

**Book Review:** Palma, R.L. 2017. *Phthiraptera (Insecta). A catalogue of parasitic lice from New Zealand*. Lincoln, New Zealand, Landcare Research. Fauna of New Zealand Ko te Aitanga Pepeke o Aotearoa. Number 76. 400 pp.  
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The day Ricardo Palma began working together with Prof. Robert (Bob) Pilgrim in 1974 was an auspicious one for the taxonomy of lice of New Zealand. Ricardo accepted the position of curator at Te Papa Tongarewa two years later and, at about the time Bob retired in 1983, they divided their attentions, with Bob assuming primary responsibility for fleas and Ricardo taking on lice. They continued to collaborate on several taxonomic revisions (e.g., Palma and Pilgrim 1983, 1984, 1988, 2002) and published a list of the lice infesting birds in New Zealand (Pilgrim and Palma 1982), but it was clear from this latter work that in the land of birds, there was a great deal still to do. The present catalogue, which includes 424 species and subspecies of lice in 101 genera, is the culmination of over 40 years of intensive study of this important group of ectoparasites.

The opening checklist allows the reader to go immediately in the text to any taxon of interest, and the following 10-page introduction is packed with useful information. There is a table with a list of genera of lice and the number of species and subspecies in each. The table also includes descriptive categories so the reader can quickly and easily determine numbers of endemics, native species, introduced species, taxa of uncertain status and taxa newly reported for New Zealand in this catalogue. In Palma's history of louse research in New Zealand, along with tabulated numbers of taxa over time, the reader is provided with the basis for the current status of knowledge of lice in the country. The style and format for the catalogue are clearly specified to help the reader interpret taxonomic treatments for each taxon. Repositories for types are provided for all taxa where known, and there is a complete list of abbreviations for museums.

The largest component of the catalogue is taken up by the list of taxa reported from New Zealand. Each taxon follows the same descriptive sequence. The original name is followed by a complete nomenclatural history and accompanying references, where relevant for New Zealand. The type host, hosts in New Zealand and other known hosts are listed. A general geographic distribution is provided, along with a detailed list of occurrences in New Zealand according to standard Fauna of New Zealand area codes (Crosby et al. 1976; a map appears on p. 394). Of particular value is a list of all references to New Zealand records for each taxon, along with a number of additional significant references. This allows the reader easy access to the scattered literature to the order. The author provides concise remarks on nomenclatural status of each species of louse and in many cases on hosts. This is particularly important where there are differences from the most recent world checklist (Price et al. 2003). Lice and parasites in general, are not usually at the forefront of concern for policies on species at risk. Here, Palma identifies conservation status for lice where warranted based on at-risk status of specific hosts.

There is an easily accessed host-parasite list in which current scientific and common names are accompanied by lists of lice known to infest each host. The author uses a series of symbols by which the reader can identify lice endemic to New Zealand, new host records for lice, hosts which breed only in the New Zealand subregion and hosts which have been introduced into New Zealand. Of particular interest, is a list of the 18 species of birds that breed in the New Zealand subregion, from which no lice have been collected regionally. Some of these birds are rare endemics or are native species that are found in other biogeographic regions; some are introduced, with lice known to infest them elsewhere in the world. This list provides a clear focus for collection of lice in the future, should the opportunity arise. Following an extensive 32-page list of references, the author has provided excellent habitus photos for males and females (where both are available; some specimens have been chemically stained) of all genera of lice recorded in New Zealand. A scale bar is provided for each photo, which is sufficiently detailed to assist in generic identification.

I don't believe there has ever been a time when there has been so much worldwide attention on taxonomy and ecology of parasitic lice. As the author points out in his introduction, there is much research to be done using molecular tools as an aid to sort out complex taxonomic issues for

many groups of lice. This catalogue of lice from New Zealand is the benchmark for future work in this biogeographic subregion. Louse workers from all parts of the world will benefit from having a copy.

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