Africa, Asia, Europe and the states of Kentucky and Texas in the United States. It does not appear to occur as frequently or in as large numbers in *Passer domesticus* as *P. hirsti*.

Ptilonyssus richmondenae George

Specimens: All United States. 2 ♂♂, 3 ♀♀, Indiana, Brown Co., Nashville, *Richmondena cardinalis* (E 903), winter 1958, F. Maffitt; 7 ♀♀, Indiana, Wayne Co., *Richmondena*

cardinalis (E 1234), fall 1950.

This species has been reported previously from Georgia, Kansas and Texas in the United States.

Genus **Rhinonyssus** Trouessart

Rhinonyssus coniventris Trouessart Fig. 10.

Specimens: 1♂, 1♀, SE New Guinea (Papua), Cape Kileton, 2 m, sandpiper (BBM-NG 29224), 16.X.1963, H. Clissold; 1♂, 1♀, Hawaii Is., Oahu, Kaena Point, *Pluvialis dominica*, 9.II.1963, C. J. Mitchell & R. W. Strandtman; 2 ♀♀, 1 L, Hawaii Is., Oahu, Honolulu, *Pluvialis dominica*, 20. II. 1963, Mitchell & Strandtmann; 1 ♂, 2 ♀♀, 1 N, Hawaii Is., Oahu, Honolulu, *Pluvialis dominica*, 27.III.1963, Strandtmann.

The following descriptive notes on the larva and protonymph are added to those previously given by Strandtmann (1951). Larva idiosoma 630 μ long, 450 μ wide, with 3 pairs of sternal setae, smaller but of the same shape as in the adults (Strandtmann's specimens had only 2 pairs of sternal setae), coxal setae 2,2,2, shape as in the adult. Length of leg I, 420 μ, II, 380 μ and III, 370 μ. Ventral opisthosomal region with about 3 pairs of setae, the anterior pair appendiculate, the two posterior pairs stout and blunt. Several small pores are scattered over the dorsal surface and there are no dorsal or ventral plates. The anal pore is visible.

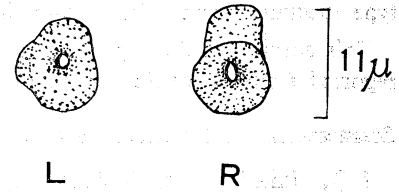

Fig. 10. *Rhinonyssus coniventris* Trouessart. Protonymph right stigma with peritreme and left stigma.

The larva contains a fully developed protonymph which has leg and body setae as in the adult, except weaker. There are no dorsal or ventral plates and the anal pore is visible. The 2 stigmas are very small and 7 and 11 μ in length. The smaller one has a very short, but distinct, 4 μ long peritreme. The chelicera is short and stout.

This species has a widespread distribution having been reported from Africa, Asia, Europe and Alaska, Florida and Texas in the United States. This is the first report of it from New Guinea and Hawaii. It is a common parasite of the Charadriidae and Scolopacidae but has not been reported previously from the American golden plover.

Rhinonyssus rhinolethrum (Trouessart)

Specimens: 1 ♀, NW New Guinea, Enarotali, 1740 m, *Anas superciliosa* (BBM-NG 21311), 8.VII.1962, N. Wilson; 4 ♀♀, 1 L, Enarotali, 1740 m, *Anas superciliosa* (BBM-NG 21332), 8.VII.1962, Wilson; 3 NN, 1 L, United States, Indiana, Fulton Co., Rochester, *Mergus merganser* (E 1478), XII.1959, R. E. Kern.

The New Guinea specimens agreed well with the descriptions and illustrations given by Mitchell (1963) with the exception of the ventral body setae. These were slightly longer and extended past the bases of the setae posterior to them.

R. rhinolethrum is a widespread mite having been reported from over 25 different species of Anatidae from many different parts of the world. It is considered host specific for this family of birds. Three of 20 *Anas superciliosa* (15%) which I examined at Ena-

rotali were infested with *R. rhinolethrum*. None of 6 *Aix sponsa*, 1 *Anas platyrhynchos* or 3 *Aythya collaris* examined in Indiana were infested. This is the first record of this species from *A. superciliosa* and from the Australian region.

Genus **Sternostoma** Berlese and Trouessart

Sternostoma francolini Fain Fig. 11.

1 ♀, NE New Guinea, Mur Mur, 2745 m, quail (BBM-NG 28113), 14. VI. 1963, H. Clissold.

Only one specimen is available, therefore an adequate comparison with the original description and figures cannot be made. It was smaller than the holotype from Northern Rhodesia or specimens from Belgium and about the same size as Vitzthum's specimens (locality unknown) cited by Fain (1961). The chaetotaxy of tarsi II–IV resembled the type specimen from Africa more than it did specimens from Europe.

This species would appear to have a widespread geographical distribution having been reported from *Francolinus coqui* in Africa and *Perdix p. perdix* in Europe.

Sternostoma tracheacolum Lawrence

1 ♀, United States, Indiana, Tippecanoe Co., West Lafayette, *Spizella pusilla* (E 1453), 11.V.1960, R. E. Mumford.

This is a widespread species having been reported from many parts of the world and the states of California, Massachusetts, Michigan, New Jersey and Rhode Island in the United States.

SCIENTIFIC AND COMMON NAMES OF BIRDS REFERRED TO IN PAPER[2]

Scientific name	Common name
Anseriformes	
Anatidae	
Aix sponsa	Wood duck
Anas platyrhynchos	Mallard
Anas superciliosa	Australian black duck
Aythya collaris	Ring-necked duck
Mergus merganser	Common merganser
Falconiformes	
Accipitridae	
Buteo rufofuscus augur	Jackal buzzard
Lophaetus occipitalis	Long-crested eagle
Milvus aegyptius tenebrosus	Yellow-billed kite
Galliformes	
Phasianidae	
Francolinus coqui	Coqui francolin
Perdix p. perdix	Gray partridge

2. This does not include those common names listed in the collection records. These were names applied by the collectors in the field and were not meant to imply a specific scientific name.

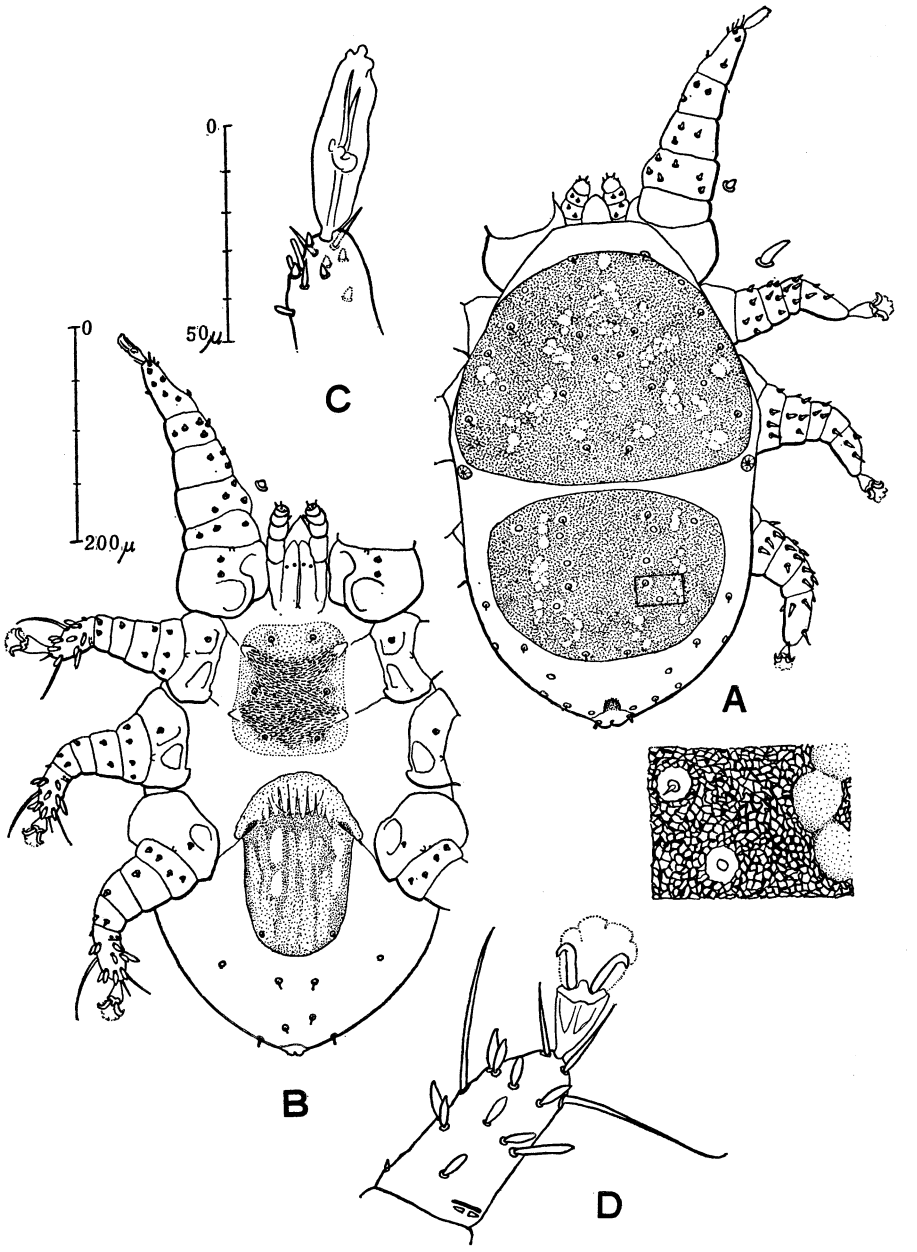

Fig. 11. *Sternostoma francolini* Fain. A, ♀ dorsal view with enlarged drawings of leg setae and portion of opisthosomal plate; B, ♀ ventral view with enlarged drawing of leg seta; C, ♀ apex of tarsus I; D, ♀ apex of tarsus II.

Charadriiformes	
Charadriidae	
Pluvialis dominica	American golden plover
Columbiformes	
Columbidae	
Columba g. guinea	Rock pigeon
Columba livia	Rock dove
Columbigallina passerina	Ground dove
Ducula pinon	Pinon fruit pigeon
Goura cristata	Common crowned pigeon
Ptilinopus ornatus	Ornate fruit dove
Ptilinopus perlatus	Pink-spotted fruit dove
Streptopelia capicola tropica	Cape turtle dove
Streptopelia d. decoto	Dove
Streptopelia l. lugens	Dove
Streptopelia s. semitorquata	Red-eyed turtle dove
Streptopelia s. senegalensis	Laughing dove
Streptopelia turtur hoggara	Dove
Treron c. calva	Green pigeon
Turtur afer	Blue-spotted wood dove
Zenaida a. asiatica	White-winged dove
Zenaidura macroura	Mourning dove
Psittaciformes	
Psittacidae	
Aprosmictus erythropterus	Red-winged parrot
Charmosyna papou	Papuan lorikeet
Domicella lory	Blackcapped lory
Kakatoe roseicapilla	Rose-breasted cockatoo
Neopsittacus pullicauda	Alpine Musschenbroek's lorikeet
Platycercus adscitus	Pale-headed rosella
Pseudeos fuscata	Dusky lory
Psittacella brehmii	Brehm's ground parrot
Psittacella modesta	Modest ground parrot
Psittacula cyanocephala	Blossom-headed parakeet
Psittacula krameri	Green parakeet
Trichoglossus chlorolepidotus	Scaly-breasted lorikeet
Trichoglossus haematodus	Edward's lorikeet
Trichoglossus moluccanus	Rainbow lorikeet
Passeriformes	
Hirundinidae	
Iridoprocne bicolor	Tree swallow
Riparia riparia	Bank swallow
Stelgidopteryx ruficollis	Rough-winged swallow
Ptilonorhynchidae	
Ailuroedus buccoides	White-eared catbird
Ailuroedus crassirostris	Green catbird

Icteridae	
Agelaius phoeniceus	Redwinged blackbird
Molothrus ater	Brown-headed cowbird
Quiscalus quiscula	Common grackle
Ploceidae	
Passer domesticus	House sparrow
Fringillidae	
Richmondena cardinalis	Cardinal

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ERIOSTETHUS MORLEY AND A NEW POLYSPHINCTINE GENUS (Ichneumonidae, Hymenoptera)

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Abstract: A polysphinctine genus *Eriostethus* Morley, is redescribed with 3 species now known (2 species considered new). The genus occurs in Australia and New Guinea. The species from New Guinea was collected from mossy forest. A new polysphinctine genus named *Millironia* is similar in general appearance to *Eriostethus* (compare figs. 1a & 14a). Seven species of *Millironia*, 5 of which are new, occur in Australia, New Guinea, Samoa, Japan, India and the Philippines. The Philippine species were caught in a light trap. The species from Japan was reported parasitic on a spider.

Only 17 specimens were available for study. For the loan of specimen I wish to thank the following: Dr. J. Linsley Gressitt, Bishop Museum, Honolulu, Hawaii; Dr. Henry Townes, University of Michigan, Ann Arbor, Michigan; Dr. G. S. Walley, Canada Department of Agriculture, Ottawa, Canada; Dr. M. A. Lieftinck, Leiden Museum, Leiden, Netherlands; and Dr. J. F. Perkins, British Museum of Natural History, London, England.

All the species discussed in this paper have the areolet absent, nervellus entire or unbroken, and would key to *Eriostethus* using Townes' key to Indo-Australian genera of Ichneumonidae (1961 : 428). The following differentiation will define the genus *Eriostethus* and will supplement couplet 3 of Townes' key:

Ocellar triangle not very prominent, ocelli not unusually large, distance of lateral ocellus from eye equal to or 1/2 diameter of ocellus; head profile as in fig. 1d: vertex gradually sloping behind posterior ocelli; temple slightly convex, malar space equal to basal width of mandible; occipital carina absent (in type) or if present, not