

Ecography

**ECOG-00979**

Sam, K., Koane, B. and Novotny, V. 2014. Herbivore damage increases avian and ant predation of caterpillars on trees along a complete elevational forest gradient in Papua New Guinea. – *Ecography* doi: 10.1111/ecog.00979

**Supplementary material**

## Appendix 1

Table A1. Tree species used in experiments at each elevational site

Tree species/Elevation (m)	200	700	1200	1700	2200	2700	3200	3700
<i>Aglaia lepiorrhachis</i>		X						
<i>Chionanthus ramiflora</i>		X	X	X				
<i>Cryptocarya multipaniculata</i>				X				
<i>Dillenia papuana</i>					X			
<i>Ficus wassa</i>	X							
<i>Gnetum gnemon</i>	X							
<i>Nothofagus grandis</i>					X			
<i>Pittosporum ferruginea</i>							X	
<i>Platea excelsa</i>					X			
<i>Podocarpus sp.</i>						X	X	X
<i>Quintinia sp.</i>						X	X	X
<i>Sterculia schumanniana</i>	X	X	X	X				

Figure A2. The number of bird species (A) and individuals (B) per study site had significant effect on the number of caterpillars on trees with experimental herbivory attacked by birds.

Number of species:  $R^2 = 0.88$ ,  $F_{1,6} = 24.39$ ,  $P < 0.002$ , Number of attacks =  $0.0015 * \text{Number of species}^{1.6229}$ ; Number of individuals:  $R^2 = 0.92$ ,  $F_{1,6} = 21.79$ ,  $P < 0.003$ , Individuals =  $0.0858 * \text{Number of individuals}^{1.8573}$

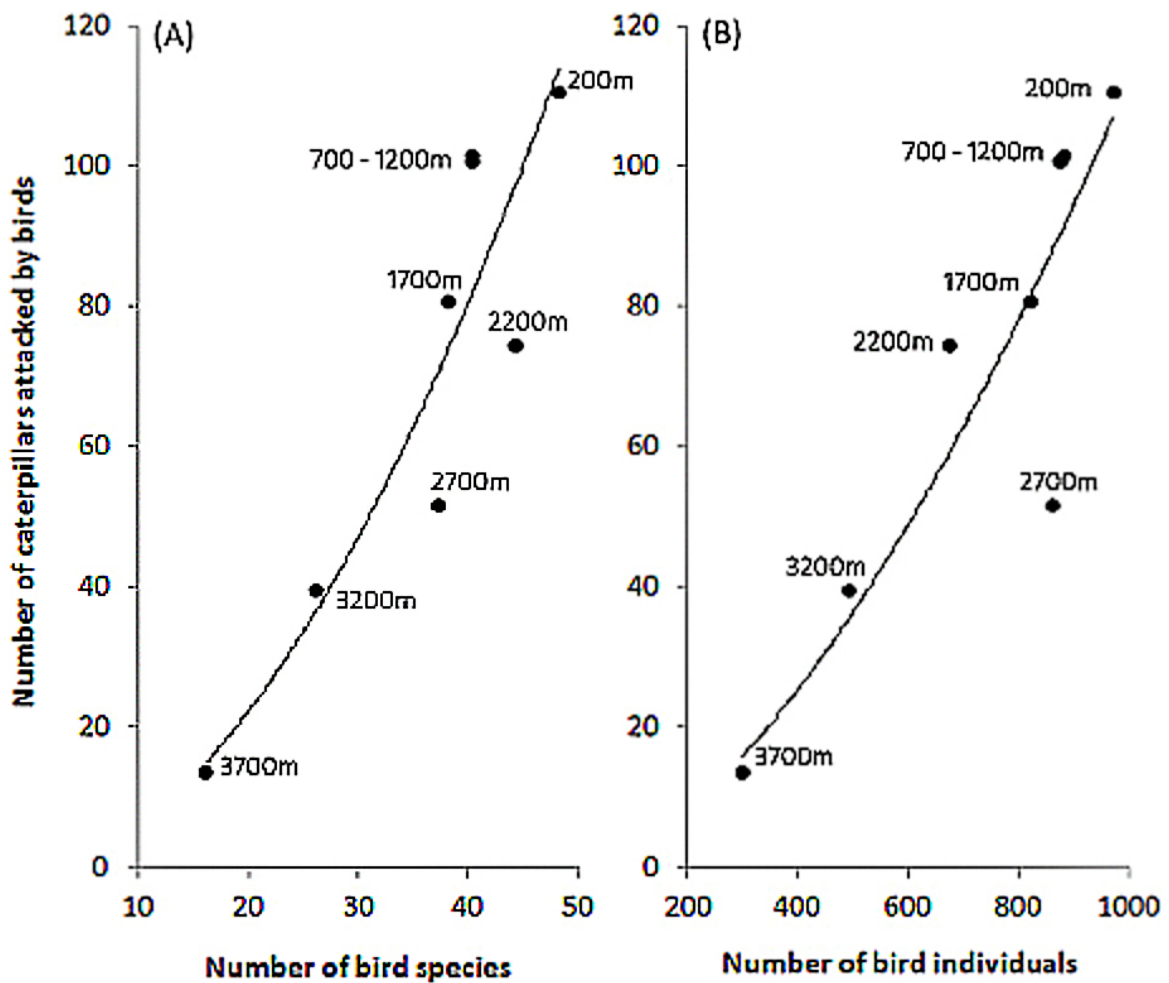


Figure A3. Bird attack marks obtained by offering the plasticine caterpillars to mist-netted birds common along elevational gradient of Mt. Wilhelm: (A-C) Dimorphic Fantail *Rhipidura brachyrhyncha* (D) Black Fantail *Rhipidura atra* (E) Blue-grey Robin *Peneothello cyanus* (F) White-winged Robin *Peneothello sigillatus* (G-H) Mottled Whistler *Rhagologus leucostigma* (I) Sclater's Whistler *Pachycephala soror* (J) Smoky Honeyeater *Melipotes fumigatus* (K) Black Pitohui *Pitohui nigrescens* (L) Large Scrubwren *Sericornis nouhuysi*. Models photographed next to scale with 1 mm intervals.

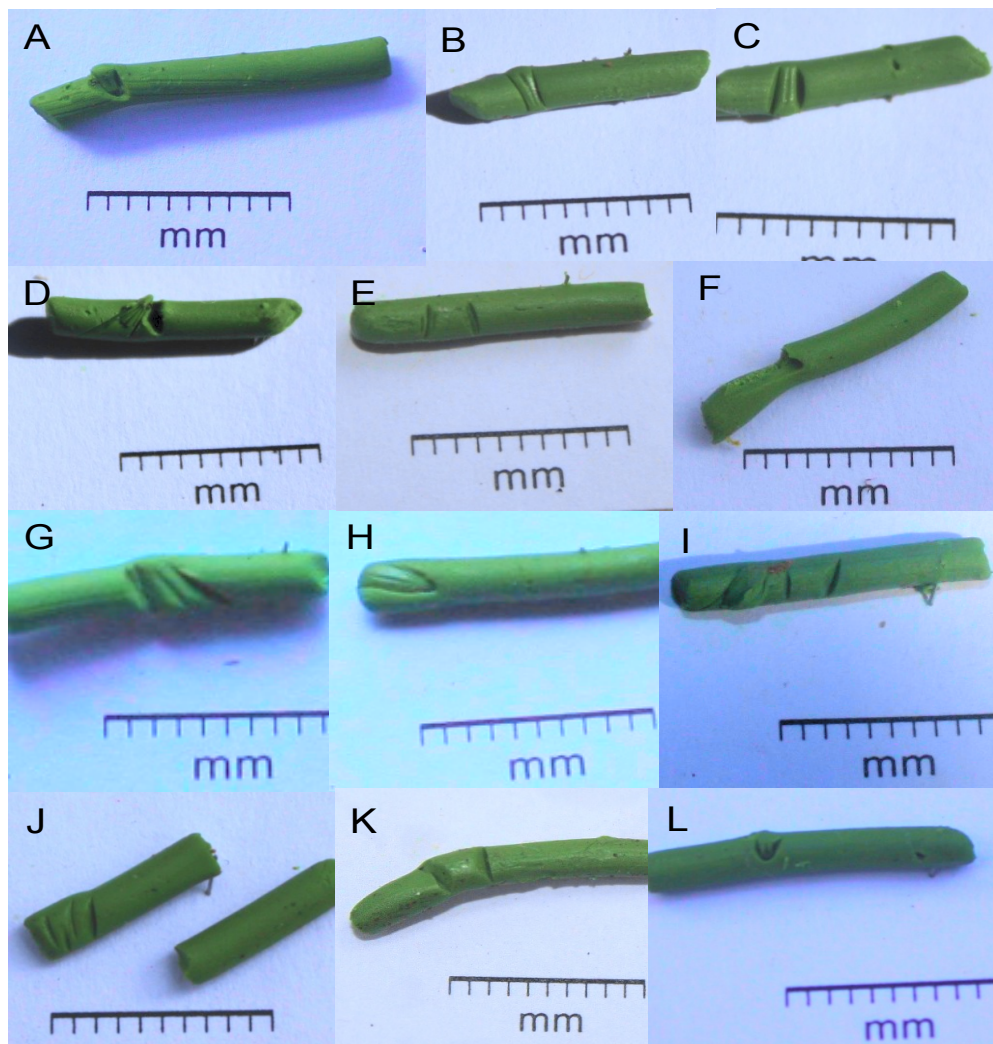


Figure A3. Bird attack marks. (a-c dimorphic fantail *Rhipidura brachyrhyncha*; d black fantail *Rhipidura atra*; e blue-grey robin *Peneothello cyanus*; f white-winged robin *Peneothello sigillatus*; g-h mottled whistler *Rhagologus leucostigma*; i Sclater's whistler *Pachycephala soror*; j smoky honeyeater *Melipotes sp.*; k black pitohui *Pitohui nigrescens*; l large scrubwren *Sericornis nouhuysi*.)

Figure A4. Arthropod attack marks obtained by offering the plasticine caterpillars to common predatory arthropods along elevational gradient of Mt. Wilhelm: (A – E) large ants (F – G) small ants (H - I) predatory beetle (J) grasshopper (K) bee (L – M) wasp. Models photographed next to scale with 1 mm intervals.

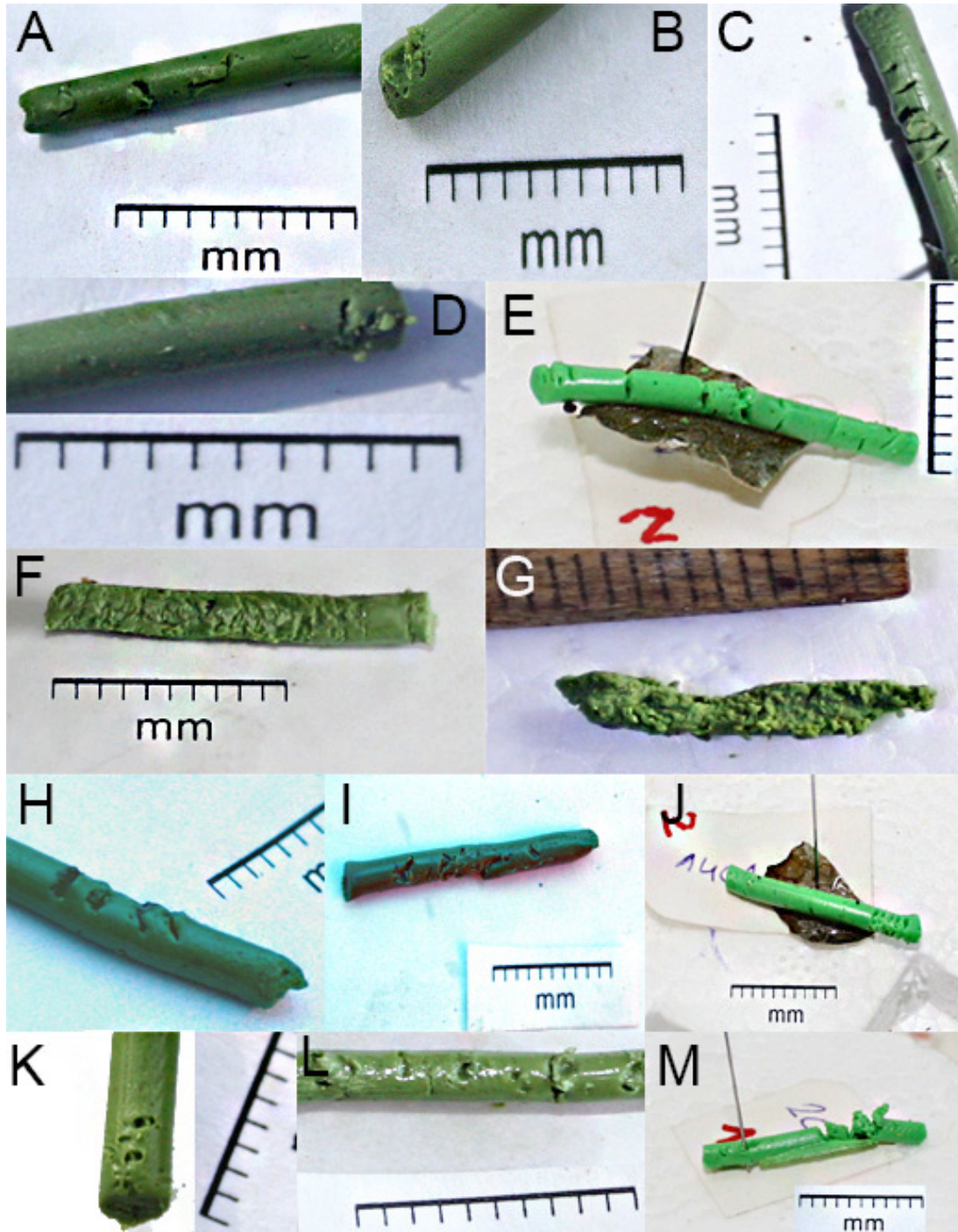


Figure A5. Results of a blind test, where three people responsible for identification of attack marks in the current study were asked to identify predators responsible for attacks on 40 photos randomly selected from complete photo reference collection of attack marks (N = 456). Comparison of overall mean ( $\pm$  SE) level of support for identifications of predators responsible for attacks on model caterpillars, made at a coarse (dark grey bars) and more precise (light grey bars) taxonomic level for arthropods.

