

THE CHEWING LOUSE GENUS *KAYSIUS* PRICE AND CLAYTON
(PHTHIRAPTERA: AMBLYCERA: MENOPONIDAE) FROM THE
PASSERIFORMES (AVES)

ROGER D. PRICE AND ROBERT C. DALGLEISH

(RDP) Department of Entomology and Plant Pathology, Oklahoma State University, Stillwater, OK 74078-0464, U.S.A.; (current address) 4202 Stanard Circle, Fort Smith, AR 72903-1906, U.S.A. (e-mail: rpricelice@aol.com); (RCD) 10601 Tierrasanta Boulevard, San Diego, CA 92124-2692, U.S.A. (e-mail: rcdalgleish@san.rr.com)

Abstract.—The menoponid genus *Kaysius* Price and Clayton, originally described as monotypic for *K. emersoni* Price and Clayton, is redefined and expanded to include two species previously placed in *Machaerilaemus* Harrison: *Menopon tityrus* Carriker and *Machaerilaemus cotingae* Carriker, both **new combinations**. Character states and illustrations are provided for the separation of these three species.

Key Words: chewing lice, *Kaysius*, Menoponidae, Phthiraptera, Passeriformes

When Price and Clayton (1989) described the menoponid chewing louse genus *Kaysius*, they did so basing it on the single new species, *Kaysius emersoni*, whose type host is *Glyphorhynchus spirurus* (Vieillot) from Peru. At that time, it was difficult to decide which features were of generic importance and which should be relegated only to the specific definition. This is virtually always the case in dealing with a monotypic genus such as this. However, when a recent study of the genus *Machaerilaemus* Harrison was undertaken, it was discovered that two of the 25 species placed in that genus to date actually are species belonging to *Kaysius*. With this finding that *Kaysius* is more widespread than initially thought, we have been able to re-examine the definition of *Kaysius* and contribute to the identification of these three species. We suspect that further collecting from additional passerines will broaden the known host range of *Kaysius* even further.

Kaysius Price and Clayton

Kaysius Price and Clayton 1989:29. Type species: *Kaysius emersoni* Price and Clayton, by monotypy.

The following features may be used to characterize species belonging to this genus. Little sexual dimorphism, except that associated with smaller male dimensions, reduced male setal numbers, and terminalia. Head width approximately twice its length; without preocular notch or slit; all temple setae 21-27 present (Fig. 3, numbering laterad from midline), with 24 and 26 very short, 25 and 27 very long; alveoli of temple setae 26 and 27 well separated; antennal fossa not deep, with antenna entirely or mostly exposed, but completely beneath head; gular plate pigmented only along setal bases; without ventral spinous processes; nodi and associated carinae weak; hypopharynx with weakly developed sclerites. Thorax with prosternal plate developed (Fig. 2), rounded posteriorly, usually without central setae, rarely with 1 central seta;

Table 1. Comparison of characters separating *Kaysius* from *Machaerilaemus*.

Character	<i>Kaysius</i>	<i>Machaerilaemus</i>
1. Alveoli of temple setae 26 & 27.	Well separated	Adjacent
2. Gular pigmentation	Only along setal bases	More extensive
3. Prosternal plate shape	Rounded posteriorly	Pointed posteriorly
4. Prosternal plate central setae	0-1	More than 3
5. Mesosternal plate setae	Only 2	More than 5
6. Sternite I	Distinctly separate	Fused with metasternum
7. Outermost seta on tergite I	Very short	Very long postspiracular
8. Male genitalia	Slight asymmetry with blunt parameres curved same direction	Symmetrical with long pointed outwardly curved parameres
9. Female subgenital plate margin	Straight to gently rounded	Distinct medioposterior convexity

outer central pronotal seta longer than minute inner seta; mesosternal plate with only 2 associated short setae; venter of femur III without ctenidia or well-developed brush; only 2 medioanterior mesonotal setae associated with postnotum. Abdomen with no tergites enlarged, divided, or with anterior setae; tergite I with short seta laterad of postspiracular seta; all postspiracular setae on I-VIII very long; sternite I present as distinct plate, with setae; lateral areas of sternites without ctenidia or brushes; female sternite VII partially fused with VIII; female anus essentially oval, without inner setae; female subgenital plate margin straight to gently rounded, not convex medially; male genitalia with slender parameres flexed in same direction, rounded endomerical plate, sac weakly spined with poorly to well-developed associated sclerite. *Kaysius* is separated from the closely related *Machaerilaemus* by the features given in Table 1. For brevity, generic characters will not be repeated under the species descriptions. Host classification follows that of Howard and Moore (1991).

In the following descriptions, all measurements are in millimeters. Abbreviations for dimensions are TW, head width at temples; HL, head length at midline; PW, prothorax width; MW, metathorax width; AWIV, abdomen width at level of segment IV; TL, total length; ANW, female anus width; GL, male genitalia length from tip

of basal apodeme to end of parameres; GW, male genitalia width at paramere base.

Kaysius emersoni Price and Clayton
(Fig. 6)

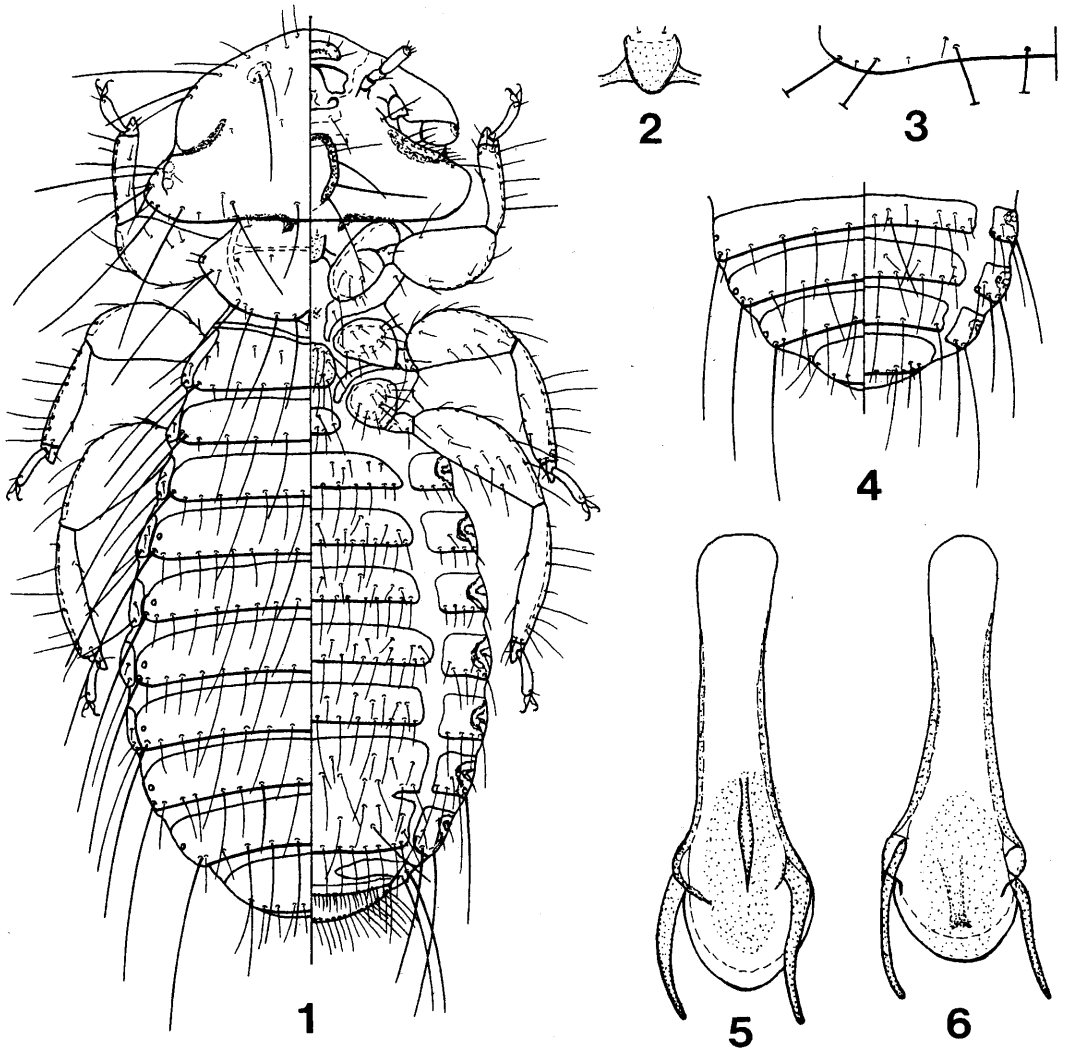
Kaysius emersoni Price and Clayton 1989:
31. Type host: *Glyphorhynchus spirurus* (Vieillot).

This species has been very adequately described and illustrated by Price and Clayton (1989) and details will not be repeated here, other than to provide an illustration of the male genitalia (Fig. 6) for comparative purposes with those of the other two species treated here. All material of *K. emersoni* known to date has been collected from *G. spirurus* [Dendrocolaptidae] in Peru.

Kaysius tityrus (Carriker), n. comb.
(Figs. 1-4)

Menopon tityrus Carriker 1903:182. Type host: *Tityra personata* = *Tityra semifasciata costaricensis* Ridgway.

Female.—As in Fig. 1. Metanotum with 10-12 marginal setae, 4 short medioanterior setae; metasternal plate with 12-18 setae. Tergal setae on I, 12-15; II-V, 16-20; VI, 17-20; VII, 14-19; VIII, 12-15; IX, 9-14. Prominent pleural thickenings on II-VIII. Sternal setae on I, 6-10; II, 22-26; III, 26-31; IV-VI, 26-35; VII, 19-27. Subgenital plate with 14-21 marginal, 12-17 anterior setae. Anus with 30-39 dorsal, 36-



Figs. 1-6. 1-4, *Kaysius tityrus*. 1, Female, dorsoventral. 2, Female prosthernal plate. 3, Female temple setae 21-27, numbering laterad from midline. 4, Male terminalia, dorsoventral. 5, 6, Male genitalia. 5, *K. cotingae*. 6, *K. emersoni*.

41 ventral setae. Dimensions: TW, 0.46-0.48; HL, 0.23-0.28; PW, 0.30-0.32; MW, 0.34-0.37; AWIV, 0.51-0.53; TL, 1.25-1.39; ANW, 0.15-0.18.

Male.—Metanotum with 10-11 marginal setae, 4 short medioanterior setae; metasternal plate with 14-16 setae. Terminalia as in Fig. 4. Tergal setae on I, 11-12; II-V, 14-17; VI, 13-16; VII, 12-14; VIII, 10; IX, 6-8. Prominent pleural thickenings on II-VIII. Sternal setae on I, 6-10; II, 18-23; III, 23-27; IV-VI, 22-29; VII, 13-16; VIII, 8-11.

Genitalia as in Fig. 5, with slender sac sclerite 0.09-0.10 long. Dimensions: TW, 0.44; HL, 0.22-0.26; PW, 0.28-0.29; MW, 0.31-0.32; AWIV, 0.43-0.48; TL, 1.07-1.12; GL, 0.34-0.36; GW, 0.10-0.11.

Material.—[Tyrannidae]—Female holotype of *M. tityrus*, ex *T. s. costaricensis*, Costa Rica; 2 ♀, ex *T. s. colombiana* Ridgway, Colombia; 2 ♀, 1 ♂, ex *T. semifasciata* (Spix), Nicaragua; 4 ♀, 3 ♂, ex *T. cayana cayana* (Linnaeus), Trinidad.

Remarks.—*Kaysius tityrus*, by its smaller

body dimensions, longer male genitalia with its slender, elongate, well-defined sac sclerite, fewer tergal and sternal setae, and presence of pleural thickenings, is readily separated from *K. emersoni*. The host distribution of *K. tityrus* as presently known involves only two species of *Tityrus* from Costa Rica, Trinidad, Nicaragua, and Colombia.

Carriker (1949), in commenting further on the status of the *Menopon tityrus* that he had described in 1903, admitted that he had been doubtful of the proper generic placement of the species. Only after confirmation from Dr. G. H. E. Hopkins that it belonged to *Machaerilaemus* did Carriker relegate it to that genus. Carriker (1949) still expressed doubt about this generic placement. He felt that some characters placed *M. tityrus*, as well as *Machaerilaemus cotingae* Carriker, apart from the other *Machaerilaemus* and that these two species might "... ultimately warrant erection of a special genus for their reception." We agree with his feelings and now remove them from *Machaerilaemus* and place them within *Kaysius*.

Kaysius cotingae (Carriker), **n. comb.**

(Fig. 5)

Machaerilaemus cotingae Carriker 1949: 298. Type host: *Cephalopterus ornatus ornatus* G. St-Hilaire.

Female.—Close to *K. tityrus*, except as follows. Tergal setae on IV-V, 25–28; VI, 23–26; VII, 20–22. Sternal setae on II, 25–30; III, 40–45; IV-VI, 33–48; VII, 28–33. Dimensions: TW, 0.57–0.60; HL, 0.28–0.29; PW, 0.36–0.38; MW, 0.43–0.45; AWIV, 0.66–0.70; TL, 1.50–1.53; ANW, 0.20–0.22.

Male.—Also close to *K. tityrus*, except as follows. Tergal setae on II, 18; III-V, 20–22; VI, 16–21; VII, 16–17. Sternal setae on III, 28–29; IV-VI, 30–37; VII, 16–20. Dimensions: TW, 0.53–0.54; HL, 0.27; PW, 0.33–0.34; MW, 0.39–0.40; AWIV, 0.59–

0.60; TL, 1.23–1.25; GL, 0.41–0.43; GW, 0.12–0.13.

Material.—[Cotingidae]—Female holotype, male allotype, 3 ♀, 1 ♂ paratypes of *M. cotingae*, ex *C. ornatus*, Peru.

Remarks.—The specimens of the type series of *K. cotingae* show this species is distinctly separate from the other two by its much broader head and the greater total length and length of the male genitalia. Its male genitalia, on the basis of the well-defined sac sclerite (Fig. 5), and the presence of pleural thickenings easily distinguish this species from *K. emersoni*. The larger number of tergal setae at least on IV-VII and other dimensional differences further separate *K. cotingae* from *K. tityrus*.

On the basis of the similarity of the male genital sac sclerite and the abdominal pleural thickenings, *K. cotingae* and *K. tityrus* are grouped together and apart from *K. emersoni*. The only known host for *K. cotingae* is *C. ornatus* from Peru.

ACKNOWLEDGMENTS

We thank Nancy E. Adams, National Museum of Natural History, Smithsonian Institution, Washington, D.C., for making the critical louse specimens available to us for study. This manuscript has been approved for publication by the Director, Oklahoma Agricultural Experiment Station, Stillwater.

LITERATURE CITED

- Carriker, M. A., Jr. 1903. Mallophaga from birds of Costa Rica, Central America. *Nebraska University Studies* 3: 123–192.
- . 1949. Neotropical Mallophaga miscellany. V. New genera and species. *Revista Brasileira de Biologia*, Rio de Janeiro 9: 297–313.
- Howard, R. and A. Moore. 1991. *A Complete Checklist of the Birds of the World*. 2nd edition. Academic Press, San Diego, California, xiii + 622 pp.
- Price, R. D. and D. H. Clayton. 1989. *Kaysius emersoni* (Mallophaga: Menoponidae), a new genus and new species of louse from the wedge-billed woodcreeper (Passeriformes: Dendrocolaptidae) of Peru. *Annals of the Entomological Society of America* 82: 29–31.