Oikos

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Appendix 1. List of 40 study species from 24 families. Nomenclature follows the Missouri Botanical Garden's website (<http://mobot.mobot.org/W3T/Search/vast.html>). Plant life form is CT=canopy tree, UT=understory tree, L=liana, S=shrub. Expansion is % d^{-1} for young leaves. N is the number of morphospecies of caterpillar reared on this host.

Host plant	Life	Exp	N
Alseis blackiana Hemsl. (Rubiaceae)	CT	18	3
Capparis frondosa Jacq. (Capparidaceae)	UT	26	5
Chrysophyllum panamense Pittier (Sapotaceae)	UT	19	3
Clytostoma binatum (Thunb.) Sandwith (Bignoniaceae)	L	–	1
Connarus panamensis Griseb (Connaraceae)	L	32	2
Connarus turczaninowii Triana & Planch. (Connaraceae)	L	23	3
Cordia bicolor A. DC. (Boraginaceae)	CT	13	1
Cupania rufescens Triana & Planch. (Sapindaceae)	UT	16	1
Cupania sylvatica Casar. (Sapindaceae)	UT	40	3
Desmopsis panamensis (B.L. Rob.) Saff. (Annonaceae)	UT	23	1
Doliocarpus major J.F. Gmel.(Dilleniaceae)	L	25	2
Eugenia oerstediana O.Berg (Myrtaceae)	UT	70	2
Faramea occidentalis (L.) A. Rich (Rubiaceae)	UT	20	1
Garcinia intermedia (Pittier) Hammel (Clusiaceae)	UT	47	3
Guatteria dumetorum R.E. Fr. (Annonaceae)	CT	12	1
Gustavia superba (Knuth) O. Berg (Lecythidaceae)	UT	87	4
Heisteria concinna Standl. (Olacaceae)	CT	15	3
Hirtella triandra Sw.(Chrysobalanaceae)	UT	15	4
Hybanthus prunifolius (Humb. & Bonpl. ex Roem. & Schult.) Schulze-Menz (Violaceae)	S	17	5
Inga marginata Kunth (Fabaceae)	CT	72	4
Inga vera Kunth (Fabaceae)	CT	34	1
Lacistema aggregatum (P.J. Bergius) Rusby (Flacourtiaceae)	UT	–	1
Licania platypus (Hemsl.) Fritsch (Chrysobalanaceae)	CT	47	2
Mouriri myrtilloides (Sw.) Poir. (Melastomataceae)	UT	10	2
Myrcia fosteri Croat (Myrtaceae)	UT	9	1
Nectandra cissiflora Nees (Lauraceae)	CT	–	1
Ouratea lucens (Kunth) Engl. (Ochnaceae)	UT	72	3
Paullinia bracteosa Radlk. (Sapindaceae)	L	67	2
Paullinia fibrigera Radlk. (Sapindaceae)	L	–	1
Piper cordulatum C. DC. (Piperaceae)	S	8	1
Prioria copaifera Griseb.(Fabaceae)	CT	35	1
Psychotria horizontalis Sw. (Rubiaceae)	S	8	6
Psychotria limonensis K. Krause (Rubiaceae)	S	4	3
Psychotria marginata Sw. (Rubiaceae)	S	4	5
Pterocarpus rohrii Vahl (Fabaceae)	CT	80	2
Sorocea affinis Hemsl. (Moraceae)	UT	32	2
Swartzia simplex var. *grandiflora* (Raddi) R.S. Cowan (Fabaceae)	UT	24	1
Talisia princeps Oliv. (Sapindaceae)	UT	106	1
Tetragastris panamensis (Engl.) Kuntze (Burseraceae)	CT	30	1
Trichilia tuberculata C. DC. (Meliaceae)	CT	20	5

Appendix 2. Herbivore identities and traits. Host plant abbreviations are the first three letters of the genus and the first letter of the species listed in Appendix 1. Diet indicates specialists (s) or generalists (g), RGR is the relative growth rate (g g^{-1} d^{-1}), and anti-predator traits color, house, behavior, hairs, spines, gregariousness (described in methods and Table 2). Family abbreviations are as follows: ARCT=Arctiidae, BOMB=Bombycidae, CRAM=Crambidae, DIOP=Dioptidae, GELE=Gelechiidae, GEOM=Geometridae, HESP=Hesperidae, LIMA=Limacodidae, LYCA= Lycaenidae, LYMA=Lymantridae, NOCT=Noctuidae, NOTO=Notodontidae, NYMP=Nymphalidae, OECO=Oecophoridae, OXYT=Oxyteniidae, PIER=Pieridae, PSYC=Psychidae, PYRA=Pyralidae, SATU=Saturniidae, SPHI=Sphingidae, THYR= Thyrididae, TORT =Tortricidae, YPON=Yponomeutidae,UNKN=Unknown. Species identifications are done by the authors and colleagues and are tentative.

Family	Genus/species	Host	diet	age	RGR	color	hse	beh	hair	spine	greg
ARCT	*Gymnelia jansonis*	conp	g	y	0.223	1	0	1	2	0	0
ARCT	*Gymnelia jansonis*	ingm	g	y	0.254	1	0	1	2	0	0
ARCT	unknown	guss	g	y	–	1	0	1	2	0	0
ARCT	unknown	laca	g	y	–	1	0	1	2	0	0
ARCT	unknown	myrf	s	m	0.077	1	0	1	1	0	0
ARCT	unknown	necc	s	m	0.140	1	0	1	2	0	0
ARCT	unknown	ourl	g	y	–	1	0	1	2	0	0
ARCT	unknown	paub	s	y	–	2	0	1	2	0	0
ARCT	unknown	swas	g	y	–	1	0	1	2	0	0
ARCT	unknown	trit	s	m	0.053	1	0	1	2	0	0
BOMB	*Quenyalia amisena*	sora	s	y	0.401	0	0	0	0	0	0
CRAM	*Trichaea pilicornis*	psyh	s	y	0.360	0	1	0	0	0	0
CRAM	*Trichaea pilicornis*	psyl	s	y	0.355	0	1	0	0	0	0
CRAM	*Trichaea pilicornis*	psym	s	y	0.314	0	1	0	0	0	0
DIOP	*Scotura nervos*a	hybp	s	m	0.265	1	0	1	0	0	0
GELE	unknown	hybp	s	y	0.332	0	1	0	0	0	0
GELE	unknown	ingm	s	y	0.444	0	1	0	0	0	0
GEOM	*Anisodes urcearia*	moum	g	y	0.124	0	0	0	0	0	0
GEOM	*Edula antithesis*	hybp	s	y	0.276	0	0	0	0	0	0
GEOM	unknown	chrp	s	m	0.199	0	0	0	0	0	0
GEOM	unknown	chrp	s	m	0.295	0	0	0	0	0	1
GEOM	unknown	conp	s	y	0.618	1	0	0	0	0	0
GEOM	unknown	cont	s	y	0.314	1	0	0	0	0	0
GEOM	unknown	cont	s	y	0.071	0	0	0	0	0	0
GEOM	unknown	cont	s	y	0.546	1	0	0	0	0	0
GEOM	unknown	cups	s	y	0.295	0	0	0	0	0	0
GEOM	unknown	dolm	s	y	0.409	0	0	0	0	0	0
GEOM	unknown	eugo	s	y	0.285	0	0	0	0	1	0
GEOM	unknown	eugo	s	y	0.426	0	0	0	0	0	0
GEOM	unknown	gari	s	y	0.564	0	0	0	0	0	0
GEOM	unknown	hirt	s	y	0.454	0	0	0	0	0	0
GEOM	unknown	ingm	s	y	0.497	0	0	0	0	0	0
GEOM	unknown	moum	s	y	0.265	0	0	0	0	0	0
GEOM	unknown	pipc	s	m	0.055	0	0	0	0	0	0
GEOM	unknown	psyh	s	y	0.242	0	0	1	0	0	0
GEOM	unknown	swas	s	y	0.510	0	0	0	0	0	0
GEOM	unknown	trit	s	y	0.364	0	0	0	0	0	0
GEOM	unknown	psyl	s	y	0.319	0	1	0	0	0	0
GEOM	species 1	psyh	s	y	0.208	0	0	0	0	0	0
GEOM	species 1	psym	s	y	0.246	0	0	0	0	0	0
HESP	*Drephalys alcomon*	hirt	s	y	0.375	0	1	0	0	0	0
HESP	*Entheus* sp.	guss	s	y	0.327	0	1	0	0	0	0
HESP	unknown	licp	s	y	0.200	1	1	0	0	0	0
HESP	*Telemiades antiope*	ingv	s	m	0.201	0	1	0	0	0	0
HESP	*Udranomia* sp.	ourl	s	y	0.365	0	1	0	0	0	0
LIMA	unknown	sora	s	m	0.068	0	0	0	0	2	0
LYCA	unknown	ingm	s	y	0.565	0	0	1	0	0	0
LYCA	unknown	trit	s	y	0.153	1	0	1	2	0	0
LYMA	unknown	heic	g	m	–	2	0	1	2	0	0
LYMA	*Tarchon felderi*	alsb	g	m	0.186	2	0	1	2	0	0
LYMA	*Tarchon felderi*	dolm	g	m	0.099	2	0	1	2	0	0
LYMA	*Tarchon felderi*	pter	g	m	0.194	2	0	1	2	0	0
NOCT	*Nagara vitrea*	gari	s	y	0.721	0	0	0	0	0	0

NOCT	unknown	corb	s	y	0.294	2	0	1	0	1	1
NOCT	unknown	heic	s	y	0.427	0	1	0	0	0	1
NOCT	unknown	licp	s	y	0.653	0	0	0	0	0	0
NOCT	unknown	psyh	s	y	0.203	0	1	0	0	0	0
NOCT	unknown	tetp	s	y	0.577	0	0	0	0	0	0
NOTO	*Bardaxima perses*	ourl	s	m	0.269	2	0	1	0	0	0
NOTO	*Calledema plusia*	hirt	s	m	0.322	0	0	0	0	0	0
NOTO	*Elasmia mandela*	cups	s	m	0.077	1	0	1	0	0	0
NOTO	*Gonodonta fulvangula*	guad	s	y	0.459	2	0	1	0	0	0
NOTO	unknown	guss	s	m	0.306	1	0	1	0	0	0
NOTO	unknown	heic	s	y	0.256	0	1	0	0	0	0
NOTO	unknown	moum	s	y	0.511	1	0	1	0	0	0
NOTO	unknown	trit	s	y	0.419	0	1	0	0	0	0
NOTO	*Strophocerus* sp.	hirt	s	m	0.214	1	0	1	0	0	0
NOTO	*Zunacetha annulata*	heic	g	y	0.249	0	0	0	0	0	0
NOTO	*Zunacetha annulata*	hybp	g	y	0.240	1	0	1	0	0	1
NOTO	*Zunacetha annulata*	ourl	g	y	0.232	1	0	1	0	0	1
NOTO	*Zunacetha annulata*	paub	g	y	0.244	1	0	1	0	0	1
NYMP	unknown	pter	s	m	–	2	0	1	1	0	1
NYMP	*Pyrrhogyra otolais*	paub	s	y	0.698	1	0	1	0	1	0
OECO	unknown	desp	s	m	0.267	0	1	0	0	0	0
OECO	unknown	trit	s	y	0.453	0	1	0	0	0	0
OXYT	*Homoeopteryx malecena*	faro	s	m	0.386	0	0	1	0	0	0
PIER	*Itaballia* sp.	capf	s	y	0.546	0	0	1	0	1	0
PIER	*Perrhybris pyrrha*	capf	s	y	0.415	2	0	1	1	0	1
PSYC	unknown	ingm	s	y	0.449	0	1	0	0	0	0
PYRA	*Cosmopterosis thetysalis*	capf	s	y	0.284	1	1	0	1	0	0
PYRA	*Desmia* sp.	psyh	s	y	0.279	0	1	0	0	0	0
PYRA	*Desmia* sp.	psyl	s	y	0.277	0	1	0	0	0	0
PYRA	*Desmia* sp.	psym	s	y	0.211	0	1	0	0	0	0
PYRA	unknown	alsb	s	y	0.332	0	1	0	0	0	0
PYRA	unknown	capf	s	y	0.400	0	1	0	0	0	0
PYRA	unknown	capf	s	y	0.612	0	1	0	0	0	0
PYRA	unknown	psym	s	y	0.277	0	1	0	0	0	0
PYRA	*Spilorula perspicata*	guss	s	y	0.286	0	1	0	0	0	0
SATU	unknown	ourl	g	m	–	2	0	1	0	2	1
SATU	*Periphoba arcaei*	pric	g	m	0.116	2	0	1	0	2	1
SPHIN	*Xylophanes amadis*	psyh	s	m	0.096	1	0	0	0	0	0
SPHIN	*Xylophanes* sp.	psym	s	y	0.339	0	0	0	0	0	0
THYR	unknown	talp	s	y	0.500	0	1	0	0	0	0
TORT	unknown	chrp	s	m	0.146	0	1	0	0	0	0
TORT	unknown	cupr	s	y	0.162	0	1	0	0	0	0
TORT	unknown	cups	s	y	0.318	0	1	0	0	0	0
TORT	unknown	gari	s	y	0.301	0	1	0	0	0	0
TORT	unknown	guss	s	m	0.307	0	1	0	0	0	0
YPON	unknown	hybp	s	m	0.314	0	1	0	0	0	0
UNKN	unknown	alsb	s	m	0.378	0	0	1	0	1	0
UNKN	unknown	clyb	g	m	0.166	1	0	1	2	1	0
UNKN	unknown	dolm	g	m	–	1	0	1	2	1	0
UNKN	unknown	laca	s	m	0.310	0	0	1	1	1	1
UNKN	unknown	ourl	g	m	–	1	0	1	2	1	0
UNKN	unknown	pauf	s	m	–	2	0	1	2	1	0
UNKN	unknown	pter	s	m	0.368	1	0	1	0	0	1