

Chapter 14

Salticid spiders of Papua New Guinea

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SUMMARY

We sampled jumping spiders (family Salticidae) from four areas in Papua New Guinea, most intensely at Wanakipa (600–1,400 m elevation, Southern Highlands Province), but also near Porgera (2,300–3,300 m, Enga Province), Mt. Gahavisuka (2,200–2,500 m, Eastern Highlands Province), and Varirata National Park (750 m, Central Province) to assess their diversity and endemism. A conservative estimate of the total number of species found is 128, including perhaps as many as 50 species and 12 genera that are new to science.

INTRODUCTION

Jumping spiders (Salticidae) include more than 5000 described species (Platnick 2010) but many remain to be discovered, particularly in the tropics. Their excellent vision (Land 1969, Blest and Carter 1987) permits them to hunt insects by stalking and pouncing in diverse microhabitats from the ground to tree trunks and foliage, making them a major group of predators of small arthropods.

Recent phylogenetic work indicates that different continental regions contain evolutionarily distinct salticid faunas (Maddison et al. 2008). If this pattern were to hold for Australasia, we would expect New Guinea to have many endemic lineages. The salticid fauna of New Guinea is, however, little studied. As of 2008, about 180 species of salticids were reported from New Guinea (Platnick 2008), a small fraction of what might be expected to occur in a region with tropical rainforest and varied terrains.

This survey is the first attempt to sample salticids intensely at several sites in New Guinea in order to begin to build a more comprehensive view of the jumping spider fauna. The fact that in only a few weeks collecting at a few sites we were able to find more than 100 species of salticids shows that indeed the New Guinea salticid fauna is rich but poorly known.

METHODS

Sampling of salticids was done primarily by beating and visual inspection during the day. Beating involved a 1 m² white sheet stretched over tent poles and held beneath foliage, moss or suspended litter, which was then shaken or beaten with a stick to dislodge spiders onto the sheet. Visual inspection was used to find spiders on leaf litter and tree trunks. Occasionally, leaf litter was sampled by moving a handful of litter quickly onto the beating sheet and then brushing it carefully aside to leave spiders visible.

Identifications were based on external morphology using published literature and in some cases comparison with museum specimens. Because of the lack of adequate published descriptions, identification remains preliminary for all groups except the cocalodine salticids. The overall numbers of species is estimated roughly based on an approximate sorting to morphospecies,