

Supporting information

Table S1. Voucher information and GenBank accession numbers of reference COI sequences.

Table S2. The Shannon index and Simpson index of Eriosomatinae bacterial community.

Table S3. The relative abundance of top ten bacterial genera in Eriosomatinae.

Table S4. OTUs and reads number of facultative symbionts.

Table S5. Infection pattern of facultative symbionts in Eriosomatinae.

Table S6. Spearman correlation coefficients of symbionts in Eriosomatinae.

Figure S1. Rarefaction curve for each sample of Eriosomatinae based on the index of observed species.

Table S1. Voucher information and GenBank accession numbers of reference COI sequences.

Species	Voucher number	Collection date	Host plant	Location	Longitude	Latitude	COI
Eriosomatinae Eriosomatini							
<i>Colophina arctica</i>	23540	1 Aug. 2005	Unknown	Beijing, China	40.47	116.99	JQ916891
<i>Eriosoma lanigerum</i>	15412	21 Aug. 2003	<i>Malus domestica</i> (Rosaceae)	Tibet, China	29.64	94.36	JQ916894
<i>Eriosoma</i> sp. 1	22383	22 Jun. 2009	<i>Ulmus pumila</i> (Ulmaceae)	Ulan Bator, Mongolia	47.00	107.00	JX536311
<i>Eriosoma</i> sp. 2	22920	24 May 2009	<i>Ulmus pumila</i> (Ulmaceae)	Gansu, China	35.88	104.16	JX536312
<i>Eriosoma</i> sp. 3	23044	2 Jun. 2009	<i>Ulmus pumila</i> (Ulmaceae)	Gansu, China	34.36	106.00	JX536316
<i>Eriosoma</i> sp. 4	23142	10 Jun. 2009	<i>Ulmus</i> sp. (Ulmaceae)	Sichuan, China	28.76	103.18	JX536318
<i>Tetraneura</i> sp. 1	22389	22 Jun. 2009	<i>Ulmus pumila</i> (Ulmaceae)	Ulan Bator, Mongolia	47.00	107.00	JQ916865
<i>Tetraneura</i> sp. 2	22400	4 Jul. 2009	<i>Ulmus pumila</i> (Ulmaceae)	Beijing, China	39.85	116.39	JQ916866
<i>Tetraneura</i> sp. 3	22926	24 May 2009	<i>Ulmus pumila</i> (Ulmaceae)	Gansu, China	35.88	104.16	JQ916872
<i>Tetraneura</i> sp. 4	23047	2 Jun. 2009	<i>Ulmus pumila</i> (Ulmaceae)	Gansu, China	34.36	106.00	JQ916881
<i>Tetraneura</i> sp. 5	23081	3 Jun. 2009	<i>Ulmus</i> sp. (Ulmaceae)	Gansu, China	34.43	105.96	JQ916885
Eriosomatinae Fordini							
<i>Chaetogeoica</i> sp.	15300	14 Jul. 2004	<i>Pistacia chinensis</i> (Anacardiaceae)	Shaanxi, China	34.50	107.83	JX536320
<i>Kaburagia rhusicola</i>	15699	26 Jun. 2004	<i>Rhus</i> sp. (Anacardiaceae)	Shaanxi, China	32.99	107.76	JQ916893
<i>Schlechtendalia chinensis</i>	15703	2 Sep. 2004	<i>Rhus chinensis</i> (Anacardiaceae)	Sichuan, China	29.52	103.33	JQ916860
Eriosomatinae Pemphigini							
<i>Epipemphigus imaicus</i>	25471	27 Jul. 2009	<i>Populus yunnanensis</i> (Salicaceae)	Yunnan, China	27.85	99.74	JQ916892
<i>Epipemphigus niisimae</i>	13509	1 Jul. 2002	<i>Populus</i> sp. (Salicaceae)	Tibet, China	29.81	93.84	KC710380
<i>Epipemphigus yunnanensis</i>	18234	27 Apr. 2006	<i>Populus yunnanensis</i> (Salicaceae)	Yunnan, China	26.83	100.27	JX627585
<i>Formosaphis micheliae</i>	18074	22 Oct. 2005	<i>Michelia maudiae</i> (Magnoliaceae)	Fujian, China	27.07	117.06	JQ916862
<i>Pemphigus borealis</i>	25483	29 Jul. 2010	<i>Populus yunnanensis</i> (Salicaceae)	Yunnan, China	27.01	100.26	JX536301
<i>Pemphigus bursarius</i>	17573	21 Jul. 2005	<i>Populus</i> sp. (Salicaceae)	Jilin, China	43.70	128.70	KC710390
<i>Pemphigus matsumurai</i>	23129	9 Jun. 2009	<i>Populus davidiana</i> (Salicaceae)	Sichuan, China	28.28	102.98	JQ916888
<i>Pemphigus populitransversus</i>	14166	13 Jun. 2001	<i>Populus</i> sp. (Salicaceae)	Illinois, USA	38.00	-89.15	KC710383
<i>Pemphigus sinobursarius</i>	22964	25 May 2009	<i>Populus cathayana</i> (Salicaceae)	Gansu, China	34.41	104.63	KC710395
<i>Pemphigus</i> sp. 1	14139	1 Jun. 2001	<i>Populus</i> sp. (Salicaceae)	Illinois, USA	40.00	-89.00	KF311113
<i>Pemphigus</i> sp. 2	14167	13 Jun. 2001	<i>Populus</i> sp. (Salicaceae)	Illinois, USA	38.00	-89.15	KF311114
<i>Pemphigus tibetensis</i>	15429	23 Aug. 2003	<i>Populus</i> sp. (Salicaceae)	Tibet, China	29.66	91.17	JQ916896
<i>Prociphilus kuwanai</i>	24365	9 May 2010	<i>Pyrus betulifolia</i> (Rosaceae)	Henan, China	32.76	113.50	JX536291
<i>Prociphilus ligustrifoliae</i>	22989	28 May 2009	<i>Ligustrum lucidum</i> (Oleaceae)	Gansu, China	33.55	104.84	JQ916876

<i>Prociphilus pini</i>	16169	13 May 2005	<i>Crataegus</i> sp. (Rosaceae)	Beijing, China	40.54	116.81	JQ916861
<i>Prociphilus</i> sp.	Y8936	3 Jul. 2010	<i>Fraxinus chinensis</i> (Oleaceae)	Hebei, China	38.68	116.08	JX536290
<i>Thecabius beijingensis</i>	15739	31 Jul. 2004	<i>Populus davidiana</i> (Salicaceae)	Heilongjiang, China	53.48	122.36	JX536307
<i>Thecabius</i> sp. 1	22912	23 May 2009	<i>Populus cathayana</i> (Salicaceae)	Gansu, China	35.82	104.08	JX536304
<i>Thecabius</i> sp. 2	22942	25 May 2009	<i>Populus cathayana</i> (Salicaceae)	Gansu, China	34.54	104.07	JX536305
<i>Thecabius</i> sp. 3	22956	25 May 2009	<i>Populus cathayana</i> (Salicaceae)	Gansu, China	34.54	104.07	JX536306

Table S2. The Shannon index and Simpson index of Eriosomatinae bacterial community.

Species	Shannon	Simpson
<i>Chaetogeoica</i> sp.	0.22	0.06
<i>Colophina arctica</i>	0.54	0.26
<i>Epipemphigus imaicus</i>	0.12	0.03
<i>Epipemphigus niisimae</i>	0.13	0.04
<i>Epipemphigus yunnanensis</i>	0.19	0.06
<i>Eriosoma lanigerum</i>	0.39	0.13
<i>Eriosoma</i> sp. 1	0.27	0.08
<i>Eriosoma</i> sp. 2	0.44	0.19
<i>Eriosoma</i> sp. 3	0.56	0.27
<i>Eriosoma</i> sp. 4	0.31	0.14
<i>Formosaphis micheliae</i>	0.32	0.14
<i>Kaburagia rhusicola</i>	0.10	0.03
<i>Pemphigus borealis</i>	0.21	0.07
<i>Pemphigus bursarius</i>	0.20	0.06
<i>Pemphigus matsumurai</i>	0.11	0.03
<i>Pemphigus populitransversus</i>	0.10	0.03
<i>Pemphigus sinobursarius</i>	0.14	0.04
<i>Pemphigus</i> sp. 1	0.28	0.13
<i>Pemphigus</i> sp. 2	0.12	0.03
<i>Pemphigus tibetensis</i>	0.42	0.21
<i>Prociphilus kuwanai</i>	0.75	0.33
<i>Prociphilus ligustrifoliae</i>	0.52	0.25
<i>Prociphilus pini</i>	0.78	0.45
<i>Prociphilus</i> sp.	0.21	0.06
<i>Schlechtendalia chinensis</i>	0.11	0.04
<i>Tetraneura</i> sp. 1	0.31	0.12
<i>Tetraneura</i> sp. 2	0.19	0.07
<i>Tetraneura</i> sp. 3	0.55	0.30
<i>Tetraneura</i> sp. 4	0.28	0.11
<i>Tetraneura</i> sp. 5	0.21	0.09
<i>Thecabius beijingensis</i>	0.16	0.05
<i>Thecabius</i> sp. 1	0.27	0.08
<i>Thecabius</i> sp. 2	0.23	0.08
<i>Thecabius</i> sp. 3	0.15	0.05
Mean	0.29	0.12

Table S3. The relative abundance of top ten bacterial genera in Eriosomatinae.

Species	<i>Buchnera</i>	<i>Regiella</i>	<i>Gluconobacter</i>	<i>Serratia</i>	<i>Pectobacterium</i>	<i>Acinetobacter</i>	<i>Carsonella</i>	<i>Hamiltonella</i>	<i>Sphingobacterium</i>	<i>Akkermansia</i>	Others
<i>Chaetogeomys sp.</i>	0.969234	0.012602	2.43×10 ⁻⁵	0.000162	0.00198	0.001043	0	0	8.08×10 ⁻⁶	6.47×10 ⁻⁵	0.001859
<i>Colophina arctica</i>	0.853049	0.032229	2.43×10 ⁻⁵	0.002829	2.43×10 ⁻⁵	1.62×10 ⁻⁵	0	0	0	0	0.107212
<i>Epipemphigus imaicus</i>	0.984512	0.00519	0.001407	8.08×10 ⁻⁵	0.000437	0.001237	0	0	1.62×10 ⁻⁵	0	0.001681
<i>Epipemphigus niisimae</i>	0.97853	0.001213	0.0027	1.62×10 ⁻⁵	0.00114	0.001552	0.000137	0	2.43×10 ⁻⁵	0	0.013378
<i>Epipemphigus yunnanensis</i>	0.968353	0.012416	0	0.006321	0.00308	4.04×10 ⁻⁵	0.000267	0.000364	0	0	0.007736
<i>Eriosoma lanigerum</i>	0.929705	0.014073	3.23×10 ⁻⁵	8.89×10 ⁻⁵	0.033813	0.000162	0	0	0	0	0.002999
<i>Eriosoma sp. 1</i>	0.956996	0.021413	8.08×10 ⁻⁶	0.000703	0.001948	0.000954	0.000194	0.00038	8.08×10 ⁻⁶	0	0.006572
<i>Eriosoma sp. 2</i>	0.895666	0.074619	0	0.017848	0.001997	8.89×10 ⁻⁵	0.000226	0.000396	0	1.62×10 ⁻⁵	0.006903
<i>Eriosoma sp. 3</i>	0.845531	0.132118	2.43×10 ⁻⁵	0.001892	1.62×10 ⁻⁵	0.001843	0	0	0.000154	8.08×10 ⁻⁶	0.003864
<i>Eriosoma sp. 4</i>	0.927297	0.061872	1.62×10 ⁻⁵	0.004155	1.62×10 ⁻⁵	4.04×10 ⁻⁵	0	0	0	0	0.002999
<i>Formosaphis micheliae</i>	0.926197	0.005594	8.08×10 ⁻⁶	0.000485	0.060174	1.62×10 ⁻⁵	0.000137	0.000348	8.08×10 ⁻⁶	0	0.006378
<i>Kaburagia rhusicola</i>	0.984496	0.001706	8.08×10 ⁻⁶	2.43×10 ⁻⁵	0.001495	6.47×10 ⁻⁵	0	0.001827	0	0	0.008973
<i>Pemphigus borealis</i>	0.965216	0.000251	0.001237	0.000137	0.005949	0.001277	0	0	0	8.08×10 ⁻⁶	0.019974
<i>Pemphigus bursarius</i>	0.966857	0.017412	0	0.000445	0.003339	0	0.000186	0.000461	0.000614	8.08×10 ⁻⁶	0.005796
<i>Pemphigus matsumurai</i>	0.985999	0.004923	3.23×10 ⁻⁵	0.001463	8.08×10 ⁻⁶	0.000113	0	0.001843	0	8.08×10 ⁻⁶	0.002409
<i>Pemphigus populitransversus</i>	0.98507	0.001706	8.08×10 ⁻⁶	3.23×10 ⁻⁵	0.007089	8.89×10 ⁻⁵	0	0	0	0	0.004486
<i>Pemphigus sinobursarius</i>	0.980114	0.005085	8.08×10 ⁻⁶	0.002255	0.006629	6.47×10 ⁻⁵	0	0	8.08×10 ⁻⁶	4.85×10 ⁻⁵	0.003492
<i>Pemphigus sp. 1</i>	0.928226	0.068007	8.08×10 ⁻⁶	8.08×10 ⁻⁶	0.001964	1.62×10 ⁻⁵	8.08×10 ⁻⁶	8.08×10 ⁻⁶	0	0	0.000687
<i>Pemphigus sp. 2</i>	0.983073	0.006224	1.62×10 ⁻⁵	0.00527	0.001989	0	0	0	0	0	0.001843
<i>Pemphigus tibetensis</i>	0.879943	0.00869	1.62×10 ⁻⁵	0	0.00114	4.85×10 ⁻⁵	0	0	0	0	0.108562
<i>Prociphilus kuwanai</i>	0.807862	0.000186	0.11376	0.000121	0.000226	0.037419	6.47×10 ⁻⁵	8.08×10 ⁻⁶	0.009288	0	0.019724
<i>Prociphilus ligustrifoliae</i>	0.861351	0.056068	0	0.076026	4.85×10 ⁻⁵	8.08×10 ⁻⁶	0	0	0	0	0.005561
<i>Prociphilus pini</i>	0.687231	0.005658	0.00291	0.000348	0.001892	0.001892	0.014122	0.000234	3.23×10 ⁻⁵	0	0.281599
<i>Prociphilus sp.</i>	0.970147	0.004551	0.002021	0.00582	0.00038	0.002077	0	0	8.08×10 ⁻⁶	0	0.007445
<i>Schlechtendalia chinensis</i>	0.981076	0.013685	1.62×10 ⁻⁵	0.002183	0.001722	4.85×10 ⁻⁵	8.08×10 ⁻⁶	0	0	0	0.000412
<i>Tetraneura sp. 1</i>	0.936609	0.043457	0	0.000647	0.007469	7.28×10 ⁻⁵	0.000154	0.000461	0	1.62×10 ⁻⁵	0.006426
<i>Tetraneura sp. 2</i>	0.966114	0.014219	0	0.000291	0.001293	8.08×10 ⁻⁶	0.000218	0.000372	1.62×10 ⁻⁵	8.08×10 ⁻⁶	0.016507
<i>Tetraneura sp. 3</i>	0.823552	0.15581	1.62×10 ⁻⁵	0.000509	0.001997	8.08×10 ⁻⁶	0.000283	0.000469	0	8.08×10 ⁻⁶	0.016604
<i>Tetraneura sp. 4</i>	0.942841	0.042705	8.08×10 ⁻⁶	0.002692	0.00557	0.00017	0	0	0	8.08×10 ⁻⁶	0.003436
<i>Tetraneura sp. 5</i>	0.954708	0.037985	8.08×10 ⁻⁶	0.001673	0	5.66×10 ⁻⁵	0	8.08×10 ⁻⁶	0	0	0.0046
<i>Thecabius beijingsensis</i>	0.97448	0.013209	0.000501	2.43×10 ⁻⁵	0.001665	5.66×10 ⁻⁵	0	0	0	0	0.007526

<i>Thecabius</i> sp. 1	0.957529	0.005351	0	0.000437	0.001722	5.66×10 ⁻⁵	0.000154	0.012441	0	0.00675	0.007057
<i>Thecabius</i> sp. 2	0.958305	0.006103	0.003533	0.001997	3.23×10 ⁻⁵	0.001827	0.000291	8.08×10 ⁻⁶	4.85×10 ⁻⁵	0	0.024695
<i>Thecabius</i> sp. 3	0.974537	0.017566	0	0.002344	0.000291	0.000194	0	8.08×10 ⁻⁶	1.62×10 ⁻⁵	0	0.002967

Table S4. OTUs and reads number of facultative symbionts.

Sample	<i>Arsenophonus</i>	<i>Hamiltonella</i>	<i>Regiella</i>				<i>Rickettsia</i>	<i>Serratia</i>		<i>Spiroplasma</i>	
OTU_name	OTU_58	OTU_32	OTU_19	OTU_25	OTU_42	OTU_701	OTU_993	OTU_733	OTU_33	OTU_22	OTU_162
13509a	0	0	95	0	0	0	0	0	0	1	0
13509b	0	0	59	0	0	0	0	0	0	0	0
13509c	0	0	66	0	0	0	0	0	0	0	0
14139a	0	0	3930	1	3	5	0	0	0	0	0
14139b	0	1	4928	1	5	3	0	0	0	1	0
14139c	0	0	3939	0	4	0	0	0	0	0	0
14166a	0	0	113	0	0	0	0	0	0	0	15
14166b	0	0	95	1	0	0	0	0	0	1	2
14166c	0	0	73	0	0	0	0	0	0	0	8
14167a	0	0	378	1	1	4	0	0	0	273	0
14167b	0	0	455	0	0	6	0	2	0	375	0
14167c	0	0	326	0	0	6	0	0	0	339	1
15300a	0	0	503	1	2	0	0	0	0	0	0
15300b	0	0	654	1	0	0	0	0	0	0	0
15300c	0	0	485	0	0	0	0	0	1	0	0
15412a	30	0	801	0	1	3	0	0	0	0	0
15412b	12	0	795	1	0	1	0	0	0	1	0
15412c	9	0	741	0	2	0	1	0	0	1	0
15429a	0	0	565	0	0	4	0	0	0	0	1
15429b	0	0	461	0	0	3	0	0	0	0	0
15429c	0	0	494	1	0	2	1	0	0	0	0
15699a	0	131	99	0	0	0	0	0	0	1	0
15699b	0	95	104	1	1	0	0	0	0	0	0
15699c	0	69	64	0	0	0	0	0	0	1	1
15703a	0	0	568	294	76	0	0	0	149	0	0
15703b	0	0	413	163	50	0	0	0	96	0	0
15703c	0	0	364	150	43	0	0	0	97	0	2
15739a	0	0	731	0	0	1	4	0	0	0	0
15739b	0	0	859	1	0	0	1	0	0	1	0
15739c	0	0	764	0	1	0	3	1	0	0	0

16169a	9	32	388	73	0	0	3	0	43	0	0
16169b	1	9	127	24	0	0	0	0	8	0	0
16169c	2	7	311	59	1	0	0	0	17	0	0
17573a	12	40	968	109	3	0	4	0	53	0	0
17573b	2	18	812	30	0	0	1	0	5	2	0
17573c	9	27	1158	80	3	1	2	0	27	0	0
18074a	5	26	334	82	0	0	2	0	37	1	3
18074b	2	12	129	28	0	0	0	1	11	2	0
18074c	6	13	219	51	0	0	0	0	22	0	1
18234a	5	32	741	106	2	8	0	0	54	290	0
18234b	2	13	504	22	0	6	0	0	15	319	0
18234c	4	21	719	68	5	6	0	0	20	406	0
22383a	7	30	1243	91	4	0	0	0	43	1	1
22383b	3	15	897	20	0	0	0	0	15	2	0
22383c	1	24	1305	67	1	0	1	0	28	1	0
22389a	113	31	1943	77	8	0	3	0	47	0	0
22389b	161	16	1789	27	9	0	2	0	11	0	0
22389c	219	31	3478	86	11	0	1	0	31	3	0
22400a	5	29	986	78	0	3	3	0	32	0	0
22400b	1	14	500	18	0	1	2	0	9	1	0
22400c	2	20	949	50	1	0	3	0	22	0	2
22912a	7	546	326	94	2	0	1	0	35	0	0
22912b	2	745	144	23	0	0	0	0	10	0	0
22912c	3	788	251	61	0	0	0	0	20	0	0
22920a	2	39	1846	2533	116	4	2	1	984	0	75
22920b	1	10	1375	2476	29	2	0	0	1132	0	15
22920c	2	22	1732	2623	66	2	0	2	958	0	89
22926a	3	25	7372	96	5	1	33	0	42	0	1
22926b	3	24	7283	35	0	2	13	0	6	0	0
22926c	4	25	9927	65	9	1	25	0	39	1	0
22942a	0	1	458	1	14	5	1	0	0	135	0
22942b	0	0	230	0	4	4	0	0	0	90	0
22942c	0	0	351	0	6	0	0	0	0	117	0
22956a	0	0	993	0	18	8	0	0	0	129	0

22956b	0	1	1092	0	18	6	1	0	0	127	0
22956c	0	0	829	0	9	3	0	0	0	122	0
22964a	0	0	323	0	17	2	0	0	1	114	0
22964b	0	0	185	0	6	5	1	0	0	108	1
22964c	0	0	307	0	11	2	0	0	0	152	0
22989a	0	0	1870	0	20	64	0	0	1	2019	0
22989b	0	0	2142	0	11	84	0	0	0	3117	0
22989c	0	0	4259	0	16	97	0	0	1	6391	0
23044a	0	0	2962	1	16	5	0	0	0	77	0
23044b	0	0	3920	0	7	3	0	0	0	86	0
23044c	0	0	14439	1	10	1	0	0	0	119	0
23047a	24	0	2225	1	29	1	3	0	0	130	0
23047b	20	0	2637	0	28	6	3	0	0	167	0
23047c	6	0	2332	0	9	4	2	0	0	157	0
23081a	0	0	2171	0	18	13	3	0	0	88	0
23081b	0	1	1991	0	8	9	4	0	0	67	0
23081c	0	0	1913	0	2	8	2	0	0	112	0
23129a	0	149	355	0	15	5	2	0	0	90	0
23129b	0	103	201	0	11	0	1	0	0	74	0
23129c	0	80	254	0	11	0	0	0	0	81	0
23142a	0	0	2386	397	348	7	0	0	196	131	0
23142b	0	0	2314	287	363	6	0	1	131	107	0
23142c	0	0	3816	170	575	2	0	0	91	112	0
23540a	0	0	1590	0	31	5	8	0	2	155	0
23540b	0	0	1825	1	13	4	1	0	1	146	0
23540c	0	0	1830	0	12	6	6	0	2	154	0
24365a	0	0	16	0	1	0	0	0	0	0	0
24365b	0	0	12	0	0	0	0	0	1	0	0
24365c	0	1	8	0	0	0	0	0	0	0	0
25471a	0	0	323	0	1	0	0	0	1	0	0
25471b	0	0	316	0	1	1	0	0	0	0	0
25471c	0	0	280	0	0	0	0	0	1	1	0
25483a	0	0	15	0	2	0	0	0	1	0	1
25483b	0	0	13	1	0	0	0	0	0	2	0

25483c	0	0	12	0	0	0	0	0	0	0	0	0
Y8936a	0	0	252	0	1	5	0	0	0	0	258	0
Y8936b	0	0	256	0	0	2	1	0	0	0	350	0
Y8936c	0	0	241	0	0	6	0	0	0	0	333	0

Table S5. Infection pattern of facultative symbionts in Eriosomatinae.

Secondary symbiont infection type	Species	Infection frequency
<i>Regiella–Serratia</i>	<i>Chaetogeonica</i> sp.	7/34
<i>Regiella–Serratia</i>	<i>Colophina arctica</i>	
<i>Regiella–Serratia</i>	<i>Epipemphigus imaicus</i>	
<i>Regiella–Serratia</i>	<i>Epipemphigus niisimae</i>	
<i>Regiella–Serratia</i>	<i>Eriosoma</i> sp. 3	
<i>Regiella–Serratia</i>	<i>Prociphilus ligustrifoliae</i>	
<i>Regiella–Serratia</i>	<i>Prociphilus</i> sp.	
<i>Regiella–Spiroplasma</i>	<i>Pemphigus tibetensis</i>	1/34
<i>Arsenophonus–Regiella–Serratia</i>	<i>Eriosoma lanigerum</i>	2/34
<i>Arsenophonus–Regiella–Serratia</i>	<i>Tetraneura</i> sp. 4	
<i>Hamiltonella–Regiella–Serratia</i>	<i>Pemphigus matsumurai</i>	6/34
<i>Hamiltonella–Regiella–Serratia</i>	<i>Pemphigus</i> sp. 1	
<i>Hamiltonella–Regiella–Serratia</i>	<i>Thecabius</i> sp. 2	
<i>Hamiltonella–Regiella–Serratia</i>	<i>Thecabius</i> sp. 3	
<i>Hamiltonella–Regiella–Serratia</i>	<i>Tetraneura</i> sp. 5	
<i>Hamiltonella–Regiella–Serratia</i>	<i>Prociphilus kuwanai</i>	
<i>Regiella–Rickettsia–Serratia</i>	<i>Eriosoma</i> sp. 4	2/34
<i>Regiella–Rickettsia–Serratia</i>	<i>Thecabius beijingensis</i>	
<i>Regiella–Serratia–Spiroplasma</i>	<i>Pemphigus borealis</i>	4/34
<i>Regiella–Serratia–Spiroplasma</i>	<i>Pemphigus populitransversus</i>	
<i>Regiella–Serratia–Spiroplasma</i>	<i>Pemphigus sinobursarius</i>	
<i>Regiella–Serratia–Spiroplasma</i>	<i>Schlechtendalia chinensis</i>	
<i>Arsenophonus–Hamiltonella–Regiella–Serratia</i>	<i>Epipemphigus yunnanensis</i>	5/34
<i>Arsenophonus–Hamiltonella–Regiella–Serratia</i>	<i>Pemphigus bursarius</i>	
<i>Arsenophonus–Hamiltonella–Regiella–Serratia</i>	<i>Prociphilus pini</i>	
<i>Arsenophonus–Hamiltonella–Regiella–Serratia</i>	<i>Tetraneura</i> sp. 1	
<i>Arsenophonus–Hamiltonella–Regiella–Serratia</i>	<i>Thecabius</i> sp. 1	
<i>Hamiltonella–Regiella–Serratia–Spiroplasma</i>	<i>Kaburagia rhusicola</i>	1/34
<i>Regiella–Rickettsia–Serratia–Spiroplasma</i>	<i>Pemphigus</i> sp. 2	1/34
<i>Arsenophonus–Hamiltonella–Regiella–Serratia–Spiroplasma</i>	<i>Eriosoma</i> sp. 1	3/34
<i>Arsenophonus–Hamiltonella–Regiella–Serratia–Spiroplasma</i>	<i>Tetraneura</i> sp. 2	

Arsenophonus–Hamiltonella–Regiella–Serratia–Spiroplasma
Arsenophonus–Hamiltonella–Regiella–Rickettsia–Serratia–Spiroplasma
Arsenophonus–Hamiltonella–Regiella–Rickettsia–Serratia–Spiroplasma

Tetraneura sp. 3
Eriosoma sp. 2
Formosaphis micheliae

2/34

Table S6. Spearman correlation coefficients of symbionts in Eriosomatinae.

Symbionts	Symbionts	ρ	<i>p</i> value
<i>Arsenophonus</i>	<i>Buchnera</i>	-0.34	0.05
<i>Arsenophonus</i>	<i>Hamiltonella</i>	0.54	<0.001
<i>Arsenophonus</i>	<i>Regiellaa</i>	0.29	0.09
<i>Arsenophonus</i>	<i>Rickettsia</i>	0.02	0.91
<i>Arsenophonus</i>	<i>Serratia</i>	0.03	0.86
<i>Arsenophonus</i>	<i>Spiroplasma</i>	0.09	0.62
<i>Buchnera</i>	<i>Hamiltonella</i>	-0.11	0.54
<i>Buchnera</i>	<i>Regiella</i>	-0.51	0.002
<i>Buchnera</i>	<i>Rickettsia</i>	-0.06	0.75
<i>Buchnera</i>	<i>Serratia</i>	-0.07	0.70
<i>Buchnera</i>	<i>Spiroplasma</i>	0.05	0.76
<i>Hamiltonella</i>	<i>Regiella</i>	0.03	0.86
<i>Hamiltonella</i>	<i>Rickettsia</i>	-0.05	0.80
<i>Hamiltonella</i>	<i>Serratia</i>	-0.03	0.87
<i>Hamiltonella</i>	<i>Spiroplasma</i>	0.18	0.30
<i>Regiella</i>	<i>Rickettsia</i>	0.17	0.34
<i>Regiella</i>	<i>Serratia</i>	0.40	0.02
<i>Regiella</i>	<i>Spiroplasma</i>	-0.08	0.64
<i>Rickettsia</i>	<i>Serratia</i>	0.24	0.17
<i>Rickettsia</i>	<i>Spiroplasma</i>	0.17	0.34
<i>Serratia</i>	<i>Spiroplasma</i>	-0.09	0.62

Significant *p* values ($p < 0.05$) are in bold.

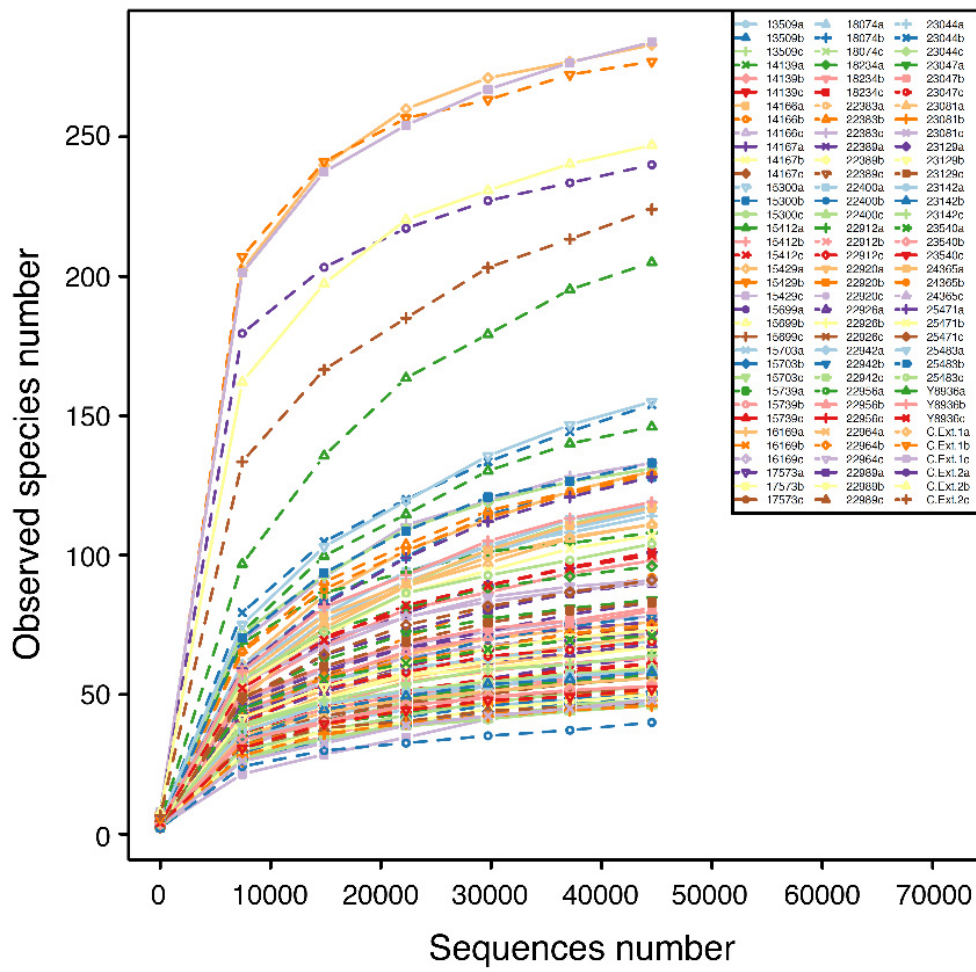


Figure S1. Rarefaction curve for each sample of Eriosomatinae based on the index of observed species.