



<http://dx.doi.org/10.11646/zootaxa.3900.4.9>

<http://zoobank.org/urn:lsid:zoobank.org:pub:FBCE63C3-93B7-4E74-8A05-134533522CB9>

## Ladies in stripes: taxonomic confusion in a potential mimicry complex among Wallacean Coccinellidae (Coleoptera: Coccinellidae)

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### Abstract

Two species of ladybird beetles, one belonging to *Phrynocaria* Timberlake (Coccinellini) and the second to *Chilocorus* Leach (Chilocorini) collected by R.A. Wallace in the Maluku Islands (Indonesia) have identical body size and colour pattern with longitudinal stripes on elytra. Their external features were so similar that G.R. Crotch included both of them in the type series of *Chilocorus wallacii* Crotch, 1874. The specimen designated as the lectotype of *Chilocorus wallacii* belongs to *Phrynocaria*. *Coelophora wallacii* Crotch, 1874 is also transferred to *Phrynocaria* (**new comb.**) and becomes senior homonym and *Phrynocaria crotchi* **new name** is proposed for the secondary junior homonym. *Chilocorus crotchi* **sp. nov.** is described for the taxon misidentified as *Chilocorus wallacii* Crotch.

**Key words:** Entomology, taxonomy, new species, Wallacea, Cucujoidea, Chilocorini, Coccinellini, mimicry complex

### Introduction

In his monumental, posthumously published revision of world Coccinellidae, George R. Crotch (1874) treated 137 genera and 1341 species. During the preparation of this monograph he accumulated a large collection containing about 1000 species, including primary types of almost half of the world species known at that time (Gordon 1987). Part of the material was bought from or exchanged with collectors, including a large number of Coccinellidae collected by Alfred R. Wallace during his residency in the “Malay Archipelago” (1854–1861). The Crotch Collection is housed at the University Museum of Zoology, Cambridge (UK) and it has been repository for many ladybird specialists.

Study of the Crotch collection of Chilocorini from the Australasian Region by one of us (A. Ślipiński) indicated that the type series of *Chilocorus wallacii* Crotch contained a mixture of species, including some from Coccinellini and our more recent work on Coccinellini of the Australo-Papuan Region prompted further examination of the type series. The lectotype from Batchian and a paralectotype from Ternate are specimens of *Phrynocaria* while the second paralectotype from Giolo is *Chilocorus*. Based on type designations by Gordon (1987), *Chilocorus wallacii* Crotch would have to transfer to *Phrynocaria wallacii*. Unfortunately *Coelophora wallacii* described by Crotch (1874: 156) also belongs to *Phrynocaria* and it would be a senior secondary homonym if both species were classified in the same genus, prompting a replacement name for the junior homonym. Crotch (1874: 187), who was an otherwise excellent Victorian taxonomist for his time, noticed the sharing of colouration between *Chilocorus wallacii* and *Coelophora wallacii*, “This has exactly the coloration of *Coelophora wallacii*.” We believe that Crotch may have formed his taxonomic opinion based on the *Chilocorus* specimen from Giolo, but then failed to recognise that the two other specimens he added to type series were

collection and for arranging multiple loans of specimens. Roger Booth (BMNH) has generously shared his knowledge of the ladybirds and helped with loan of specimens. Antoine Mantilleri (MNHN), Berndt Jaeger (MNB) and David Kavanaugh (CAS) loaned further material used in this study. Rich Leschen has revised and improved language in the paper and J. Poorani and Natalia Vandenberg read draft of the paper and suggested many improvements. This project was supported by the grant from the Polish National Science Center (Narodowe Centrum Nauki), No. 2012/07/B/NZ8/02815 to K.W. Tomaszewska and A. Ślipiński; National Basic Research Program of China (973 Program) (2013CB127605) and National Natural Science Foundation of China (NSFC No. 31171899?31372243) to Hong Pang and Youth foundation of Hainan University (No. qnj1155) to Jiahui Li and Midwest University Project (ZXBJH-XK004?ZXBJH-XK005 and MWECSP-RT08)

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