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## 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-lice 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 Heptapsogasteridae (193 spp.) and three out of five *Tinamotaecola* species, clustered in the morphological well-defined *andinae* species-group. The two extant species of seriemas 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 *andinae* 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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