COMMUNITY ASSEMBLY ON ISOLATED ISLANDS: MACROECOLOGY MEETS EVOLUTION

Global Ecology and Biogeography: Supplemental Material

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Compilation of networks and metric validation

We compiled plant-herbivore networks from published sources as described in the main text. Table S1 lists publications used in compiling these networks.

Researchers have put forward to set of "network metrics," including nestedness (Bascompte et al., 2003; Ulrich et al., 2009) and modularity (Newman & Girvan, 2004; Olesenet al., 2007), to understand the complex structure of ecological networks. Null models are used to evaluate the statistical significance of these metrics and to compare between networks of different size (Ulrich et al. 2009). We compare the results derived from two common null models: the "probabilistic null" of Bascompte et al. (2003) and the "fixed-fixed null" (Ulrich et al., 2009). The "probabilistic null" uses the relative degree distributions of plants and herbivores as weights while randomizing links, but suffers from high Type II error (Ulrich et al., 2009). The "fixed-fixed null" (Ulrich et al., 2009) maintains the exact number of links assigned to each species while randomizing which interactors fill the requisite set of links, but suffers from high Type I error (Ulrich et al., 2009). We find that using these different null models does not change any trends in our network statistics across the Hawaiian chronosequence but different null models do influence the sign and significance of the network metrics (Fig. 1). We therefore do not interpret the sign or significance of the metrics but only their relative trends across site age.

Because these networks are based on opportunistic data associated with species descriptions and not based on standardized ecological surveys, we cannot interpret patterns in network metrics without evaluating possible sampling biases (Nielsen & Bascompte, 2007; Gibson et al., 2011; Rivera-Hutinel et al., 2012). To do so we rarify networks by the number of Hemiptera species included and, for each subsampled network, re-calculate nestedness and modularity z-scores. This rarefaction procedure shows that nestedness is very sensitive to

network size (Fig. 3), a known property of nestedness (Nielsen & Bascompte, 2007; Gibson et al., 2011; Rivera-Hutinel et al., 2012). However the relative nestedness z-scores across networks remain qualitatively similar to those observed for the complete networks (Fig. 3). Modularity depends on network size in a more variable way (Fig. 3). Modularity is expected to decrease with network size (Rivera-Hutinel et al., 2012) and so the marked increase in modularity with network size on Haleakala is unexpected. However in light of the large number of highly specialized taxa this pattern is more reasonable if most species only have within module links then removing these species through subsampling will only reduce overall modularity. Thus this pattern speaks to the high level of specialization on Haleakala, and to a lesser extent at Kokee, which also shows a slight increase in modularity with network size (Fig. 3).

References

Bascompte, J., Jordano, P., Melian, C.J. & Olesen, J.M. (2003) The nested assembly of plant-animal mutualistic networks. *Proc. Natl Acad. Sci. USA*, **100**, 9383-9387.

Gibson, R.H., Knott, B., Eberlein, T. & Memmott, J. (2011) Sampling method influences the structure of plant-pollinator networks. *Oikos*, **120**, 822-831.

Newman, M. & Girvan, M. (2004) Finding and evaluating community structure in networks. *Physical Review E*, **69**, 026113.

Nielsen, A. & Bascompte, J. (2007) Ecological networks, nestedness and sampling effort. *Journal of Ecology*, **95**, 1134-1141.

Olesen, J., Bascompte, J., Dupont, Y. & Jordano, P. (2007) The modularity of pollination networks. *Proc. Natl Acad. Sci. USA*, **104**, 19891-19896.

Rivera-Hutinel, A., Bustamante, R., Marin, V. & Medel, R. (2012) Effects of sampling completeness on the structure of plant-pollinator networks. *Ecology*, **93**, 1593-1603.

Ulrich, W., Almeida-Neto, M. & Gotelli, N.J. (2009) A consumer's guide to nestedness analysis. *Oikos*, **118**, 3-17.

Supplemental Figures

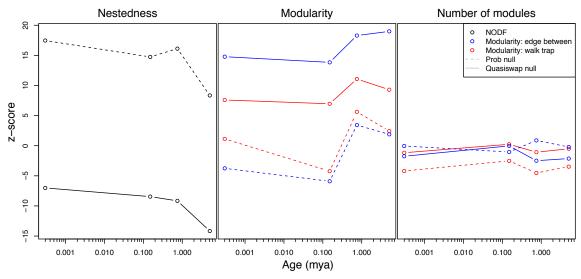


Figure S1. Comparison of different null models ("Prob" and "Quasiswap") used to standardize network metrics and comparison of different algorithms for assessing modularity ("edge between" and "walk drap"). Choice of null model has a strong influence on the sign and magnitude of metrics but not on their relative trends. The different modularity algorithms led to largely similar qualitative patterns.

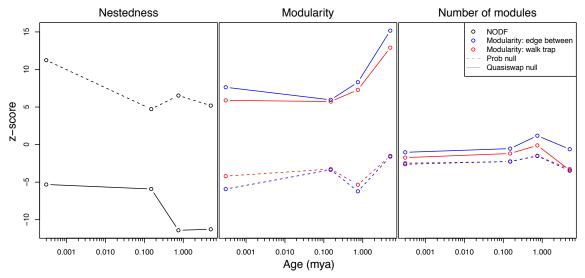


Figure S2. Metrics NODF and modularity calculated for networks based on more biogeographically conservative assignment of Hemiptera to localities. Colors and metric specifics as in Figure 1.

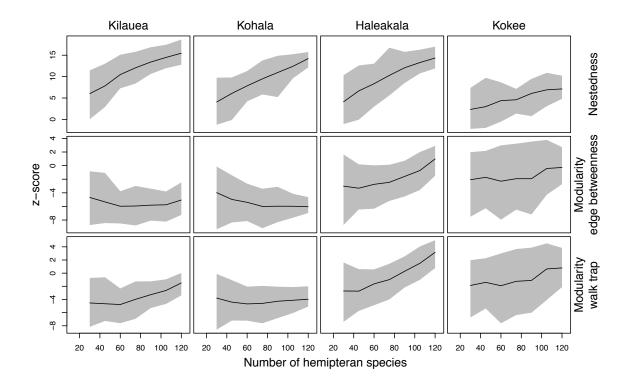


Figure S3. Result from rarifacation analysis showing sensitivity of network metrics to number of Hemiptera sampled.

 Table S1. Published sources of trophic information used to construct networks.

Suborder	Family	Genus and species	References	Host Plants
AUCHENORRYNCHA	Cicadellidae	Balclutha fuscifrons	Knight and Webb 1988	n.d.
AUCHENORRYNCHA	Cicadellidae	Balclutha lobata	Namba 1956	Cyathodes sp.
AUCHENORRYNCHA	Cicadellidae	Balclutha phoxocephala	Namba 1956	Cyathodes sp., Eragrostis variabilis
AUCHENORRYNCHA	Cicadellidae	Balclutha plutonis	Kirkaldy 1910	Argyroxiphium virescens, Coprosma sp., Cyathodes sp., Deschampsia sp., Eragrostis sp., Sophora sp., Vincentia sp.
AUCHENORRYNCHA	Cicadellidae	Balclutha usitata	Namba 1956	Cyathodes sp.
AUCHENORRYNCHA	Cicadellidae	Balclutha volcanicola	Kirkaldy 1910	Eragrostis sp., Cyperus sp., Lythrum sp.
AUCHENORRYNCHA	Cicadellidae	Balolina kilaueae	Kirkaldy 1910; Knight and Webb 1988	Cibotium chamissoi, Cibotium menziesii
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne aakokohaikea	Bennett 2011	Broussasia arguta
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne affinis	Osbom 1935	n.d.
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne caelicola	Osbom 1935	Coprosma sp., Coprosma montana
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne cinerea	Osborn 1935	Psychotria hawaiiensis
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne comma	Kirkaldy 1910	Coprosma sp., Coprosma rhynchocapra
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne cuprescens	Osbom 1935	Antidesma platyphyllum, Myoporum sandwicense, Psychotria hawaiiensis

AUCHENORRYNCHA	Cicadellidae	Nesophrosyne eburneola	Kirkaldy 1910	n.d.
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne ehu	Osborn 1935	Lobelia sp, Coprosma sp.,
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne furculata	Kirkaldy 1910	Myoporum sandwicense
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne giffardi	Osborn 1935	Myoporum sandwicense
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne haleakala	Kirkaldy 1910	n.d.
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne halemanu	Bennett 2011	Broussasia arguta
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne heopoko	Kirkaldy 1910	Pittosporum longifolia, Pittosporum hosmeri
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne imbricola	Kirkaldy 1910	Psychotria hawaiiensis
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne insularis	Bennett 2011	Broussasia arguta
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne mabae	Osborn 1935	Psychotria hawaiiensis
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne maritima	Kirkaldy 1910	Pipturus albidus
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne milu	Kirkaldy 1910	Pipturus albidus
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne monticola	Kirkaldy 1910	Coprosma pubens, Sadleria sp., Myrsine sp.
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne montium	Kirkaldy 1910	Myrsine lessertiana
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne montivaga	Kirkaldy 1910	n.d.
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne nimbigena	Kirkaldy 1910	Dodonaea viscosa spathulata
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne notatula	Osborn 1935	Coprosma montana, Saddleria sp.
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne nubigena	Kirkaldy 1910	Psychotria hawaiiensis

AUCHENORRYNCHA	Cicadellidae	Nesophrosyne nuenue	Bennett 2011	Broussasia arguta
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne obliqua	Kirkaldy 1910	Coprosma sp.
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne ogradyi	Kirkaldy 1910	Wikstroemia oahuensis, Wikstroemia sp.
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne palolo	Kirkaldy 1910	Melicope sp., Melicope hawaiiensis radiata
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne peleae	Kirkaldy 1910	Coprosoma sp., Coprosma rhynchocapra, Coprosma menziesii
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne procellaris	Kirkaldy 1910	Metrosideros polymorpha, Psychotria hawaiiensis
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne sanguinea	Kirkaldy 1910	n.d.
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne signatula	Osborn 1935	n.d.
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne silvicola	Osborn 1935	Touchardia latifolia
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne silvigena	Kirkaldy 1910	Myrsine lessertiana
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne touchardii	Kirkaldy 1910	Microlepia strigosa, Hedyotis sp., Psychotria sp.
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne ulaula nigrolineata	Kirkaldy 1910	n.d.
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne umbricola	Kirkaldy 1902; Namba 1955	n.d.
AUCHENORRYNCHA	Cicadellidae	Nesophrosyne umbrigena	Kirkaldy 1902; Namba 1955	n.d.
AUCHENORRYNCHA	Cicadellidae	Nesophryne alticola	Osborn 1935	Coprosma sp.

AUCHENORRYNCHA	Cicadellidae	Nesophryne kaiamamao	Bennett 2011	Broussasia arguta
AUCHENORRYNCHA	Cicadellidae	Nesosteles volcanicola	Kirkaldy 1910	Eragrostis sp.
AUCHENORRYNCHA	Cixiidae	Iolania kraussohana	Hoch 2006	Cibotium sp. sp, Sadleria sp.
AUCHENORRYNCHA	Cixiidae	Iolania mauiensis	Giffard 1925; Hoch 2006	Broussaisia sp., Cibotium sp., Sadleria sp.
AUCHENORRYNCHA	Cixiidae	Iolania perkinsi	Kirkaldy 1902; Hoch 2006	n.d.
AUCHENORRYNCHA	Cixiidae	Oliarus filicicola	Kirkaldy 1909a	Cibotium sp.
AUCHENORRYNCHA	Cixiidae	Oliarus haleakalae	Kirkaldy 1909a	Cibotium chamissoi, Cyrtandra sp.
AUCHENORRYNCHA	Cixiidae	Oliarus halehaku	Giffard 1925	Cibotium sp., Sadleria sp., Cibotium sp., Pipturus sp.
AUCHENORRYNCHA	Cixiidae	Oliarus halemanu	Giffard 1925	n.d.
AUCHENORRYNCHA	Cixiidae	Oliarus immaculatus	Giffard 1925	sp.
AUCHENORRYNCHA	Cixiidae	Oliarus inaequalis	Giffard 1925	n.d.
AUCHENORRYNCHA	Cixiidae	Oliarus inaequalis kohala	Giffard 1925; Metcalf 1936	n.d.
AUCHENORRYNCHA	Cixiidae	Oliarus inconstans	Giffard 1925	n.d.
AUCHENORRYNCHA	Cixiidae	Oliarus intermedius	Giffard 1925	n.d.
AUCHENORRYNCHA	Cixiidae	Oliarus kanakanus	Kirkaldy 1902; Giffard 1925	Metrosideros polymorpha
AUCHENORRYNCHA	Cixiidae	Oliarus koae	Giffard 1925	Acacia koa

AUCHENORRYNCHA	Cixiidae	Oliarus kulanus	Giffard 1925	n.d.
AUCHENORRYNCHA	Cixiidae	Oliarus montanus	Giffard 1925	n.d.
AUCHENORRYNCHA	Cixiidae	Oliarus monticola	Kirkaldy 1909a; Giffard 1925	n.d.
AUCHENORRYNCHA	Cixiidae	Oliarus muiri	Giffard 1925	n.d.
AUCHENORRYNCHA	Cixiidae	Oliarus neomorai oahuana	Giffard 1925; Metcalf 1936	n.d.
AUCHENORRYNCHA	Cixiidae	Oliarus nubigenus	Kirkaldy 1909a; Giffard 1925	n.d.
AUCHENORRYNCHA	Cixiidae	Oliarus opuna	Kirkaldy 1909a; Giffard 1925	Astelia sp., Coprosma sp., Dubautia sp, Nephrolepis exaltata
AUCHENORRYNCHA	Cixiidae	Oliarus pele	Kirkaldy 1909a; Giffard 1925	Metrosideros polymorpha
AUCHENORRYNCHA	Cixiidae	Oliarus silvestris	Kirkaldy 1909a; Giffard 1925	n.d.
AUCHENORRYNCHA	Cixiidae	Oliarus similis lanaiana	Giffard 1925; Metcalf 1936	n.d.
AUCHENORRYNCHA	Cixiidae	Oliarus similis mauiana	Giffard 1925; Metcalf 1936	n.d.
AUCHENORRYNCHA	Cixiidae	Oliarus similis molokaiana	Giffard 1925; Metcalf 1936	n.d.
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AUCHENORRYNCHA	Cixiidae	Oliarus waialeale	Giffard 1925	n.d.
AUCHENORRYNCHA	Delphacidae	Aloha ipomoeae	Kirkaldy 1910; Muir 1916	Ipomoea pes-caprae, Ipomoea batatas,Ipomoea bonanox, Ipomoea tuberculata, Ipomoea insularis, Ipomoea sp.
AUCHENORRYNCHA	Delphacidae	Aloha myoporicola	Kirkaldy 1910	Myoporum sandwicense, Pelea sp. volcanicola
AUCHENORRYNCHA	Delphacidae	Aloha swezeyi	Muir 1916; Muir 1922	Bidens sp., Cheirodendron sp., Lipochaeta sp., Cythrum sp., Campylotheca sp.
AUCHENORRYNCHA	Delphacidae	Dictyophorodelphax praedicta	Bridwell 1919; Zimmerman 1948	Euphorbia hookeri integrifolia
AUCHENORRYNCHA	Delphacidae	Dictyophorodelphax zwaluwenburgi	Beardsley 1956, 1960	Euphorbia celastroides, Leptecophylla sp. tameiameiae
AUCHENORRYNCHA	Delphacidae	Dictyophorodelphax zwaluwenburgi vicar	Asquith 1995	Euphorbia sp.
AUCHENORRYNCHA	Delphacidae	Emoloana eragrosticola	Asquith 1995	Eragrostis variabilis
AUCHENORRYNCHA	Delphacidae	Emoloana menehune	Asche 2006	Eragrostis species

				Sporobolus virginicus, Eragrostis
				atropioides, Deschampsia australis,
AUCHENORRYNCHA	Delphacidae	Emoloana sporobolicola	Kirkaldy 1910	Vincentia angustifolia, Gahnia sp.
		Emoloana sporobolicola		Deschampsia australis, Vincentia
AUCHENORRYNCHA	Delphacidae	immaculata	Muir 1921	angustifolia
AUCHENORRYNCHA	Delphacidae	Leialoha hawaiiensis	Muir 1916	Metrosideros polymorpha
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AUCHENORRYNCHA	Delphacidae	Leialoha mauiensis	Muir 1919	Metrosideros polymorpha
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AUCHENORRYNCHA	Delphacidae	Nesosydne ipomoeicola	Kirkaldy 1907, 1908	Sadleria sp., Ipomoea sp., Antidesma sp., Bermuda grass, Cibotium sp., Cyrtandra sp., Dolichos lablab, Gouldia elongata, Jussiaea villosa, Lythrum maritimum, Mucuna gigantea, Pipturus sp., Polygonum sp., Rumex sp., Strongylodon lucidum,
AUCHENORRYNCHA	Delphacidae	Nesosydne koae	Kirkaldy 1907, 1908; Muir 1916; Muir 1917	Acacia koa
AUCHENORRYNCHA	Delphacidae	Nesosydne koae-phyllodii	Muir 1916	Acacia koa
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AUCHENORRYNCHA	Delphacidae	Nesosydne pilo	Muir 1922	Coprosma ernodeoides
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AUCHENORRYNCHA	Delphacidae	Nesosydne raillardiae	Kirkaldy 1908	Dubautia scabra, Dubautia ciliolata
AUCHENORRYNCHA	Delphacidae	Nesosydne raillardiicola	Muir 1919	Dubautia menziesii
AUCHENORRYNCHA	Delphacidae	Nesosydne rubescens	Kirkaldy 1907; Muir 1916	Acacia koa
AUCHENORRYNCHA	Delphacidae	Nesosydne rubescens pele	Kirkaldy 1910	Acacia koa
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AUCHENORRYNCHA	Delphacidae	Nesosydne viridis	Muir 1922	Phyllostegia sp.
AUCHENORRYNCHA	Delphacidae	Nesosydne waikamoiensis	Muir 1919, 1921	Cyanea sp, Pipturus sp.
AUCHENORRYNCHA	Delphacidae	Nesothoe dodonaeae	Muir 1916, 1922	Alphitonia sp., Dodonea sp., Myrsine sp.
AUCHENORRYNCHA	Delphacidae	Nesothoe dryope	Kirkaldy 1910	Antidesma sp.
AUCHENORRYNCHA	Delphacidae	Nesothoe fletus	Kirkaldy 1908, 1910	Antidesma sp., Myrsine sp.

Delphacidae	Nesothoe gulicki	Muir 1916, 1917, 1919	Chamaesyce sp., Metrosideros polymorpha, Nestegis sp.
Delphacidae	Nesothoe haa	Muir 1921	Antidesma sp.
Delphacidae	Nesothoe pluvialis	Kirkaldy 1908, 1910	Antidesma sp.
Delphacidae	Nesothoe seminigrofrons	Muir 1922	Bidens sp.
Delphacidae	Nesothoe silvestris	Kirkaldy 1908	n.d.
Lygaeidae	Glyptonysius amicola	Ashlock 1966	Pipturus sp., Metrosideros polymorpha, Charpintiera sp., Cheirodendron sp.
Lygaeidae	Glyptonysius hylaeus	Kirkaldy 1910; Usinger 1942	Dubautia sp., Alyxia sp.
Lygaeidae	Metrarga nuda	White 1878; Usinger and Ashlock 1959	Freycinetia sp., Metrosideros polymorpha, Cibotium sp., Euphorbia sp.
Lygaeidae	Metrarga obscura	Blackburn 1888; Usinger and Ashlock 1959	Freycinetia sp., Cibotium sp., Tetraplasandra sp.
Lygaeidae	Neseis altemata	Usinger 1942	Pteroptropia sp.
Lygaeidae	Neseis ampliata	Usinger 1942	Rubus sp.
Lygaeidae	Neseis fasciata fasciata	Usinger 1942	Straussia sp., Coprosma sp., Myrsine sp.
Lygaeidae	Neseis fasciata hyalina	Usinger 1942	Straussia sp., Coprosma sp., Pelea sp.
Lygaeidae	Neseis haleakalae	Perkins 1912	n.d.
Lygaeidae	Neseis hiloensis approximatus	Usinger 1942	Pipturus sp., Sideroxyon sp.
	Delphacidae Delphacidae Delphacidae Delphacidae Lygaeidae	Delphacidae Nesothoe haa Delphacidae Nesothoe pluvialis Delphacidae Nesothoe seminigrofrons Delphacidae Nesothoe silvestris Lygaeidae Glyptonysius amicola Lygaeidae Glyptonysius hylaeus Lygaeidae Metrarga nuda Lygaeidae Neseis altemata Lygaeidae Neseis ampliata Lygaeidae Neseis fasciata fasciata Lygaeidae Neseis fasciata hyalina Lygaeidae Neseis haleakalae	Delphacidae Nesothoe haa Muir 1921 Delphacidae Nesothoe pluvialis Kirkaldy 1908, 1910 Delphacidae Nesothoe seminigrofrons Muir 1922 Delphacidae Nesothoe silvestris Kirkaldy 1908 Lygaeidae Glyptonysius amicola Ashlock 1966 Lygaeidae Glyptonysius hylaeus 1942 Lygaeidae Metrarga nuda Ashlock 1959 Lygaeidae Metrarga obscura Blackburn 1888; Usinger and Ashlock 1959 Lygaeidae Neseis altemata Usinger 1942 Lygaeidae Neseis fasciata fasciata Usinger 1942 Lygaeidae Neseis fasciata hyalina Usinger 1942 Lygaeidae Neseis fasciata hyalina Usinger 1942 Lygaeidae Neseis haleakalae Perkins 1912

HETEROPTERA	Lygaeidae	Neseis hiloensis intermedius	Usinger 1942	Pipturus sp.
HETEROPTERA	Lygaeidae	Neseis kirkaldyi	Usinger 1937, 1942	Broussasia sp.
HETEROPTERA	Lygaeidae	Neseis mauiensis	Blackburn 1888; Usinger 1942	Cheirodendron sp., Coprosma sp., Pelea sp., Rubus sp., Clermontia arborescens
HETEROPTERA	Lygaeidae	Neseis mauiensis pallidipennis	Usinger 1942	Cheirodendron sp., Coprosma sp., Pelea sp., Rubus sp., Clermontia arborescens
HETEROPTERA	Lygaeidae	Neseis neochinai	Ashlock 1983	Tetraplasandra meiandra, Cheirodendron trigynum
HETEROPTERA	Lygaeidae	Neseis nitida comitans	Perkins 1912; Zimmerman 1948	Pipturus sp.
HETEROPTERA	Lygaeidae	Neseis nitida impressicollis	Usinger 1942	Pipturus sp., Osmanthus sp., Cyrtandra sp., Dodonaea sp.
HETEROPTERA	Lygaeidae	Neseis nitida pipturi	Usinger 1942	Pipturus sp.
HETEROPTERA	Lygaeidae	Neseis nitidus nitidus	White 1881	Pipturus sp., Urera sp.
HETEROPTERA	Lygaeidae	Neseis pallassatus	Ashlock 1966	Trematolobellia macrostachys
HETEROPTERA	Lygaeidae	Neseis pallida	Usinger 1942	Cyanea aculeatiflora
HETEROPTERA	Lygaeidae	Neseis saundersianus	Kirkaldy 1902; Usinger 1942	Urera sp., Sapindus sp., Coprosma sp., Freycinetia sp., Claoxyon sp., Pisonia sp.
HETEROPTERA	Lygaeidae	Neseis whitei brachypterus	Usinger 1942	Astelia sp.
HETEROPTERA	Lygaeidae	Neseis whitei whitei	Blackburn 1888; Usinger 1942	n.d.

HETEROPTERA	Lygaeidae	Nesocryptias adamsoni	Usinger and Ashlock 1959	Osmanthus sp.
HETEROPTERA	Lygaeidae	Nesocryptias villosa	White 1878; Usinger and Ashlock 1959	Freycinetia sp., Byronia sp., Myoporum sp.
HETEROPTERA	Lygaeidae	Nysius blackburni	White 1881; Usinger 1942	Acacia koa, Dubautia sp.
HETEROPTERA	Lygaeidae	Nysius coenosulus	Usinger 1942, 1959	Leptecophylla sp., Osmanthus sp., Cheirodendron gaudichaudii, Dubautia sp., Argyroxiphium grayanum, Portulaca sp., Artemisia sp., Eragrostis sp., Sida sp.
HETEROPTERA	Lygaeidae	Nysius communis	Usinger 1942	Bidens sp., Argyroxiphium grayanum, Metrosideros polymorpha, Leptecophylla sp., Coprosma sp., Euphorbia, Lobelia gloria-montis, Scaevola sp., Cibotium menzeisii, Cheirodendron sp., Argyroxiphium virescens, Sadleria sp., Artemisia sp., Sophora sp.
HETEROPTERA	Lygaeidae	Nysius dallasi	White 1878; Usinger 1942	Portulaca sp.
HETEROPTERA	Lygaeidae	Nysius delectus	White 1878; Kirkadly 1910; Usinger 1942	Dubautia sp., Coprosma sp., Metrosideros polymorpha, Stachytarpheta sp., Phyllostegia sp., Pelea sp., Myrsine sp., Verbena bonariensis

HETEROPTERA	Lygaeidae	Nysius hardyi	Ashlock 1966	n.d.
HETEROPTERA	Lygaeidae	Nysius kinbergi	Usinger 1942, 1959	Leptecophylla sp., Sadleria sp., Erigeron sp., Heterotheca sp., Euphorbia weed, Dubautia sp., Erythrina sp., Myrsine sp., Clermontia sp., Argyroxiphium grayanum, Metrosideros polymorpha, Sophora sp., Scaevola sp., Pelea sp., Eragrostis leptophylla, Amaranthus sp., Myoporum sp., Acacia loa, Lythrum sp., Geranium sp., Dodonea sp.
HETEROPTERA	Lygaeidae	Nysius longicollis	Blackburn 1888; Usinger 1942	Eragrostis sp.
HETEROPTERA	Lygaeidae	Nysius mixtus	Usinger 1942	Leptecophylla sp.
HETEROPTERA	Lygaeidae	Nysius nemorivagus	White 1881; Usinger 1942	Clermontia, Lythrum, Sophora sp., Dubautia sp., Geranium
HETEROPTERA	Lygaeidae	Nysius terrestris	Usinger 1942	Portulaca sp., Argyroxiphium sp., Dubautia sp., Geranium sp., Leptecophylla sp., Wikstroemia sp., Hibiscus sp., Sophora sp., Sida sp.
HETEROPTERA	Lygaeidae	Oceanides bryani	Usinger 1942	Euphorbia sp., Psychotria hawaiiensis
HETEROPTERA	Lygaeidae	Oceanides montivagus	Kirkaldy 1910; Usinger 1942	Dodonaea, Metrosideros polymorpha, Sadleria, Dubautia sp., Pipturus sp.

HETEROPTERA	Lygaeidae	Oceanides myopori	Usinger 1942	Myoporum sp.
HETEROPTERA	Lygaeidae	Oceanides nimbatus	Kirkaldy 1910; Usinger 1942	Gouldia sp., Broussaisia sp., Coprosma sp., Vaccinium sp.
HETEROPTERA	Lygaeidae	Oceanides nubicola	Kirkaldy 1910; Usinger 1942	Myoporum sandwicense
HETEROPTERA	Lygaeidae	Oceanides oresitrophus	Kirkaldy 1910; Usinger 1942	n.d.
HETEROPTERA	Lygaeidae	Oceanides planicollis	Usinger 1942	Euphorbia sp.
HETEROPTERA	Lygaeidae	Oceanides pteridicola	White 1881; Usinger 1942	Metrosideros polymorpha
HETEROPTERA	Lygaeidae	Oceanides rugosiceps	Usinger 1942	Pterotropia sp.
HETEROPTERA	Lygaeidae	Oceanides ventralis	Usinger 1942	Wikstroemia sp.
HETEROPTERA	Lygaeidae	Oceanides vulcan	White 1881; Usinger, 1942	Metrosideros polymorpha, Acacia koa
HETEROPTERA	Lygaeidae	Sephora criniger	White 1881; Swezey 1954	Straussia sp., Scaevola sp.,
HETEROPTERA	Miridae	Engytatus lysimachiae	Carvalho and Usinger 1960	Lysimachia sp.
HETEROPTERA	Miridae	Engytatus sidae	Gagne 1968	Sida sp.
HETEROPTERA	Miridae	Nesiomiris byroniae	Gagne 1997	Ilex anomala
HETEROPTERA	Miridae	Nesiomiris cheliferus	Gagne 1997	Cheirodendron trigynum
HETEROPTERA	Miridae	Nesiomiris curvatus	Gagne 1997	Tetraplasandra meiandra, Tetraplasandra meiandra ovalis

HETEROPTERA	Miridae	Nesiomiris ehu	Gagne 1997	Cheirodendron helleri multiflorum, Cheirodendron cauaiense kauaiense
				Munroidendron racemosum,
HETEROPTERA	Miridae	Nesiomiris elongatus	Gagne 1997	Tetraplasandra kavaiensis
HETEROPTERA	Miridae	Nesiomiris hawaiiensis	Gagne 1997	Ilex anomala
HETEROPTERA	Miridae	Nesiomiris kawau	Gagne 1997	Ilex anomala
HETEROPTERA	Miridae	Nesiomiris kraussi	Gagne 1997	Cheirodendron trigynum
HETEROPTERA	Miridae	Nesiomiris legnotus	Gagne 1997	Cheirodendron helleri multiflorum
METER OPTER A	26:1		G 1005	Pterotropia sp., Tetraplasandra
HETEROPTERA	Miridae	Nesiomiris maculatus	Gagne 1997	kavaiensis koloana
HETEROPTERA	Miridae	Nesiomiris mahu	Gagne 1997	Cheirodendron helleri multiflorum
				Cheirodendron trigynum,
				Tetraplasandra meiandra
				tenuistyloides, Tetraplasandra
HETEROPTERA	Miridae	Nesiomiris pilosus	Gagne 1997	kavaiensis grandis
HETEROPTERA	Miridae	Nesiomiris rufonotus	Gagne 1997	Cheirodendron trigynum
				Cheirodendron trigynum
				confertiflorum, Astelia veratroides,
HETEROPTERA	Miridae	Nesiomiris swezeyi	Gagne 1997	Tetraplasandra meiandra polystigmata
HETEROPTERA	Miridae	Nesiomiris tetraplasandrae	Gagne 1997	Tetraplasandra waimeae

HETEROPTERA	Miridae	Nesiomiris timberlakei	Gagne 1997	Cheirodendron trigynum, Cheirodendron trigynum trigynum, Cheirodendron trigynum halawanum, Reynoldsia sandwicensis, Tetraplasandra gymnocarpa, Tetraplasandra hawaiiensis, Tetraplasandra hawaiiensis var. microcarpa,Tetraplasandra turbans
HETEROPTERA	Miridae	Nesiomiris waimeae	Gagne 1997	Tetraplasandra waimeae waimeae
HETEROPTERA	Miridae	Nesiomiris williamsi	Gagne 1997	Cheirodendron trigynum, Cheirodendron trigynum trigynum, Cheirodendron trigynum acuminatum
HETEROPTERA	Miridae	Opuna sharpianus	Zimmerman 1948; Swezey 1954; Schuh 1984	Acacia koa, Euphorbia sp.
HETEROPTERA	Miridae	Opuna sharpianus luteus	Zimmerman 1948; Swezey 1954; Schuh 1984	Acacia koa, Euphorbia sp.
HETEROPTERA	Miridae	Orthotylus antidesmae	Polhemus 2004	Antidesma platyphyllum
HETEROPTERA	Miridae	Orthotylus broussaisiae	Polhemus 2013	Broussaisia arguta
HETEROPTERA	Miridae	Orthotylus clermontioides	Polhemus 2004	Clermontia arborescens, Clermontia micrantha, Clermontia kakeana
HETEROPTERA	Miridae	Orthotylus clermontiopsis	Polhemus 2011	Clermontia faurieri

HETEROPTERA	Miridae	Orthotylus coprosmae	Polhemus 2003, 2004	Coprosma foliosa, Coprosma pubens foliosa
HETEROPTERA	Miridae	Orthotylus coprosmaphagus	Polhemus 2011	Coprosma waimea, Coprosma kauaiensis waimeae
HETEROPTERA	Miridae	Orthotylus dubautiae	Polhemus 2011	Dubautia raillardiodes
HETEROPTERA	Miridae	Orthotylus elaeocarpi	Polhemus 2011	Elaeocarpus bifidus
HETEROPTERA	Miridae	Orthotylus hedyotioides	Polhemus 2004	Hedyotis terminalis
HETEROPTERA	Miridae	Orthotylus hedyotiphila	Polhemus 2004	Hedyotis hillebrandii
HETEROPTERA	Miridae	Orthotylus hedyotiphila	Polhemus 2004	Hedyotis hillebrandii
HETEROPTERA	Miridae	Orthotylus iolani	Kirkaldy 1902; Polhemus 2004	Clermontia clermontioides
HETEROPTERA	Miridae	Orthotylus kanakanus	Kirkaldy 1902; Polhemus 2004	Coprosma rhynchocarpa, Coprosma ochracea
HETEROPTERA	Miridae	Orthotylus kopiko	Polhemus 2004	Psychotria mariniana
HETEROPTERA	Miridae	Orthotylus kopikocola	Polhemus 2011	Psychotria hexandra
HETEROPTERA	Miridae	Orthotylus kopikovorus	Polhemus 2011	Psychotria mauiensis
HETEROPTERA	Miridae	Orthotylus manonophila	Polhemus 2011	Hedyotis terminalis
HETEROPTERA	Miridae	Orthotylus metrosideri	Polhemus 2004	Metrosideros polymorpha
HETEROPTERA	Miridae	Orthotylus neoilicis	Polhemus 2003 2004	Ilex anomala
HETEROPTERA	Miridae	Orthotylus neopsychotrioides	Polhemus 2004	Psychotria mariniana
HETEROPTERA	Miridae	Orthotylus perkinsi	Kirkaldy 1902; Polhemus	Ilex anomala

			2004	
HETEROPTERA	Miridae	Orthotylus perrottetiae	Polhemus 2004	Perrottetia sandwicensis
HETEROPTERA	Miridae	Orthotylus perrottetiopsis	Polhemus 2004	Perrottetia sandwicensis
HETEROPTERA	Miridae	Orthotylus pipturicola	Polhemus 2011	Pipturus albidus
HETEROPTERA	Miridae	Orthotylus Pisonia sp.cola	Polhemus 2011	Pisonia sandwicensis
HETEROPTERA	Miridae	Orthotylus pisoniopsis	Polhemus 2004	Pisonia brunoniana
HETEROPTERA	Miridae	Orthotylus psychotriae	Polhemus 2003, 2004	Psychotria hawaiiensis
HETEROPTERA	Miridae	Orthotylus psychotrioides	Polhemus 2003, 2004	Psychotria hawaiiensis
HETEROPTERA	Miridae	Orthotylus Urera sp.phila	Polhemus 2004	Urera glabra
HETEROPTERA	Miridae	Orthotylus xylosmicola	Polhemus 2004	Xylosma hawaiiense
HETEROPTERA	Miridae	Orthotylus xylosmoides	Polhemus 2004	Xylosma hawaiiense
HETEROPTERA	Miridae	Sarona adonias	Kirkaldy 1902; Asquith 1994	Metrosideros polymorpha
HETEROPTERA	Miridae	Sarona akoko	Asquith 1994	Chamaesyce sandwicense
HETEROPTERA	Miridae	Sarona annae	Asquith 1994	Zanthoxylum sp.
HETEROPTERA	Miridae	Sarona dakine	Asquith 1994	Melicope sp.
HETEROPTERA	Miridae	Sarona flavidorsum	Asquith 1994	Korthalsells sp.
HETEROPTERA	Miridae	Sarona hamakua	Asquith 1994	Myrsine sp., Broussasia arguta
HETEROPTERA	Miridae	Sarona hiiaka	Asquith 1994	Melicope clusiifolia
HETEROPTERA	Miridae	Sarona iki	Asquith 1994	n.d.

Miridae	Sarona kanaka	Asquith 1994	Cheirodendron sp.
Miridae	Sarona kane	Asquith 1994	Myrsine sp.
Miridae	Sarona kukona	Asquith 1994	Melicope barbigera
Miridae	Sarona laka	Asquith 1994	Claoxylon sandwicense
Miridae	Sarona makua	Asquith 1994	n.d.
Miridae	Sarona mamaki	Asquith 1994	Pipturus sp.
Miridae	Sarona maui	Asquith 1994	Pipturus sp.
Miridae	Sarona mokihana	Asquith 1994	Melicope anisata
Miridae	Sarona myoporicola	Asquith 1994	Myoporum sandwicense
Miridae	Sarona pusilla	Asquith 1994	Pipturus sp.
Miridae	Sarona saltator	Asquith 1994	Melicope clusiifolia
Miridae	Sulamita dryas	Kirkaldy 1902, 1908; Zimmerman 1948	n.d.
Miridae	Sulamita lunalilo	Kirkaldy 1902; Zimmerman 1948	Freycinetia sp., Xanthoylum sp.
Miridae	Sulamita oreias	Kirkaldy 1908; Zimmerman 1948	n.d.
Rhopalidae	Ithamar annectans	Van Duzee 1936	Euphorbia sp.
Pseudococcidae	Chlorococcus longipes	Beardsley 1971	Myrsine?
Pseudococcidae	Chlorococcus sparsus	Beardsley 1971	Clermontia
Pseudococcidae	Chlorococcus straussiae	Ehrhorn 1916	Psychotria, Kadua, Bobea
	Miridae Pseudococcidae Pseudococcidae	Miridae Sarona kane Miridae Sarona kukona Miridae Sarona laka Miridae Sarona makua Miridae Sarona mamaki Miridae Sarona maui Miridae Sarona mokihana Miridae Sarona myoporicola Miridae Sarona pusilla Miridae Sarona saltator Miridae Sulamita dryas Miridae Sulamita lunalilo Miridae Sulamita oreias Rhopalidae Ithamar annectans Pseudococcidae Chlorococcus sparsus	Miridae Sarona kane Asquith 1994 Miridae Sarona kukona Asquith 1994 Miridae Sarona makua Asquith 1994 Miridae Sarona makua Asquith 1994 Miridae Sarona mamaki Asquith 1994 Miridae Sarona maui Asquith 1994 Miridae Sarona mokihana Asquith 1994 Miridae Sarona myoporicola Asquith 1994 Miridae Sarona pusilla Asquith 1994 Miridae Sarona saltator Asquith 1994 Miridae Sarona saltator Asquith 1994 Miridae Sulamita dryas Kirkaldy 1902, 1908; Zimmerman 1948 Miridae Sulamita lunalilo Kirkaldy 1902; Zimmerman 1948 Miridae Sulamita oreias Van Duzee 1936 Pseudococcidae Chlorococcus longipes Beardsley 1971 Pseudococcidae Chlorococcus sparsus Beardsley 1971

STERNORRYNCHA	Pseudococcidae	Gallulacoccus tenorioi	Beardsley 1971	Metrosideros polymorpha
STERNORRYNCHA	Pseudococcidae	Geococcus coffeae	Green 1933	various plants incl. Acacia koa
STERNORRYNCHA	Pseudococcidae	Nesococcus pipturi	Ehrhorn 1916	Pipturus
STERNORRYNCHA	Pseudococcidae	Nesopedronia cibotii	Beardsley 1957	Cibotium
STERNORRYNCHA	Pseudococcidae	Nesopedronia crypta	Beardsley 1957	Dicranopteris
STERNORRYNCHA	Pseudococcidae	Nesopedronia hawaiiensis	Ferris 1948	Dicranopteris
STERNORRYNCHA	Pseudococcidae	Ohiacoccus cryptus	Beardsley 1971	Metrosideros polymorpha
STERNORRYNCHA	Pseudococcidae	Pseudococcus antricolens	Ferris 1948	Santalum
STERNORRYNCHA	Pseudococcidae	Pseudococcus floriger	Ferris 1948	Dracaena
STERNORRYNCHA	Pseudococcidae	Pseudococcus lycopodii	Beardsley 1959	Lycopodium
STERNORRYNCHA	Pseudococcidae	Pseudococcus mendiculus	Ferris 1948	Myrsine
STERNORRYNCHA	Pseudococcidae	Pseudococcus montanus	Ehrhorn 1916	Freycinetia
STERNORRYNCHA	Pseudococcidae	Pseudococcus swezeyi	Ehrhorn 1916	Acacia koa
STERNORRYNCHA	Pseudococcidae	Pseudotrionymus refertus	Ferris 1948	Syzygium sandwicensis
STERNORRYNCHA	Pseudococcidae	Rhizoecus hawaiiensis	Hambleton 1946	various plants incl. Peperomia, Bidens, Sinchus, Chenopodium, Portulaca
STERNORRYNCHA	Pseudococcidae	Tympanococcus tympanistus	Ferris 1948	Metrosideros polymorpha
STERNORRYNCHA	Psyllidae	Cerotrioza bivittata	Crawford 1918	Xylosma hawaiiensis
STERNORRYNCHA	Psyllidae	Hemischizocranium aloha	Caldwell 1940	Zanthoxylum dipetalum

STERNORRYNCHA	Psyllidae	Hemischizocranium bessi	Tuthill 1956	Zanthoxylum dipetalum
STERNORRYNCHA	Psyllidae	Hevaheva giffardi	Crawford 1918	Melicope
STERNORRYNCHA	Psyllidae	Hevaheva hyalina	Crawford 1918	Melicope
STERNORRYNCHA	Psyllidae	Hevaheva maculata	Caldwell 1940	Melicope
STERNORRYNCHA	Psyllidae	Hevaheva minuta	Crawford 1925	Melicope
STERNORRYNCHA	Psyllidae	Hevaheva perkinsi	Kirkaldy 1902	Melicope
STERNORRYNCHA	Psyllidae	Hevaheva silvestris	Kirkaldy 1908	Melicope
STERNORRYNCHA	Psyllidae	Hevaheva swezeyi	Crawford 1928	Melicope
STERNORRYNCHA	Psyllidae	Kuwayama gracilis	Crawford 1918	Metrosideros polymorpha
STERNORRYNCHA	Psyllidae	Kuwayama lanaiensis	Uchida and Beardsley 1992	Metrosideros polymorpha
STERNORRYNCHA	Psyllidae	Kuwayama minuta	Crawford 1918	Metrosideros polymorpha
STERNORRYNCHA	Psyllidae	Kuwayama nigricapita	Crawford 1918	Metrosideros polymorpha
STERNORRYNCHA	Psyllidae	Swezeyana elongagena	Caldwell 1940	Pouteria sandwicensis
STERNORRYNCHA	Psyllidae	Swezeyana reticulata	Caldwell 1940	Pouteria sandwicensis
STERNORRYNCHA	Psyllidae	Trioza hawaiiensis	Crawford 1918	Metrosideros polymorpha
STERNORRYNCHA	Psyllidae	Trioza kauaiensis	Crawford 1925	Metrosideros polymorpha
STERNORRYNCHA	Psyllidae	Trioza lehua	Crawford 1925	Metrosideros polymorpha
STERNORRYNCHA	Psyllidae	Trioza palmicola	Crawford 1918	Metrosideros polymorpha
STERNORRYNCHA	Psyllidae	Trioza uniqua	Caldwell 1940	Cryptocarya mannii

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