A review of the louse genus Tinamotaecola (Insecta: Phthiraptera: Philopteridae sensu lato), with description of a new species

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Abstract

We studied a collection of lice from Argentina, Brazil, Paraguay and Chile containing all four known species and one new species (described herein) in the genus Tinamotaecola, parasites of birds of the families Cariamidae and Tinamidae. We also (1) describe previously unknown second and third nymphal instars of two Tinamotaecola species, (2) discuss hosts and geographical ranges for all Tinamotaecola species, and (3) speculate on possible macroevolutionary events that may explain the current distribution of these lice on their respective avian hosts.

Key words: Tinamotaecola, Philopteridae, Phthiraptera, chewing lice, new species, nymphal instars, hosts, Cariamidae, Tinamidae, Tinamotis, Eudromia, Cariama, Chunga, Argentina, Bolivia, Brazil, Paraguay, Chile

Introduction

The chewing louse genus Tinamotaecola was described by Carriker (1944) together with his new species Tinamotaecola andinae parasitic on the puna tinamou, Tinamotis pentlandii Vigors, 1837, from Bolivia. Subsequently, Ward (1957: 350) pointed out that, in addition to the type species of the genus, at least two other Tinamotaecola species parasitic on members of the Tinamidae remained undescribed, one from Eudromia elegans I. Geoffroy Saint-Hilaire, 1832 and E. formosa (Lillo, 1905), and another from Tinamotis ingoufi Oustalet, 1890. Cicchino & Castro (1998: 110) cited at least three additional undescribed species of Tinamotaecola. Finally, Hellenthal et al. (2002) reviewed Tinamotaecola and described three new species, one parasitic on Eudromia elegans, and two from Cariama cristata (Linnaeus, 1758). They also recorded T. andinae from Chunga burmeisteri (Hartlaub, 1860), but were suspicious of this host-louse association (Hellenthal et al. 2002: 137).

Considering that published records of Tinamotaecola from Argentina, Brazil, Chile and Paraguay are scarce, our aims are to present data from additional specimens collected in these countries, representing all known species of this genus, and to describe a new species from Argentina, bringing the total number of species to five. We also discuss the known geographical ranges of all Tinamotaecola host and louse species, and describe the hitherto unknown second and third nymphal instars of two Tinamotaecola species.

Material and methods

Lice were slide-mounted following conventional procedures, including staining some specimens with yellowish Eosin to enhance the colour of the sclerites (Castro & Cicchino 1978). Drawings were made using a camera lucida attached to a Wild m-20 microscope. All measurements were taken with a calibrated eyepiece, from mounted...
largely sympatric in large areas of open arid or semi-arid regions of southern South America. Members of the Tinamiformes as a whole are hosts to all but two species of the Heptapsopteridae (193 spp.) and three out of five Tinamotaecola species, clustered in the morphological well-defined anidae species-group. The two extant species of seriema are hosts to the two species of Heinrothiella Eichler, 1942 (Heptapsogasteridae), and the two species of Tinamotaecola included in the clearly defined zyskowskii species-group. Thus, we hypothesize that within this ecological scenario a primary host-switch of two louse clades (Tinamotaecola and Heinrothiella) occurred, probably from the Tinamotis-Eudromia clade onto the cariamiform clade. Subsequent cospeciation may have occurred within both clades, resulting in two species of Tinamotaecola (the zyskowskii species-group), and two species of Heinrothiella on the Cariamidae. Also, cospeciation may have been the process which gave rise to the three species of Tinamotaecola (the anidae species-group), plus three species in two undescribed genera of Heptapsogasteridae (cited as Heptapsogaster by Ward 1957: 350) from the Tinamotis-Eudromia clade of the Tinamidae. Once these ecological macroevolutionary events – together with other microevolutionary events (see Paterson et al. 2003)—are better known, the unusual present-day distribution of these unique seriema-tinamou louse genera may be better understood.

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References


References
A REVIEW OF THE GENUS TINAMOTAECOLA

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