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Abstract

Keywords: biodiversity, global warming, *Miscanthus chinesis*, *Pseudosasa usawai*

An increasing concern on global warming has become an important issue to the world. It not only, directly or indirectly, leads to the massive extinction of world species, but has more impact to human lives. *Pseudosasa usawai* (a.k.a. *Arundinaria usawai*) comprises a prairie grassland which is endemic to Yangmingshan National Park and has substantial values of environmental educations and scientific researches. This specific ecosystem is, however, located on summits of high mountains which are easily disturbed by human activities and environmental changes. Furthermore, the need of a huge amount of water supply makes it subjected to even the tiny changes of the global warming phenomenon. Hence, natural histories, conservation, and monitoring of this ecosystem must be the most critical issue in preserving world biodiversity. This study, following the former project, investigated and analyzed data from areas of *Pseudosasa usawai* succession and compared fauna and flora within areas occupied by different dominant plant species (ie. *Pseudosasa usawai* and *Miscanthus chinesis* var. *glaber*).

Four plots, high (1,000m) and low (800m) altitude with different dominant plants, were selected. Pitfall traps were constructed from July to October to collect sedentary arthropods with a seven-day period in each collecting time. Flora of higher vascular plants was also investigated during July and August for further comparison. Sample data were imported in PRIMER v5.1 (Clark & Warwick, 2001) to calculate varies diversity indices, construct MDS and UPGMA among different sampling strategies, and then estimate the statistical significance of differentiation via ANOSIM.

No significant differentiations of invertebrate communities were found

between different habits. Sedentary insects, mostly carnivores, scavengers, and omnivores, were the majority of invertebrates collected and seemed to have no preference of habitat selected. With compare to the neighboring habitats, there were few species exist in the prairie grassland dominated by both species. These two plant species have strong exclusion effect to other plants and may thus decrease biodiversity. *Pseudosasa usawai* has a comparatively greater exclusive effect to other flora and, accordingly, few species of vertebrates and vascular plants could survive in such environment

B

Pseudosasa usawaiensis

Arundinaria usawaiensis

Miscanthus chinesis var. *glaberrimus* Janzen, 1976

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Topping & Luff, 1995 10 20

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PRIMER v5.1 Clark & Warwick, 2001

Species richness Shannon-Wiener Index log base Simpson index 1-Lambda Evenness SYSTAT 9.0 3 SPSS Inc., Chicago, Illinois, U.S.A. one-way ANOVA LSD mean comparison

Bray-Curtis Kerbs, 1989

Multidimensional scaling plots MDS Unweighted Pair-Group Method Using Arithmetic averages UPGMA

Analysis of similarities ANOSIM

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PRIMER v5.1 Clark & Warwick, 20013:

Bray-Curtis similarity matrix Kerbs, 1989

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4	2008.08.26	2008.09.01	Ž	280	40 _	
5	2008.09.11	2008.09.17	Ž	280	40 _	
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G≡T	87	35
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eG≡T	82	33

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	Ê§	ÐÉ§	fdK	ÞK	Shannon-wiener p>	Simpson é§
eG÷T	89	1317	2.02±1.21[a]	0.71±0.44[a]	1.63±0.81[a]	0.70±0.46[a]
eG≡T	82	1505	2.87±1.15[a]	0.72±0.38[a]	1.79±0.70[a]	0.73±0.38[a]
G÷T	94	645	2.89±1.17[a]	0.77±0.29[a]	1.89±0.72[a]	0.78±0.34[a]
G≡T	87	554	3.04±1.19[a]	0.74±0.41[a]	1.87±0.84[a]	0.75±0.46[a]
BfÉ	*p* v		0.857	0.718	0.615	0.687

2. Multidimensional scaling plots MDSÞÉ

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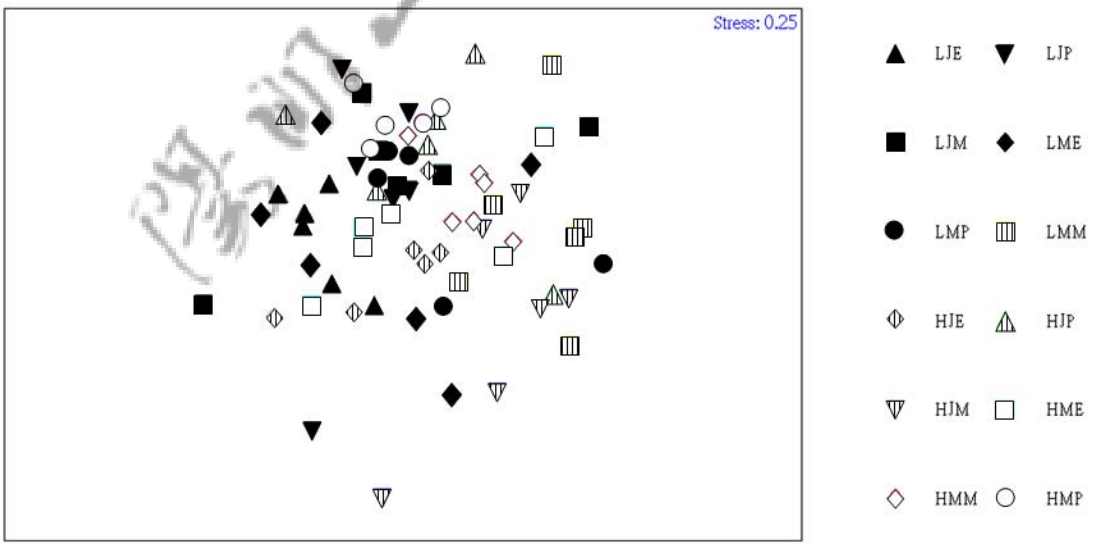
MDS



MDS

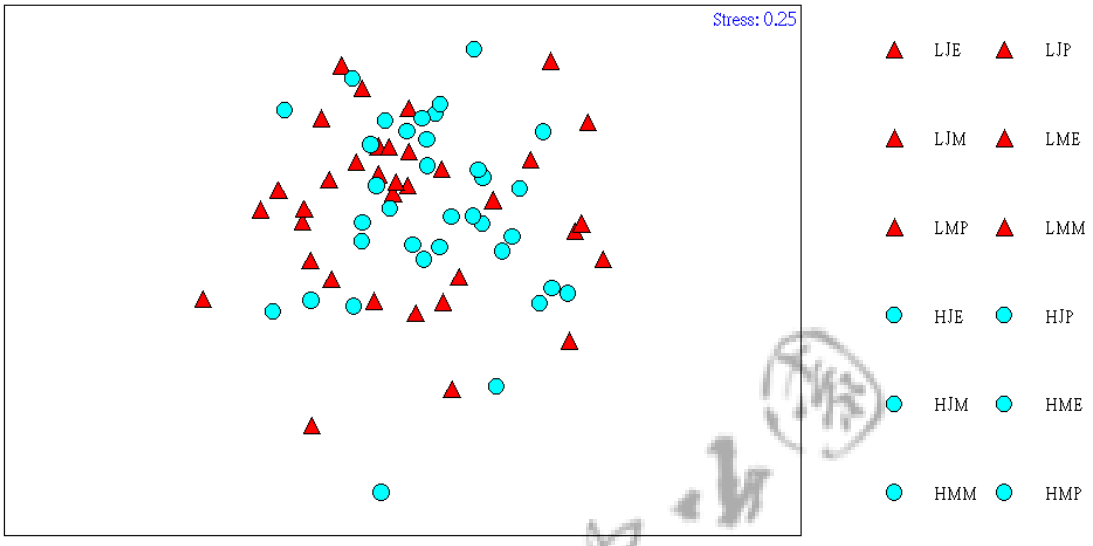
LJE LJP LJM LME

LMP LMM HJE

HJP HJM HME

HMM HMP

MDS



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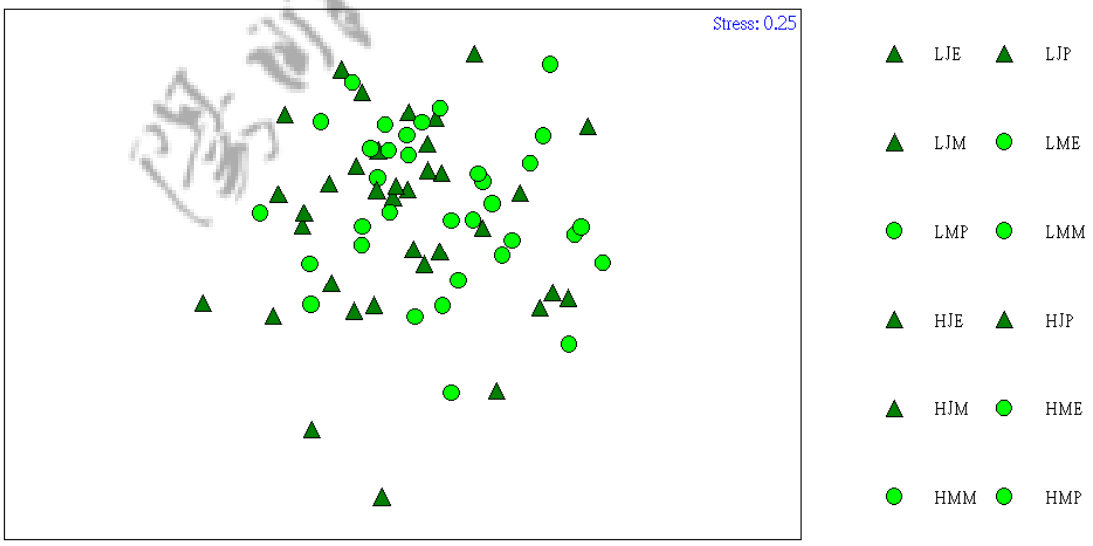

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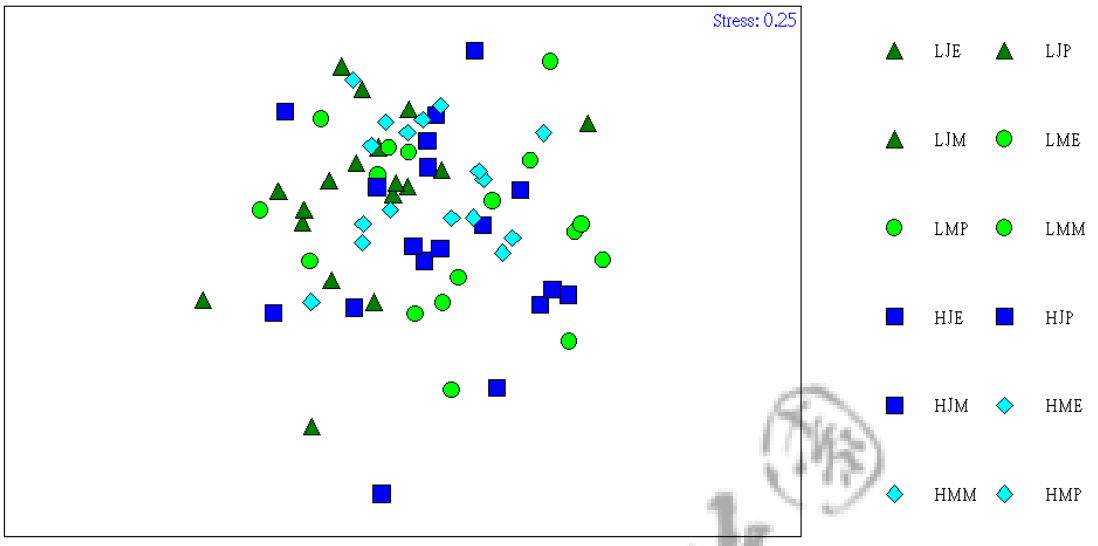

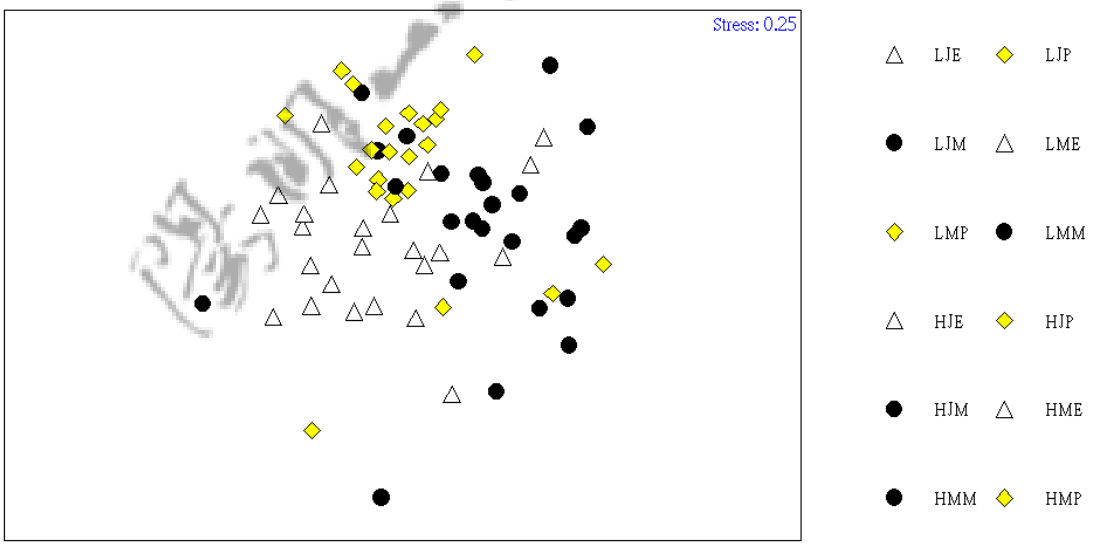

3. Analysis of similarities ANOSIM

µ MDS

ô Bray-Curtis ÌK‰Ø ANOSIM ¥ÁÖ ô

šá@ R vÁ 0.283ô *P v»* 0.01ä2"

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ANOSIM Global R v

*v- ô *6¥3¥ *: p<0.05ù **: p<0.01ù NS:*

	LJP	LJM	LME	LMP	LMM	HJE	HJP	HJM	HME	HMP	HMM
LJE	0.009**	0.006**	0.028*	0.004**	0.002**	0.017*	0.002**	0.002**	0.004**	0.004**	0.002**
LJP		0.905^{NS}	0.136^{NS}	0.409^{NS}	0.004**	0.028*	0.758^{NS}	0.006**	0.004**	0.519^{NS}	0.013*
LJM			0.117^{NS}	0.221^{NS}	0.03*	0.013*	0.396^{NS}	0.004**	0.004**	0.448^{NS}	0.03*
LME				0.766^{NS}	0.009**	0.574^{NS}	0.043*	0.019*	0.074^{NS}	0.022*	0.002**
LMP					0.156^{NS}	0.067^{NS}	0.197^{NS}	0.026*	0.035*	0.056^{NS}	0.102^{NS}
LMM						0.004**	0.004**	0.158^{NS}	0.006**	0.006**	0.106^{NS}
HJE							0.052^{NS}	0.019*	0.53^{NS}	0.004**	0.015*
HJP								0.015*	0.002**	0.468^{NS}	0.108^{NS}
HJM									0.006**	0.006**	0.076^{NS}
HME										0.004**	0.006**
HMP											0.019*
HMM											

Global R value=0.283, *P* value < 0.01

4. Unweighted Pair-Group Method Using Arithmetic averages

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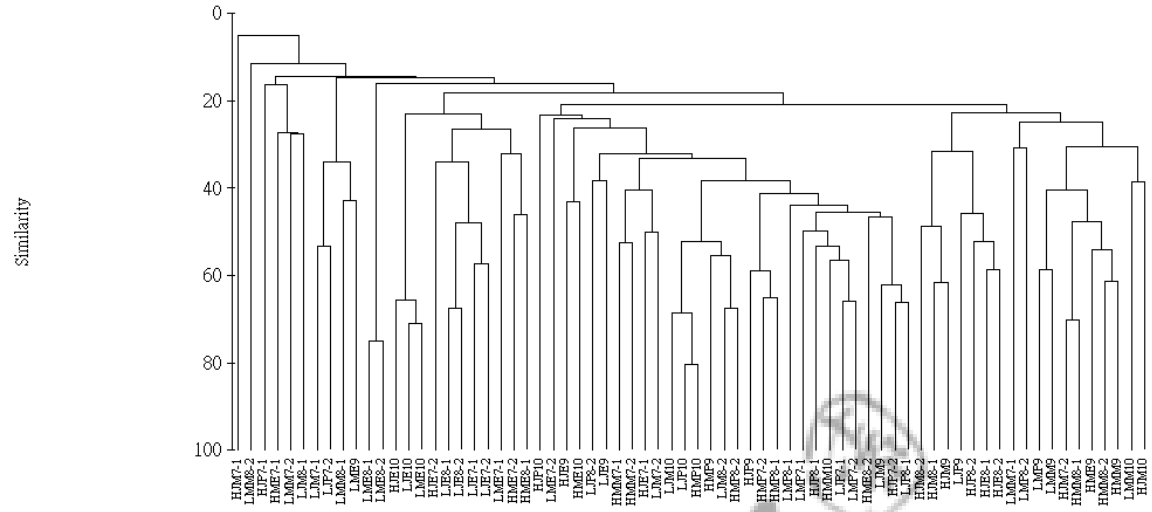

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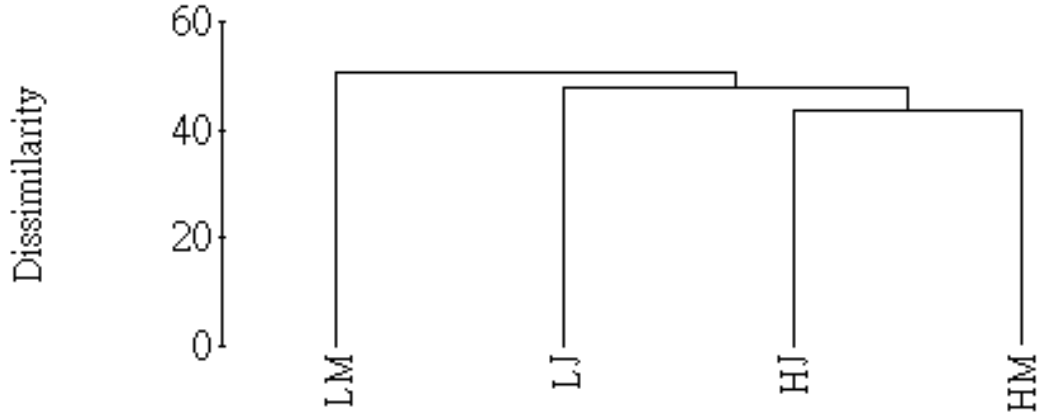

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18 ý 21 ¦ 21 27

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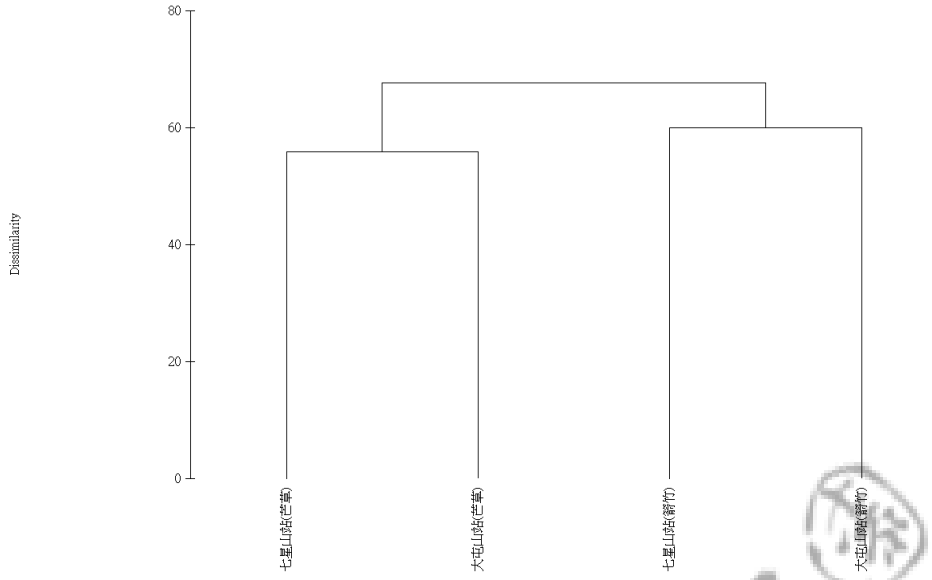
PRIMER v5.1 3: Bray-Curtis

dissimilarity matrix UPGMA Clustering analysis

		69.231	60.000		59.259
			74.074		55.882
					67.857



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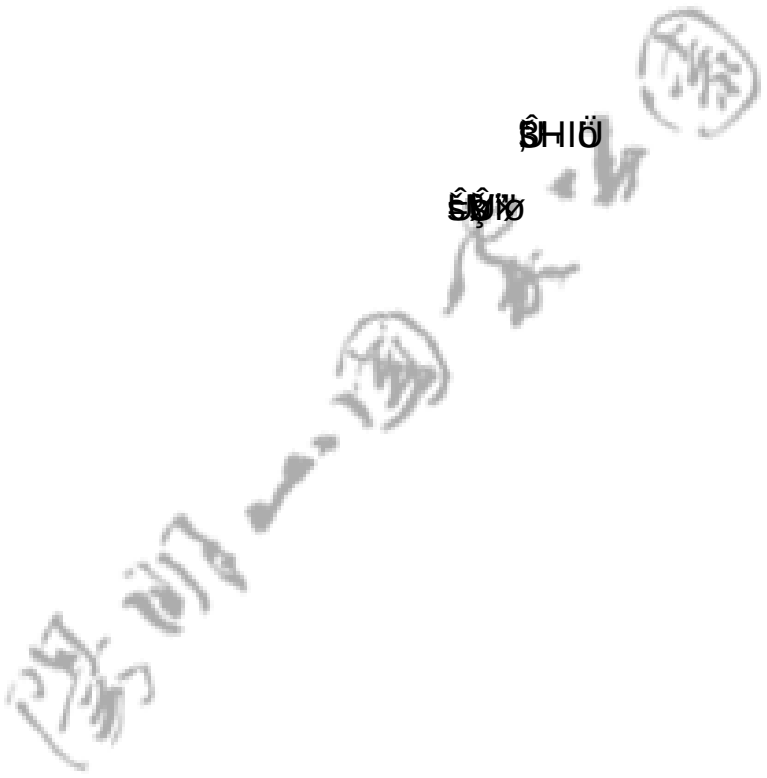

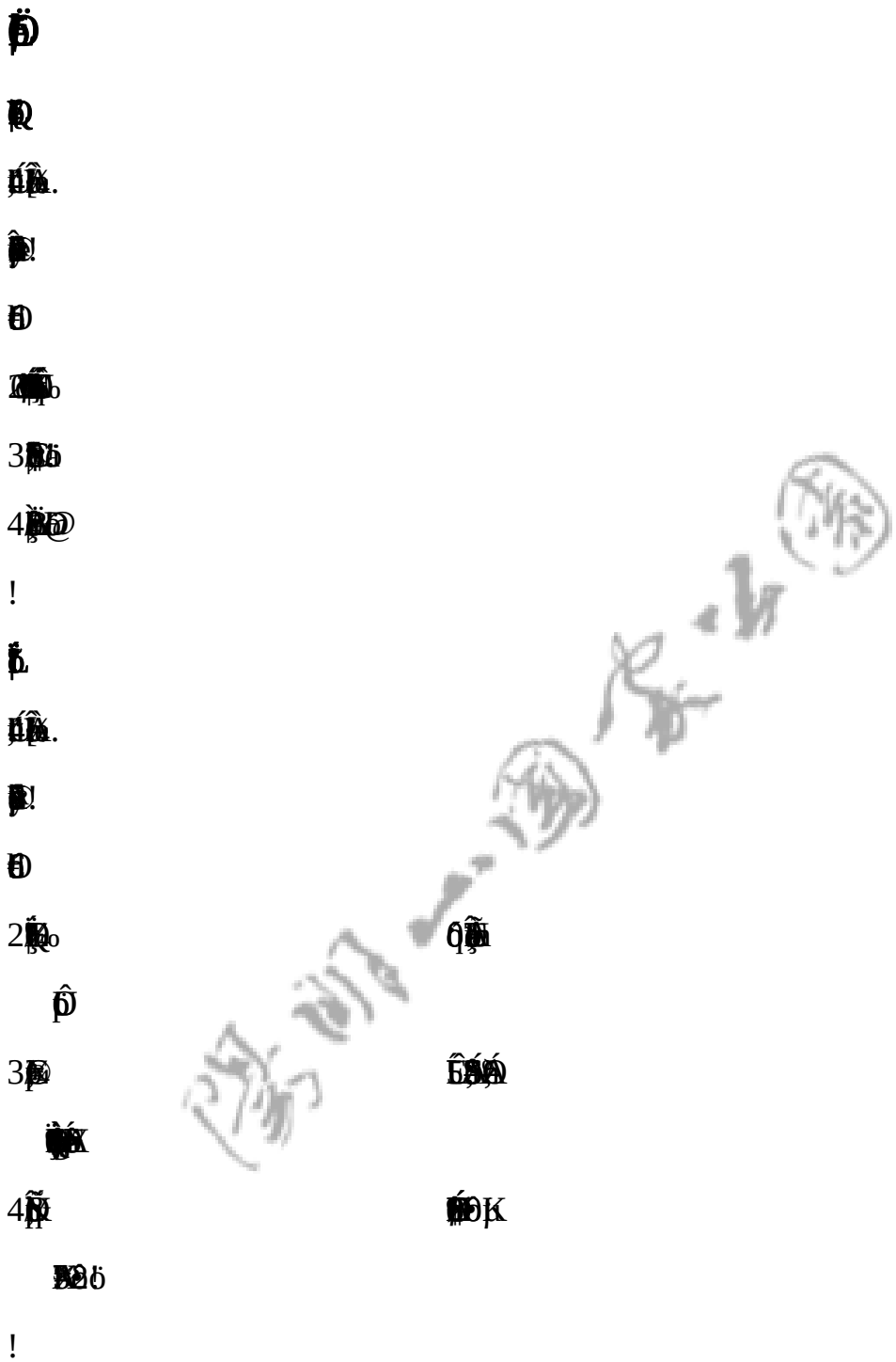

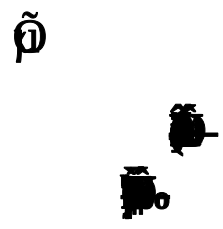

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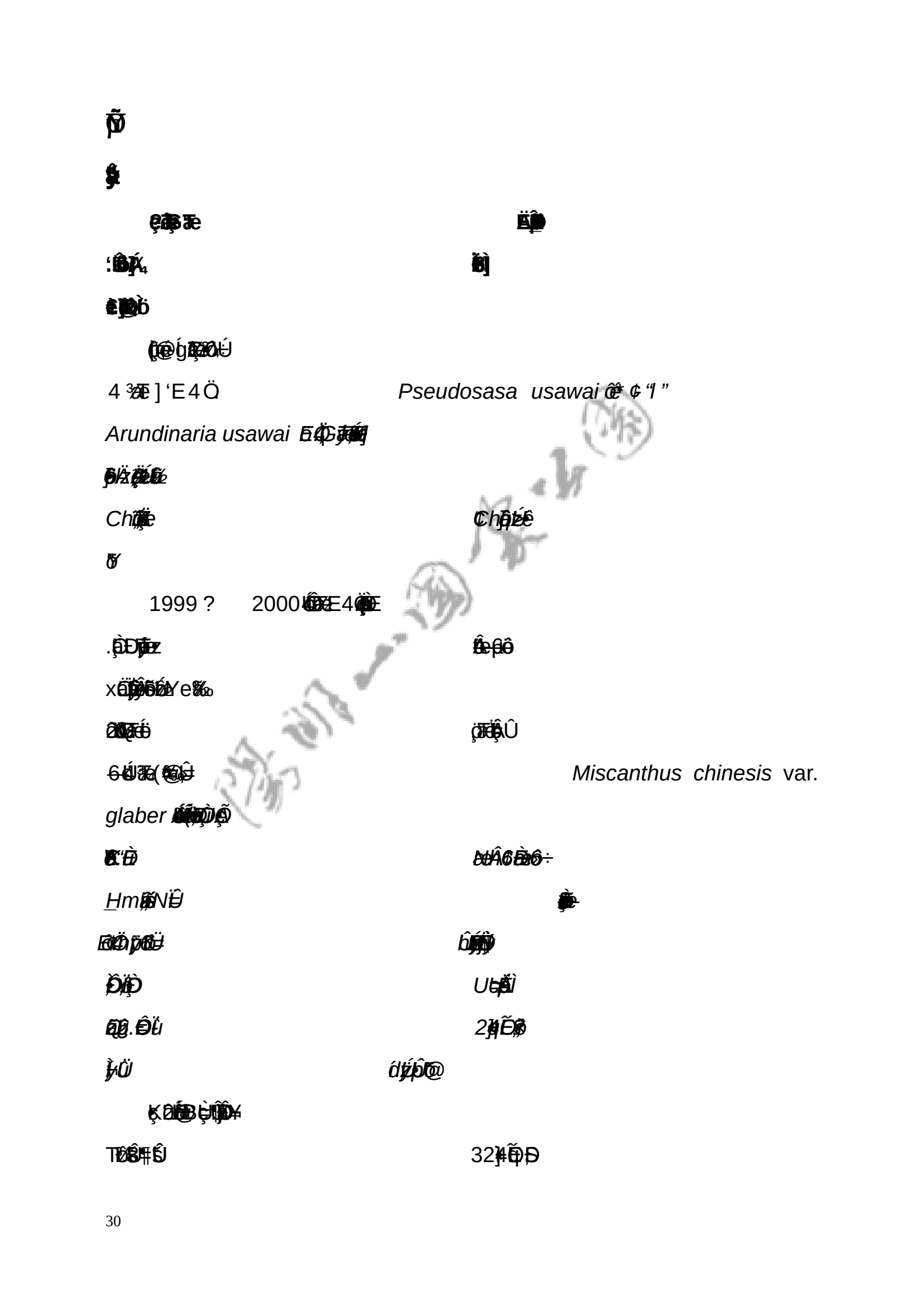

			Gryllotalpa fossor	-	+
			Trigonidium cicindeloides	-	+
			Loxoblemmus equestris	-	+
			Loxoblemmus sp.	+	-
			Duolandrevus coulonianus	+	+
			Pteronemobius sp.	-	+
			Rhaphidophoridae sp1	+	+
			Statilia maculata	-	+
			Amantis nawai	-	+
			Ectomocoris biguttulus	-	+
			Reduviidae sp1	-	+
			Reduviidae sp2	-	+
			Dalpada cinctipes	+	-
			Acanthosomatidae sp1	+	+
			Hygia opaca	-	-
			Physopelta gutta	-	+
			Trigonotoma sp.	+	+
			Carabidae sp1	+	+
			Carabidae sp2	+	+
			Calosma maximowiczi	+	-
			Apotomopterus sauteri	+	+
			Chlaenius circumdatus	+	+
			Morio japonicus	+	-
			hololeius ceylanicus	-	+
			Trigonotoma sp.	+	+
			Lesticus sauteri	+	+
			Ptrostichus distinctissima	+	+
			Pheropsophus javanus	+	+
			Eusilpha sp.	+	+
			Nicrophorus nepalensis	+	+
			Aegus laevicollis formosae	+	-
			Dorcus kyanrauensis	-	+

			cont’			
				Neolucanus swinhoei	+	+
				Dorcus titanus sika	+	-
				Torynorrhina pilifera	-	+
				Onthophagus proletarius	+	+
				Holotrichia omeia	+	+
				Onthophagus trituber	+	+
			!	*Paragymnopleurus sinuatus*	+	-
				Geotrupes formosanus	+	+
				Lampyrigera yunnanus	+	+
				Vesta impressicollis	-	+
				Henosepilachna pusillanima	+	-
				Epilachna crassimala	+	-
				Epilachna lata	+	-
				Strongylium sp.	+	-
				Dyscerus spp.	-	+
			!	Curculionidae sp1	+	+
			!	Curculionidae sp2	-	+
				Curculionidae sp3	+	+
			!	Curculionidae sp4	+	+
			!	Curculionidae sp5	+	+
			!	Curculionidae sp6	+	+
				Histeridae sp1	+	+
			!	Staphylinidae sp1	+	+
			!	Staphylinidae sp2	+	+
			!	Staphylinidae sp3	+	-
			!	Scolyidae sp1	+	+
			!	Nitidulidae sp1	+	+
			!	Biphyllidae sp1	+	+
			!	Biphyllidae sp2	+	+
			!	Biphyllidae sp3	+	-
			!	Biphyllidae sp4	+	+
				Tipula (Indotipula) yamata	+	+
				Limonia(Rhipidia) triarmata	+	-

		cont’			
	g]ý		Asilidae sp1	-	-
		!	Asilidae sp1	+	+
	:ý	:	Stratiomyidae sp1	-	+
	gý		Syrphidae sp1	+	-
	ý		Phoridae sp1	-	+
	@		Tephritidae sp1	+	+
	=ý	ó	*Chrysomyia megacephala*	-	+
			Calliphoridae sp1	+	+
	ý		*Musca domestica*	+	+
	&ý	&	Sciaridae sp1	-	+
		&	Sciaridae sp2	+	-
		&	Sciaridae sp3	+	-
	p&ý	!	Mycetophilidae sp1	+	-
		!	Mycetophilidae sp2	+	-
	4&ý	4&	Cecidomyiidae sp1	-	+
	@	!	Tephritodae sp1	+	+
	@	!	Drosophiloidae sp1	+	-
	:ý	:ó	*Sarcophaga peregrina*	+	-
R	ý	!	Sphingidae sp1	+	+
	ý		*Erebus ephesperis*	+	+
	&ý	8	*Lethe verma*	+	-
	ý		*Crematogaster dohrni*	+	+
			Tapinoma melanocephalum	+	+
			Leptogenys kitteli	+	+
			Pheidole sp.	+	-
			Monomorium pharaonis	+	+
			Odontomachus monticola	+	+
			Tetramorium nipponense	-	+
			Pheidole ernesti	+	+
			Anoplolepis longipes	-	+
		&	*Paratrechina longicornis*	+	-
	ý		*Camponotus carin tipunus*	+	-
			Aphanogaster sp.	+	+

		cont’			
			Podagrion chinensis	-	+
			Campsomeris annulata	-	+
			Scolia sp.	+	-
			Rhynchium quinquecinctum	-	-
			Vespa velutina flavitarsus	+	-
			Vespa ducalis	-	+
			Blattellidae sp1	-	+
			Chorisoneura nigra	+	+
			Symploce striata	+	+
			Supella longipalpa	+	-
			Blattella bisignata	+	+
			Symploce striata	+	+
			Rhabdoblatta formosana	+	+
			Pygidicranidae sp1	+	+
			Forficulidae sp1	+	+
			Forficulidae sp2	+	+
			Oligotomidae sp1	-	+

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ž.	!		phalanida sp1	+	+
	!	!	phalanida sp2	+	-
	!	!	phalanida sp3	+	+
	!	!	phalanida sp4	+	+
Ð.	ý..	!	Linyphiidae sp1	+	-
		!	Linyphiidae sp.	-	+
		MÑ.	*Neriene albolimbata*	+	-
	ŷ..	Ö…	*Araneus pentagrammicus*	-	-
		ÃZÃ…	*Neoscona melloteei*	-	-
	ÿ..	…	*Leucauge magnifica*	-	-
	ÿÃ.	!	*Dipoena* sp.	+	+
	ý..	!	Leptonetidae sp1	+	+
	ý..	õ.	*Lycosa coeletis*	+	+
		!	*Lycosa* sp.	+	+
		ž…	*Pardosa laura*	-	+
		¦¸..	*Pardosa pseudoannulata*	-	+
		!	*Pirata denticulatus*	+	+
			Lycosidae sp1	+	+
	ŷ.	õ.	*Agelena tungchis*	+	-
			Agelenidae sp1	+	-
			Agelenidae sp2	-	-
			Agelenidae sp3	+	-
			Agelenidae sp4	+	-
	ŷ.	õ.	Agelenidae sp5	+	-
	ý..	¼..	*Heteropoda venatoria*	+	-
			Sparassidae sp1	+	-
			Sparassidae sp2	+	-
			Sparassidae sp3	-	+
	ý.	¦..	*Cheiracanthium* sp.	+	+
			Clubionidae sp.	-	+
	Gý..	¨¦..	*Ctenus yaeyamensis*	+	-
			Ctenidae sp1	+	+

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ž Ü	ý Ü	Ð	â Ü	.E	ê
			Ctenidae sp2	+	+
			Ctenidae sp3	+	-
	ý..	CG…	*Dolomedes mizhoanus*	+	-
		G…	*Dolomedes raptor*	+	+
Ð.	bý..	*Ð	*Synagelides palpaloides*	-	+
	pý..		*Mallinella fulvipes*	-	+
	uý..		Liocranidae sp1	+	-
			Liocranidae sp2	+	-
			Liocranidae sp3	+	+
	ý..	Ð..	*Oxyopes strtatus*	-	-
	sý..	p³..	*Asceua japonnica*	+	+
	ý..	¶..	*Ctenus yaeyamensis*	+	+
	ý.	Ín.	*Psechrus sinensis*	+	+
	ý	Ðà.	*Myrmarachne innermichelis*	-	+
	ý.	Ð.	*Xysticus chui*	-	+
		bÐ.	*Xysticus crocrus*	-	+
		!	*Xysticus* sp	-	+

		Bufo bankorensis	+	+	
		Hyla chinensis	-	+	
		Chirixalus idiootocus	-	+	
		Polypedates megacephalus	-	+	
		Rhacophorus taipeianus	+	+	
		Rana latouchi	-	+	
		Rana limnocharis	-	+	
		Rana swinhoana	+	+	

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fŷ	ó	*Japalura polygonata xanthostoma*	-	+	
ŷ	ë	*Takydromus viridipunctatus*	+	+	₸f
ê	=ê	*Eumeces elegans*	+	+	
	Ñ(	*Sphenomorpbus indicus*	+	+	
=9	ø	*Bungarus multicinctus*	-	+	₸f
	Â	*Ptyas mucosus*	+	-	
	’Â	*Ptyas korros*	-	+	₸f
		Zaocys dhumnades	+	+	₸f

ý Ü	ë	â Ü	.E	ê	¥
tý	Ð	*Bubulcus ibis*	-	+	Ŧf
	`	*Egretta garzetta*	-	+	Ŧf
	t	*Nycticorax nycticorax*	-	+	Ŧf
sý	5Ş	*Accipiter trivirgatus*	+	+	Ŧf
	£	*Spilornis cheela*	+	+	
ÿ	j	*Falco tinnunculus*	+	+	
ÿ	.Š	*Bambusicola thoracica*	+	+	
±ý	´	*Streptopelia chinensis*	-	+	Ŧf
	Ê	*Streptopelia orientalis*	+	+	Ŧf
	±	*Streptopelia tranquebarica*	-	+	Ŧf
ÿ	§	*Centropus bengalensis*	-	+	
	´	*Cuculus saturatus*	-	+	Ŧf
ý	¯	*Apus affinis*	+	+	
5ý	Ë	*Megalaima oorti*	+	+	
*ý	Î	*Hirundo rustica*	+	+	
	©	*Hirundo tahitica*	+	+	
	½	*Riparia paludicola*	+	+	
4e	52	*Anthus hodgsoni*	+	+	
	4æ	*Motacilla alba*	+	+	
	æ	*Motacilla flava*	+	+	
2ñ	O2ñ	*Hypsipetes madagascariensis*	+	+	
	Ð	*Pycnonotus sinensis*	+	+	
d.ý	À	*Lanius cristatus*	+	+	Ŧf
2ô	TZô	*Monticola solitarius*	+	+	Ŧf
	2ô	*Turdus obscurus*	+	+	Ŧf
ý	Þ	*Alcippe brunnea*	-	+	Ŧf
	Gsí	*Alcippe morrisonia*	+	+	
	Ø	*Pomatorhinus erythrogenys*	+	+	
	ø	*Pomatorhinus ruficollis*	+	+	
	Ø	*Stachyris ruficeps*	+	+	
Oý	Ð	*Paradoxornis webbianus*	+	+	
ÿ	þ	*Acrocephalus arundinaceus*	+	-	

cont’

			Cettia fortipes	+	-	
			Prinia flaviventris	+	+	
Gsý		Gs	*Zosterops japonica*	+	+	
ý		¬	*Lonchura punctulata*	+	+	
ý			*Passer montanus*	+	+	f
			Dicrurus macrocercus	+	+	
ý		T9	*Urocissa caerulea*	+	+	f
		9	*Dendrocitta formosae*	+	+	

ý Ü	Ü	â Ü	.E	
ÿ™	%™	*Selaginella doederleinii*	+	+
	nÆ	*Plagiogyria euphlebia*	+	-
	vÆ	*Diplazium dilatatum*	+	+
	bÆ	*Microsorium buergerianum*	+	-
	ß(	*Ficus erecta* var. *beecheyana*	-	+
	»	*Morus australis*	-	+
	eØ	*Gonostegia hirta*	+	+
	ØKl£	*Pellionia arisanensis*	+	+
	¾	*Helicia formosana*	-	+
	(.ï)	*Polygonum chinense*	+	+
	Ë.	*Polygonum longisetum*	+	-
	2™	*Rumex crispus* var. *japonicus*	-	+
	s	*Machilus thunbergii*.	+	+
	2¯	*Trochodendron aralioides*	+	-
	Þ	*Mahonia japonica*	-	+
	eï	*Piper kadsura*	-	+
	¾	*Sarcandra glabra*	-	+
	L	*Asarum macranthum*	+	-
	s	*Eurya chinensis*	-	+
	7s	*Eurya crenatifolia*	-	+
	’Ds	*Eurya loquaiana*	+	-
	¯8¸	*Hydrangea angustipetala*	+	+
	Â	*Duchesnea indica*	+	+
	( )	*Prunus phaeosticta*	-	+
	L‹	*Rubus sumatranus*	+	-
	‹	*Rubus swinhoei*	-	+
	Â	*Oxalis corniculata*	-	+
	þ	*Acer kawakamii*	-	+
	)€	*Ilex asprella*	+	+
	AŸ	*Euonymus carnosus*	-	+
	ÿ	*Tetrastigma formosanum*	-	+
		Cayratia japonica	+	+

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Ü	Ü	â Ü	.E	ê
ùý	ù	*Elaeocarpus sylvestris* var. *sylvestris*	-	+
	Ñ.	*Elaeagnus thunbergii*	-	+
	ßó (ßØ)	*Viola diffusa*	-	+
	¨#	*Melastoma candidum*	-	+
	]V	*Dendropanax dentiger*	+	-
	þ	*Hedera rhombea* var. *formosana*	-	+
	½	*Angelica dahurica* var. *formosana*	+	+
	ææ	*Centella asiatica*	+	+
	þ	*Hydrocotyle batrachium*	+	+
	gÙ	*Hydrocotyle nepalensis*	-	+
	ê	*Rhododendron oldhamii*	-	-
	g‰ (æØ)	*Ardisia crenata*	+	-
	û	*Ardisia sieboldii*	-	+
	*	*Symplocos chinensis*	-	+
	Ši	*Paederia foetida*	-	+
	¸ (Kg)	*Callicarpa formosana* var. *formosana*	+	+
	Ø	*Premna microphylla*	-	+
	ez]	*Clinopodium chinense*	-	+
	¸#	*Clinopodium gracile*	-	+
	KÊ	*Salvia japonica*	-	+
	yæ	*Torenia concolor*	+	+
	DÉ	*Justicia procumbens* var. *procumbens*	+	-
	KÛ	*Plantago asiatica*	+	+
	ÆÛ	*Plantago major*	+	-
	²	*Viburnum luzonicum*	-	+
	4]	*Dichrocephala integrifolia*	+	-
	¥¼	*Farfugium japonicum* var. *formosanum*	+	+
	‰	*Galinsoga quadriradiata*	+	-
	¨	*Smilax china*	-	+
	¼	*Smilax lanceifolia*	-	+
	Ë	*Amischotolype hispida*	-	+
	ì	*Pollia miranda*	-	+
	õ	*Ichnanthus vicinus*	+	+

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Ü	Ü	â Ü	.E	â
	&	*Paspalum dilatatum*	+	-
	Ä	*Alocasia odora*	-	+
	™	*Arisaema ringens*	-	+

7-10

Group	§	O§	Richness	Evenness	Shannon	Simpson
LJE7-1	17	86	3.592	0.696	1.972	0.7436
LJP7-1	6	36	1.395	0.7511	1.346	0.673
LJM7-1	3	8	0.9618	0.8869	0.9743	0.6786
LME7-1	35	193	6.461	0.8453	3.005	0.9316
LMP7-1	15	66	3.342	0.8011	2.169	0.8364
LMM7-1	7	138	1.218	0.7729	1.504	0.7016
HJE7-1	14	64	3.126	0.7902	2.085	0.8343
HJP7-1	5	21	1.314	0.8103	1.304	0.7048
HJM7-1	5	41	1.077	0.5989	0.9639	0.5634
HME7-1	21	33	5.72	0.9501	2.893	0.964
HMM7-1	12	35	3.094	0.8642	2.147	0.8723
LJE7-2	23	71	5.161	0.817	2.562	0.8692
LJP7-2	3	7	1.028	0.7248	0.7963	0.5238
LJM7-2	9	32	2.308	0.8521	1.872	0.8306
LME7-2	17	79	3.662	0.6164	1.747	0.6784
LMP7-2	10	40	2.44	0.7169	1.651	0.6897
LMM7-2	9	18	2.768	0.8527	1.874	0.8366
HJE7-2	22	60	5.129	0.8472	2.619	0.9085
HJP7-2	10	66	2.148	0.8137	1.874	0.8079
HJM7-2	9	34	2.269	0.8287	1.821	0.8217
HME7-2	23	124	4.564	0.8618	2.702	0.918
HMP7-2	7	18	2.076	0.6927	1.348	0.634
HMM7-2	10	49	2.313	0.8497	1.956	0.8537
LJE8-1	19	129	3.704	0.5868	1.728	0.6779
LJP8-1	9	49	2.056	0.8001	1.758	0.8053
LJM8-1	7	11	2.502	0.9243	1.799	0.8909
LME8-1	19	144	3.622	0.6651	1.958	0.7194
LMP8-1	10	58	2.217	0.7265	1.673	0.752
LMM8-1	10	25	2.796	0.921	2.121	0.9
HJE8-1	20	77	4.374	0.8389	2.513	0.8968
HJP8-1	10	43	2.393	0.7058	1.625	0.7099
HJM8-1	10	45	2.364	0.8182	1.884	0.8131
HME8-1	17	63	3.862	0.8065	2.285	0.8725
HMP8-1	6	22	1.618	0.5033	0.9017	0.4113
HMM8-1	7	40	1.627	0.7753	1.509	0.7526
LJE8-2	20	126	3.929	0.6624	1.984	0.7723
LJP8-2	10	91	1.995	0.7757	1.786	0.7915
LJM8-2	6	56	1.242	0.7529	1.349	0.6818

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Group	§	O§	Richness	Evenness	Shannon	Simpson
LME8-2	9	112	1.695	0.4023	0.8839	0.3637
LMP8-2	8	153	1.392	0.6808	1.416	0.6386
LMM8-2	10	150	1.796	0.5142	1.184	0.595
HJE8-2	23	87	4.926	0.7841	2.458	0.8618
HJP8-2	9	50	2.045	0.6226	1.368	0.5829
HJM8-2	15	57	3.463	0.7937	2.149	0.8283
HME8-2	20	71	4.457	0.8021	2.403	0.8636
HMP8-2	7	42	1.605	0.3812	0.7419	0.3078
HMM8-2	11	57	2.473	0.7012	1.681	0.7569
LJE9	26	129	5.144	0.8486	2.765	0.9176
LJP9	17	108	3.417	0.6912	1.958	0.7892
LJM9	11	58	2.463	0.8375	2.008	0.83
LME9	13	31	3.494	0.8743	2.243	0.886
LMP9	8	34	1.985	0.7193	1.496	0.7184
LMM9	8	24	2.203	0.6942	1.444	0.6558
HJE9	26	89	5.57	0.8583	2.796	0.9308
HJP9	7	19	2.038	0.6691	1.302	0.6082
HJM9	10	59	2.207	0.8277	1.906	0.827
HME9	19	69	4.251	0.7609	2.24	0.8282
HMP9	15	97	3.06	0.6245	1.691	0.7064
HMM9	9	83	1.81	0.8296	1.823	0.814
LJE10	23	163	4.319	0.5914	1.854	0.7257
LJP10	4	93	0.6619	0.1284	0.1779	6.38E-02
LJM10	5	64	0.9618	0.4144	0.6669	0.3279
LME10	27	209	4.867	0.558	1.839	0.6503
LMM10	11	31	2.912	0.8934	2.142	0.8839
HJE10	22	156	4.159	0.5707	1.764	0.6221
HJP10	15	164	2.745	0.6523	1.766	0.7428
HJM10	8	47	1.818	0.914	1.901	0.8548
HME10	14	55	3.244	0.8482	2.238	0.8822
HMP10	10	91	1.995	0.3931	0.9052	0.3548
HMM10	7	43	1.595	0.7692	1.497	0.7254

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