

Appendix

Number of fecal samples in which a given plant species (seed type) was found for each bird species in this study. Plant names and authorities follow the species list for Costa Rica (Instituto Nacional de Biodiversidad, version July 2006). Presence of arthropod taxa (Order-Family) in fecal samples is indicated by an X. Bird species are arranged by pair with the altitudinal migrants (M) to the left of their resident (R) counterparts. Bird species codes are: COAL, *Corapipo altera*; SHTU, *Schiffornis turdina*; PIPI, *Pipra pipra*; MACA, *Manacus candei*; MIOV, *Mionectes olivaceus*; MIOG, *Mionectes oleagineus*; MYME, *Myadestes melanops*; CAME, *Catharus mexicanus*; TUOB, *Turdus obsoletus*; TUGR, *Turdus grayii*; TGIC, *Tangara icterocephala*; TCDE, *Tachyphonus delatrii*; TGFL, *Tangara florida*; CPOP, *Chlorospingus ophthalmicus*. Number of fecal samples analyzed for each species appears below the species code.

Plant taxa	Bird species													
	Manakin 1		Manakin 2		Flycatcher		Thrush 1		Thrush 2		Tanager 1		Tanager 2	
	COAL (M)	SHTU (R)	PIPI (M)	MACA (R)	MIOV (M)	MIOG (R)	MYME (M)	CAME (R)	TUOB (M)	TUGR (R)	TGIC (M)	TCDE (R)	TGFL (M)	CPOP (R)
	89	8	13	7	9	11	10	10	12	5	11	15	3	4
Annonaceae														
<i>Guatteria aeruginosa</i> Standl.							1							
Aquifoliaceae														
<i>Ilex hemiepiphytica</i> W. J. Hahn				1							3	1	1	
<i>Ilex maxima</i> W. J. Hahn	1					1					2			

Plant taxa	Bird species													
	Manakin 1		Manakin 2		Flycatcher		Thrush 1		Thrush 2		Tanager 1		Tanager 2	
	COAL (M)	SHTU (R)	PIPI (M)	MACA (R)	MIOV (M)	MIOG (R)	MYME (M)	CAME (R)	TUOB (M)	TUGR (R)	TGIC (M)	TCDE (R)	TGFL (M)	CPOP (R)
	89	8	13	7	9	11	10	10	12	5	11	15	3	4
Araceae														
<i>Anthurium cuspidatum</i> Mast.			1											
<i>Anthurium michelii</i> Guillaumin	1													
<i>Anthurium tenerum</i> Engl.														1
Araliaceae														
<i>Schefflera nicaraguensis</i> (Standl.) A. C. Sm.	3								1		4			
<i>Schefflera systyla</i> (Donn. Sm.) Vig.	1		1				1		1		3		1	
Arecaceae														
<i>Chamaedorea pinnatifrons</i> (Jacq.) Oerst.			1				1							
<i>Chaemaedorea</i> sp. (Indet13) ¹			1											
<i>Geonoma petiolata</i> H. E. Moore							1							
<i>Pholidostachys pulchra</i> H. Wendl. ex Burret					1									
Asteraceae														
<i>Clibadium pittieri</i> Greenm.	2													
Chloranthaceae														
<i>Hedyosmum bonplandianum</i> Kunth	2													
<i>Hedyosmum costaricense</i> C. E. Wood	1													
<i>Hedyosmum scaberrimum</i> Standl.	6													
Clusiaceae														

Plant taxa	Bird species													
	Manakin 1		Manakin 2		Flycatcher		Thrush 1		Thrush 2		Tanager 1		Tanager 2	
	COAL (M)	SHTU (R)	PIPI (M)	MACA (R)	MIOV (M)	MIOG (R)	MYME (M)	CAME (R)	TUOB (M)	TUGR (R)	TGIC (M)	TCDE (R)	TGFL (M)	CPOP (R)
	89	8	13	7	9	11	10	10	12	5	11	15	3	4
<i>Chrysochlamys nicaraguensis</i> (Oerst., Planch. & Triana) Hemsl.					1									
<i>Clusia cretosa</i> Hammel					1									
<i>Clusia gracilis</i> Standl.	3				4	4						5		
<i>Clusia palmana</i> Standl.			1									4		
<i>Clusia stenophylla</i> Standl.	2				3	2						4		
<i>Clusiella isthmensis</i> Hammel		1												
<i>Clusia</i> sp. (Indet 14) ¹					2	2						1		
Clusiaceae sp. (Indet15) ¹												3		
Dilleniaceae														
<i>Doliocarpus multiflorus</i> Standl.				1						3				
Ericaceae														
<i>Cavendishia capitulata</i> Donn. Sm.	1													
<i>Cavendishia complectens</i> Hemsl.	2			2					1	1				
<i>Cavendishia endresii</i> Hemsl.	3							1	1					
<i>Sphrospermum buxifolium</i> Poepp. & Endl.											1			1
<i>Vaccinium orosiense</i> Wilbur & Luteyn							1					1		
Ericaceae sp. (Indet16) ¹														1
Ericaceae sp. (Indet17) ¹	3													
Euphorbiaceae														

Plant taxa	Bird species													
	Manakin 1		Manakin 2		Flycatcher		Thrush 1		Thrush 2		Tanager 1		Tanager 2	
	COAL (M)	SHTU (R)	PIPI (M)	MACA (R)	MIOV (M)	MIOG (R)	MYME (M)	CAME (R)	TUOB (M)	TUGR (R)	TGIC (M)	TCDE (R)	TGFL (M)	CPOP (R)
	89	8	13	7	9	11	10	10	12	5	11	15	3	4
<i>Hyeronima oblonga</i> (Tul.) Mull. Arg.									2					
<i>Tetrorchidium euryphyllum</i> Standl.					1	1								
Gesneriaceae														
<i>Besleria columneoides</i> Hanst.	1													
<i>Besleria notabilis</i> C. V. Morton									2	2				
<i>Columnnea parviflora</i> C. V. Morton											1		1	
<i>Drymonia</i> sp. (Indet18)			1											
Gesneriaceae sp. (Indet19) ¹			1											
Marcgraviaceae														
<i>Marcgravia caudata</i> Triana & Planch.	3								1	1				
<i>Marcgravia pittieri</i> Gilg	1						1		1		1			
Melastomataceae														
<i>Blakea anomala</i> Donn. Sm.			1									4		
<i>Blakea tuberculata</i> Donn. Sm.	3	3										2	1	
<i>Clidemia discolor</i> (Triana) Cogn.							1							
<i>Clidemia epiphytica</i> (Triana) Cogn.	4		2										1	
<i>Conostegia micrantha</i> Standl.	72	7	8	8	1	4	10	8	11	3	9	9	2	4
<i>Conostegia subcrustulata</i> (Beurl.) Triana		1												
<i>Conostegia xalapensis</i> (Bonpl.) D. Don												1		

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	Manakin 1		Manakin 2		Flycatcher		Thrush 1		Thrush 2		Tanager 1		Tanager 2	
	COAL (M)	SHTU (R)	PIPI (M)	MACA (R)	MIOV (M)	MIOG (R)	MYME (M)	CAME (R)	TUOB (M)	TUGR (R)	TGIC (M)	TCDE (R)	TGFL (M)	CPOP (R)
	89	8	13	7	9	11	10	10	12	5	11	15	3	4
<i>Hamelia patens</i> Jacq.									1				1	
<i>Palicourea gomezii</i> C. M. Taylor				1			1							
<i>Psychotria buchtienii</i> (H. Winkl.) Standl.	6		1		1									
<i>Psychotria cooperi</i> Standl.	8		1				2							
<i>Psychotria luxurians</i> Rusby	5													
Solanaceae														
<i>Witheringia solanacea</i> L'Her.	1							1						
Viscaceae														
<i>Phoradendron chrysocladon</i> A. Gray								1						1
Seeds not identified to family ¹														
Indet1								1						
Indet2					1									
Indet3											1			
Indet4	1													
Indet5							1							1
Indet6						1								
Indet7	1				1									
Indet8									2	2				
Indet9									1					

Plant taxa	Bird species													
	Manakin 1		Manakin 2		Flycatcher		Thrush 1		Thrush 2		Tanager 1		Tanager 2	
	COAL (M)	SHTU (R)	PIPI (M)	MACA (R)	MIOV (M)	MIOG (R)	MYME (M)	CAME (R)	TUOB (M)	TUGR (R)	TGIC (M)	TCDE (R)	TGFL (M)	CPOP (R)
	89	8	13	7	9	11	10	10	12	5	11	15	3	4
Indet10											1			
Indet11	1													
Indet12	2													
Arthropod taxa														
Spiders (Arachnida-Araneae)	X	X	X		X	X	X	X			X		X	
Wasps (Hymenoptera-Vespidae)	X							X					X	
Ants (Hymenoptera-Formicidae)								X						
Flies (Diptera)			X				X							
Beetles (Coleoptera)								X						
Mantises (Dictyoptera-Mantodea)								X						

¹ All plant taxa with the word “indet” in name represent seeds from distinct morphospecies, in some cases identified either to family or genus.

² Seeds matched to plant taxa collected at our study sites (collection numbers of W. A. Boyle in parentheses), but collections not yet identified to species.