

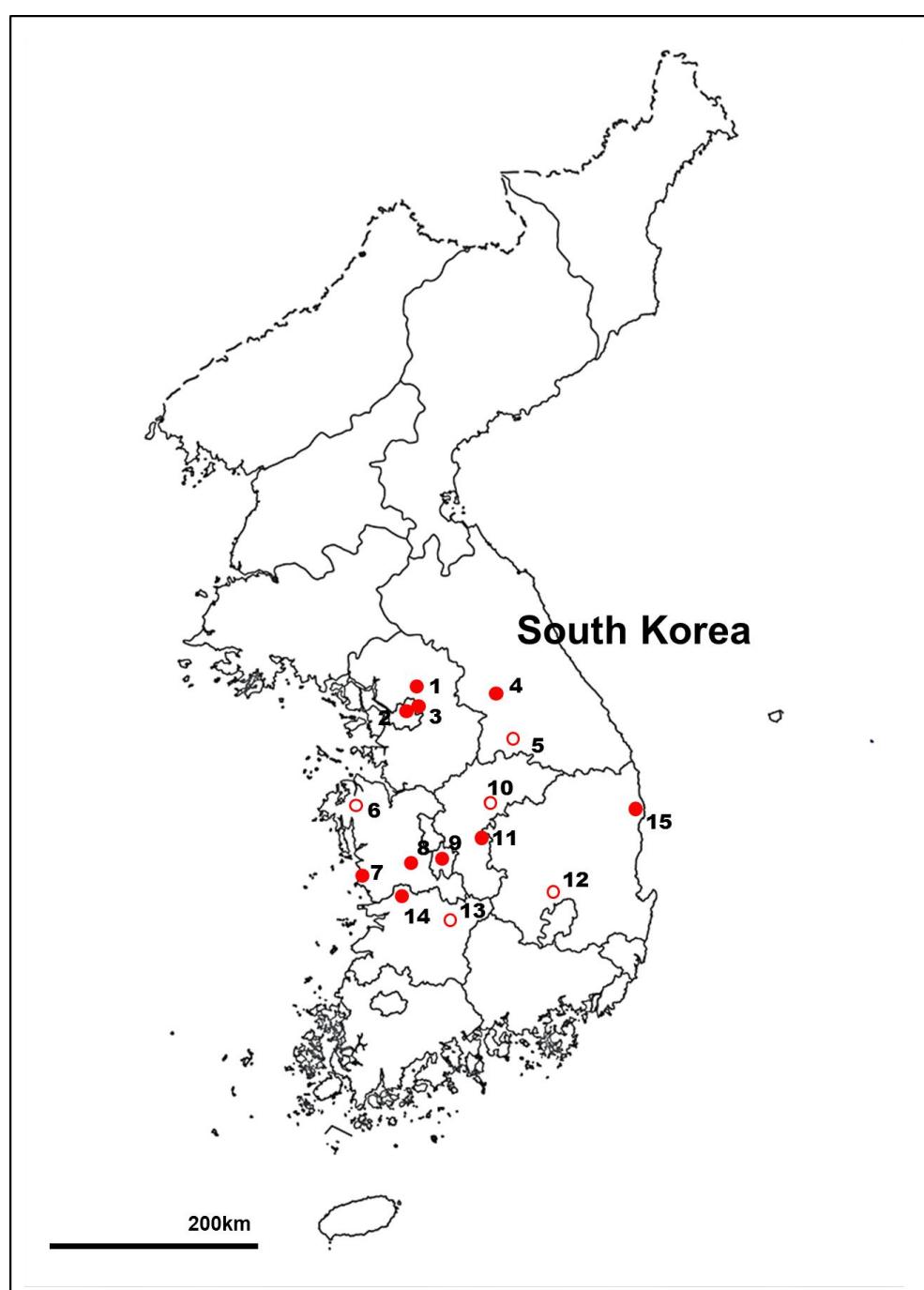
## Figures and Tables for Supplementary Material

### **Insects gut bacterial diversity determined by host environmental habitat, diet, developmental stage and phylogeny**

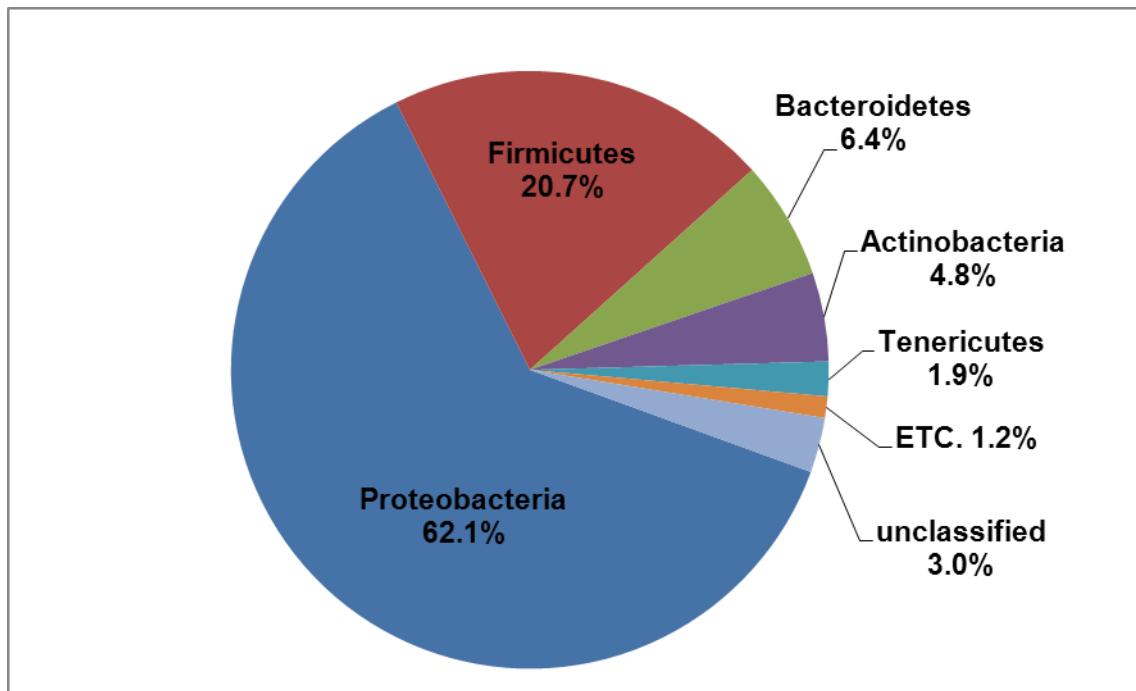
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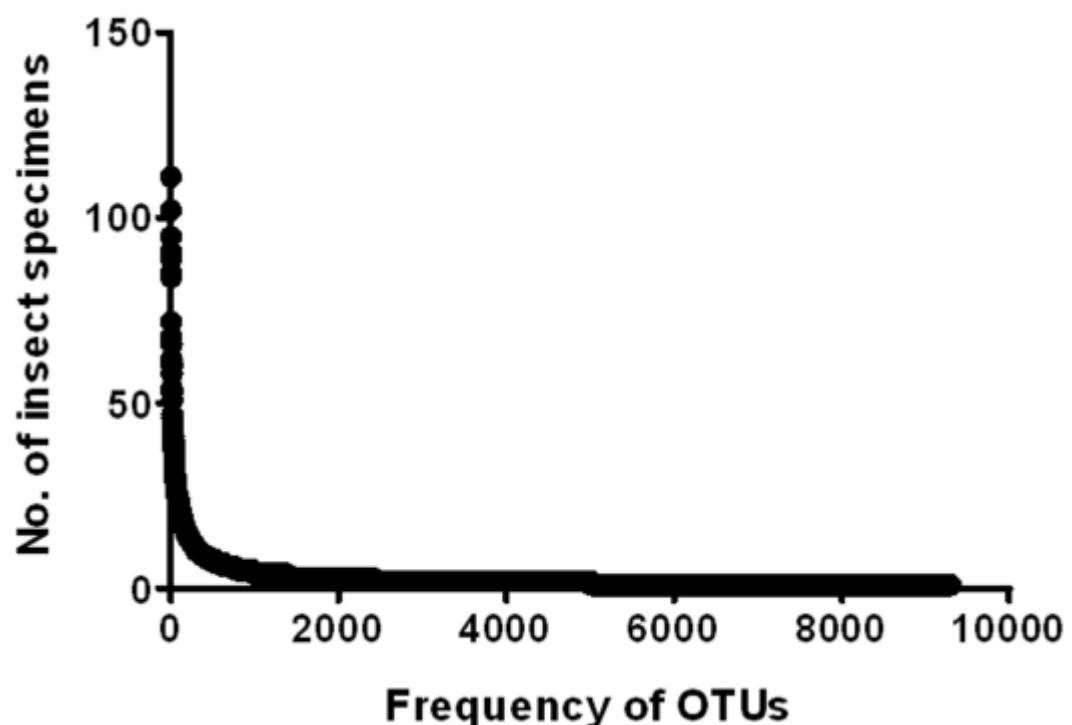
**Supplementary Fig. S1.** Map showing the sampling locations of 305 insect samples (218 species belonging to 21 orders of Insecta) collected in this study. The 15 sampling sites where insects were collected are represented by the red circles. The five sites where honey bees (*Apis mellifera*) were collected to study geographical variations in the gut microbiota are represented by the open red circles. Numbers refer to the different locations described in Table S1. The map image was created in R using a personal geoarchive.



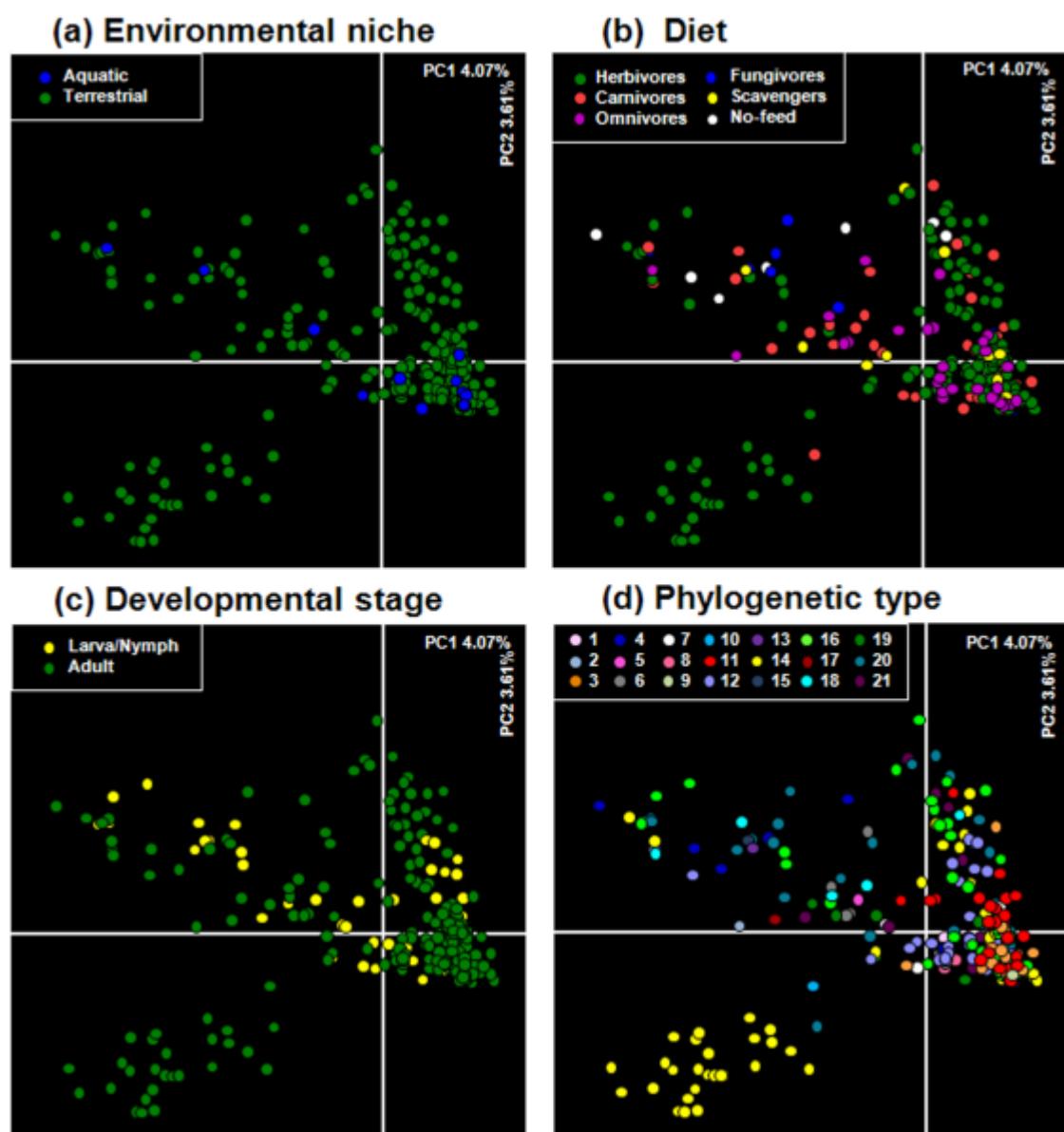
**Supplementary Fig. S2.** Summary of the composition of the insect gut microbial community from the total bacterial sequences across the 21 insect orders.



**Supplementary Fig. S3.** Rank-abundance curve for the operational taxonomic units (OTUs) (at the 3% distance level) identified in the insect gut microbiota. In the insect gut microbiota, 46% of bacterial OTUs were not observed in more than one insect sample.



**Supplementary Fig. S4.** PCoA of bacterial communities of insect gut microbiota based on host habitat (a), host diet (b), host developmental stage (c), and phylogenetic position at the level of insect order (d). 1, Archaeognatha; 2, Thysanura; 3, Odonata; 4, Ephemeroptera; 5, Plecoptera; 6, Dermaptera; 7, Mantodea; 8, Blattaria; 9, Isoptera; 10, Phasmatodea; 11, Orthoptera; 12, Hemiptera; 13, Thysanoptera; 14, Hymenoptera; 15, Trichoptera; 16, Lepidoptera; 17, Mecoptera; 18, Neuroptera; 19, Megaloptera; 20, Coleoptera; 21, Diptera.



**Supplementary Table S1.** Details of 305 insect samples collected between April 2010 and March 2012 for the present study.

Sample Name	Scientific name	Length (mm)	Order	Growth level	Sampling date	Sampling site	Site no. in Fig. S1	Habitat	Diet	Insect no. in Fig. 2	18S rRNA Accession no.
DS_002	<i>Scarites terricola pacificus</i> (Bates)	19-21	Coleoptera	adult	21-Apr-2010	Sohwang sand dune Boryeong-si Chungcheongnam-do (36°12' N, 126°32' E) Mount Maebong	7	Underground	Carnivore	218	KC413759
DS_005	<i>Mesosa myops</i> (Dalman)	14-16	Coleoptera	adult	27-Apr-2010	Yuseong-gu Daejeon (36°22' N, 127°22' E) Mount Maebong	9	Ground	Herbivore	131	KC413675
DS_006	<i>Moechotypa diphysis</i> (Pascoe)	23-25	Coleoptera	adult	27-Apr-2010	Yuseong-gu Daejeon (36°22' N, 127°22' E) Pyeonghae-eup Uljin-gun Gyeongsangbuk-do (36°43' N, 129°26' E)	9	Ground	Herbivore	130	KC413666
DS_022	<i>Opatrum subaratum</i> (Faldermann)	8-9	Coleoptera	adult	6-May-2010	Pyeonghae-eup Uljin-gun Gyeongsangbuk-do (36°43' N, 129°26' E)	15	Underground	Herbivore	125	KC413690
DS_025	<i>Paridea angulicollis</i> (Motschulsky)	5-6	Coleoptera	adult	6-May-2010	Pyeonghae-eup Uljin-gun Gyeongsangbuk-do (36°43' N, 129°26' E) Mount Maebong	15	Ground	Herbivore	128	KC413694
DS_048	<i>Adoretus tenuimaculatus</i> (Aquahouse)	10-11	Coleoptera	adult	27-May-2010	Yuseong-gu Daejeon (36°22' N, 127°22' E) Sohwang sand dune	9	Ground	Herbivore	150	KC413749
DS_2_049	<i>Chrysanthia integricollis</i> (Heyden)	7-8	Coleoptera	adult	23-Jun-2010	Boryeong-si Chungcheongnam-do (36°12' N, 126°32' E) Mount Gyeryong	7	Ground	Herbivore	129	KC413766
DS_070	<i>Cerogria janthinipennis</i> (Fairmaire)	12-13	Coleoptera	adult	4-Jun-2010	Gyeryong-si Chungcheongnam-do (36°20' N, 127°12' E) Pyeonghae-eup	8	Ground	Herbivore	124	KC413663
DS_009	<i>Smaragdina semiaurantiaca</i> (Fairmaire)	5-6	Coleoptera	adult	6-May-2010	Uljin-gun Gyeongsangbuk-do (36°43' N, 129°26' E) Mount Gyeryong	15	Ground	Herbivore	126	KC413754
DS_078	<i>Hydaticus grammicus</i> (Germar)	11-12	Coleoptera	adult	4-Jun-2010	Gyeryong-si Chungcheongnam-do (36°20' N, 127°12' E) Mount Kohwang	8	Aquatic	Carnivore	116	KC413755
J_005	Adoretus sp.	8-9	Coleoptera	adult	21-May-2010	Dongdaemun-Gu	2	Ground	Herbivore	151	KC413818

DS_2_044	<i>Malachius prolongatus</i> (Motschulsky)	6-7	Coleoptera	adult	23-Jun-2010	Seoul (37°35 N, 127°03 E) Sohwang sand dune Boryeong-si Chungcheongnam-do (36°12 N, 126°32 E) Sohwang sand dune Boryeong-si Chungcheongnam-do (36°12 N, 126°32 E) Sohwang sand dune Boryeong-si Chungcheongnam-do (36°12 N, 126°32 E) Mount Songni Boeun-gun Chungcheongbuk-do ( 36°36 N, 127°47 E)	7	Ground	Omnivore	122	KC413776
DS_2_048	<i>Scarites acutidens</i> (Morawitz)	20-21	Coleoptera	adult	23-Jun-2010	Boryeong-si Chungcheongnam-do (36°12 N, 126°32 E) Sohwang sand dune Boryeong-si Chungcheongnam-do (36°12 N, 126°32 E) Sohwang sand dune Boryeong-si Chungcheongnam-do (36°12 N, 126°32 E) Mount Songni Boeun-gun Chungcheongbuk-do ( 36°36 N, 127°47 E)	7	Underground	Carnivore	217	KC413915
DS_2_050	<i>Chlorophorus simillimus</i> (Kraatz)	12-13	Coleoptera	adult	23-Jun-2010	Boryeong-si Chungcheongnam-do (36°12 N, 126°32 E) Mount Songni Boeun-gun Chungcheongbuk-do ( 36°36 N, 127°47 E)	7	Ground	Herbivore	137	KC413731
DS_F_013	<i>Cryptocephalus koltzei</i> (Weise)	4-5	Coleoptera	adult	22-Jun-2010	Boeun-gun Chungcheongbuk-do ( 36°36 N, 127°47 E) Mount Songni Yuseong-gu Daejeon ( 36°22 N, 127°22 E)	11	Ground	Herbivore	142	KC413784
DS_F_006	<i>Gametis jucunda</i> (Faldermann)	12-13	Coleoptera	adult	22-Jun-2010	Boeun-gun Chungcheongbuk-do ( 36°36 N, 127°47 E) Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E)	11	Ground	Herbivore	146	KC413752
J_023	<i>Blitopertha orientalis</i> (Aquahouse)	7-8	Coleoptera	adult	20-Jun-2010	Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E)	9	Ground	Herbivore	148	KC413828
J_038	<i>Dorcus titanus castanicolor</i> (Motschulsky)	75-80	Coleoptera	adult	26-Jun-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E)	9	Ground	Herbivore	133	KC413829
J_082	<i>Moechotypa diphysis</i> (pascoe)	22-24	Coleoptera	adult	2-Jul-2010	Jungnangcheon Seoul ( 37°36 N, 127°4 E) Pyeonghae-eup Uljin-gun Gyeongsangbuk-do (36°43 N, 129°26 E)	3	Ground	Herbivore	130	KC413712
J_096	<i>Peirates turpis</i> (Walker)	13-15	Hemiptera	adult	3-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E)	1	Ground	Carnivore	59	KC413704
J_198	<i>Anomala luculenta</i> (Erichson)	15-16	Coleoptera	adult	7-Jul-2010	Jungnangcheon Seoul ( 37°36 N, 127°4 E) Pyeonghae-eup Uljin-gun Gyeongsangbuk-do (36°43 N, 129°26 E)	2	Ground	Herbivore	149	KC413746
DS_021	<i>Polistes snelleni</i> (Saussure)	15-17	Hymenoptera	adult	6-May-2010	Pyeonghae-eup Uljin-gun Gyeongsangbuk-do (36°43 N, 129°26 E)	15	Sky	Herbivore	91	KC413747
DS_038	Lasioglossum sp	9-10	Hymenoptera	adult	6-May-2010	Pyeonghae-eup Uljin-gun Gyeongsangbuk-do (36°43 N, 129°26 E)	15	Sky	Herbivore	99	KC413665

DS_044	<i>Bombus ignitus</i> (Smith)	15-16	Hymenoptera	adult	12-May-2010	Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E )	8	Sky	Herbivore	102	KC413667
DS_043	<i>Bombus ussutensis</i> (Radoszkowski)	14-15	Hymenoptera	adult	12-May-2010	Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E )	8	Sky	Herbivore	103	KC413696
DS_052	Tryphoninae sp.	17~19	Hymenoptera	adult	4-Jun-2010	Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E )	8	Sky	Herbivore	86	KC413702
DS_F_011	Campopleginae sp.	14-15	Hymenoptera	adult	22-Jun-2010	Mount Songni Boeun-gun Chungcheongbuk-do ( 36°36 N, 127°47 E )	11	Sky	Herbivore	84	KC413680
J_031	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	26-Jun-2010	Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E )	9	Sky	Herbivore	101	KC413736
J_089	<i>Acroricnus ambulator</i> (Smith)	20-22	Hymenoptera	adult	3-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E )	1	Sky	Herbivore	83	KC413656
J_155	formicidae sp.	9-10	Hymenoptera	adult	5-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127° 5 E )	3	Sky	Omnivore	81	KC413653
J_163	formicidae sp.	9-10	Hymenoptera	adult	4-Jul-2010	Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E )	9	Sky	Omnivore	81	KC413701
J_209	<i>Polistes snelleni</i> (Saussure)	10-12	Hymenoptera	adult	7-Jul-2010	Jungnangcheon Seoul ( 37°36 N, 127° 4 E )	2	Sky	Herbivore	91	KC413765
J_165_1	<i>Tenodera angustipennis</i> (Saussure)	20-22	Mantodea	nymph	4-Jul-2010	Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E )	9	Ground	Carnivore	30	KC413908
J_228	<i>Episyron arrogans</i> (Smith)	14-16	Hymenoptera	adult	8-Jul-2010	Jungnangcheon Seoul ( 37°36 N, 127° 4 E )	2	Sky	Herbivore	89	KC413796
DS_013	<i>Papilio macilentus</i> (Janson)	47-50	Lepidoptera	adult	6-May-2010	Pyeonghae-eup Uljin-gun Gyeongsangbuk-do (36°43 N, 129°26 E)	15	Sky	Herbivore	161	KC413878
DS_017	<i>Sericinus montela</i> (Gray)	21-23	Lepidoptera	adult	6-May-2010	Pyeonghae-eup Uljin-gun Gyeongsangbuk-do	15	Sky	Herbivore	160	KC413855

DS_018	<i>Lycaena phlaeas</i> (Linnaeus)	12-14	Lepidoptera	adult	6-May-2010	(36°43 N, 129°26 E) Pyeonghae-eup Uljin-gun Gyeongsangbuk-do (36°43 N, 129°26 E) Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E) Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E) Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E) Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E)	15	Sky	Herbivore	192	KC413877
J_175	<i>Minois dryas</i> (Scopoli)	23-25	Lepidoptera	adult	4-Jul-2010	( 36°22 N, 127°22 E) Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E)	9	Sky	Herbivore	170	KC413854
DS_056	<i>Geometra dieckmanni</i> (Graeser)	20-22	Lepidoptera	adult	4-Jun-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	8	Sky	Herbivore	168	KC413869
J_002	<i>Periplaneta japonica</i> (Karny)	25-28	Blattaria	adult	21-May-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	2	Ground	Omnivore	32	KC413734
DS_060	<i>Sphragifera biplagiata</i> (Walker)	12-14	Lepidoptera	adult	4-Jun-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	8	Sky	Herbivore	179	KC413837
J_010	<i>Archanna melanaria</i> (Linnaeus)	16-18	Lepidoptera	adult	5-Jun-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	3	Sky	Herbivore	154	KC413880
J_111	<i>Cystidia stratonice</i> (Stoll)	20-21	Lepidoptera	adult	4-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Herbivore	172	KC413848
J_018	<i>Japonica lutea</i> (Hewitson)	13-15	Lepidoptera	adult	5-Jun-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Mount Maebong	3	Sky	Herbivore	158	KC413881
J_036	<i>Everes argiades</i> (Pallas)	10-11	Lepidoptera	adult	26-Jun-2010	Yuseong-gu Daejeon ( 36°22 N, 127°22 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	9	Sky	Herbivore	194	KC413884
J_133	<i>Timandra comptaria</i> (Walker)	10-11	Lepidoptera	adult	4-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Herbivore	156	KC413866
J_072	<i>Pierris melete</i> (Menetries)	20-22	Lepidoptera	adult	1-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	3	Sky	Herbivore	181	KC413844
J_199	<i>Glyphodes perspectalis</i> (Walker)	20-22	Lepidoptera	adult	7-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Sky	Herbivore	163	KC413836

J_090	Limacodidae sp	12-13	Lepidoptera	adult	3-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E)	1	Sky	Herbivore	187	KC413859
J_114	<i>Japonica saepestriata</i> (Hewitson)	13-15	Lepidoptera	adult	4-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E)	1	Sky	Herbivore	157	KC413846
J_115	<i>Naxa seriaria</i> (Motschulsky)	18-20	Lepidoptera	adult	4-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E)	1	Sky	Herbivore	155	KC413849
J_121	<i>Neptis speyeri</i> (Staudinger)	18-20	Lepidoptera	adult	4-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E)	1	Sky	Herbivore	171	KC413852
J_124	<i>Pieris canidia</i> (Kaolico)	17-19	Lepidoptera	adult	4-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E)	1	Sky	Herbivore	183	KC413847
J_172	<i>Pieris canidia</i> (Kaolico)	16-17	Lepidoptera	adult	4-Jul-2010	Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E)	9	Sky	Herbivore	183	KC413863
J_179_1	<i>Pieris rapae</i> (Linnaeus)	16-17	Lepidoptera	adult	6-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Sky	Herbivore	188	KC413860
J_185	<i>Polygonia c-aureum</i> (Linnaeus)	16-18	Lepidoptera	adult	7-Jul-2010	Jungnangcheon Seoul ( 37°36 N, 127°4 E)	2	Sky	Herbivore	167	KC413868
J_194	<i>Pieris rapae</i> (Linnaeus)	16-18	Lepidoptera	adult	7-Jul-2010	Jungnangcheon Seoul ( 37°36 N, 127°4 E)	2	Sky	Herbivore	188	KC413874
J_195	<i>Lycaena dispar</i> (Haworth)	13-15	Lepidoptera	adult	7-Jul-2010	Jungnangcheon Seoul ( 37°36 N, 127°4 E)	2	Sky	Herbivore	159	KC413867
DS_016	<i>Rhopalus sapporensis</i> (Matsumura)	6-8	Hemiptera	adult	6-May-2010	Pyeonghae-eup Uljin-gun Gyeongsangbuk-do (36°43 N, 129°26 E)	15	Ground	Herbivore	64	KC413898
DS_2_042	<i>Aphrophora stictica</i> (Matsumura)	10-12	Hemiptera	adult	23-Jun-2010	Sohwang sand dune Boryeong-si Chungcheongnam-do (36°12 N, 126°32 E)	7	Ground	Herbivore	52	KC413732
J_001	<i>Eurydema gebleri</i> (Kolenati)	8-9	Hemiptera	adult	21-May-2010	Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E)	2	Ground	Herbivore	69	KC413899

J_132	<i>Carbula putomi</i> (Jakovlev)	8-9	Hemiptera	adult	4-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E )	1	Ground	Herbivore	73	KC413813
J_134	<i>Poecilocoris splendidulus</i> (Esaki)	18-20	Hemiptera	adult	4-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E )	1	Ground	Herbivore	67	KC413895
J_167	<i>Riptortus clavatus</i> (Thunberg)	15-17	Hemiptera	adult	4-Jul-2010	Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E )	9	Ground	Herbivore	66	KC413896
J_212	<i>Aquarius paludum</i> (Fabricius)	16-17	Hemiptera	adult	7-Jul-2010	Jungnangcheon Seoul ( 37°36 N, 127°4 E )	2	Ground	Carnivore	58	KC413780
DS_015	<i>Phaenicia sericata</i> (Meigen)	8-9	Diptera	adult	6-May-2010	Pyeonghae-eup Uljin-gun Gyeongsangbuk-do (36°43 N, 129°26 E)	15	Sky	Scavenger	213	KC413872
J_048	<i>Psecticus tenebrifer</i> (Walker)	14-15	Diptera	adult	20-Jun-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E )	3	Sky	No-feed	206	KC413905
J_074	<i>Phaenicia sericata</i> (Meigen)	8-9	Diptera	adult	2-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E )	3	Sky	Scavenger	213	KC413865
J_075	<i>Phaenicia sericata</i> (Meigen)	8-9	Diptera	adult	2-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E )	3	Sky	Scavenger	213	KC413918
J_094	<i>Neoitamus angusticornis</i> (Loew)	17-18	Diptera	adult	3-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E )	1	Sky	Carnivore	203	KC413903
J_118	<i>Anterhynchium flavomarginatum koreanum</i> (Yamane)	17-19	Hymenoptera	adult	4-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E )	1	Sky	Herbivore	90	KC413695
J_141	<i>Nephrotoma virgata</i> (Coquillett)	15-17	Diptera	adult	5-Jul-2010	Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E )	2	Sky	No-feed	197	KC413904
J_190	<i>Cophinopoda chinensis</i> (Fabricius)	22-24	Diptera	adult	7-Jul-2010	Jungnangcheon Seoul ( 37°36 N, 127°4 E )	2	Sky	Carnivore	201	KC413907
J_230	<i>Syritta pipiens</i> (Linnaeus)	7-8	Diptera	adult	8-Jul-2010	Jungnangcheon Seoul ( 37°36 N, 127°4 E )	2	Sky	Herbivore	205	KC413906

DS_003	<i>Labidura riparia japonica</i> (de Haan)	22-25	Dermoptera	nymph	21-Apr-2010	Sohwang sand dune Boryeong-si Chungcheongnam-do (36°12' N, 126°32' E) Pyeonghae-eup Uljin-gun Gyeongsangbuk-do (36°43' N, 129°26' E)	7	Ground	Omnivore	23	KC413654
DS_014	<i>Davidius lunatus</i> (Bartenev)	36-38	Odonata	adult	6-May-2010	Mount Bulam Namyangju-si Gyeonggi-do (37°39' N, 127°5' E)	15	Sky	Carnivore	9	KC413786
J_024	<i>Sympetrum frequens</i> (Selys)	40-42	Odonata	adult	23-Jun-2010	Mount Bulam Namyangju-si Gyeonggi-do (37°39' N, 127°5' E)	3	Sky	Carnivore	11	KC413825
J_025	<i>Sympetrum infuscatum</i> (Selys)	46-50	Odonata	adult	23-Jun-2010	Mount Bulam Namyangju-si Gyeonggi-do (37°39' N, 127°5' E)	3	Sky	Carnivore	12	KC413822
J_101	<i>Platycnemis phyllopoda</i> (Djakonov)	36-38	Odonata	adult	3-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do (37°45' N 127°9' E)	1	Sky	Carnivore	3	KC413795
J_166	<i>Plautia stali</i> (Scott)	5-6	Hemiptera	nymph	4-Jul-2010	Mount Maebong Yuseong-gu Daejeon (36°22' N, 127°22' E)	9	Ground	Herbivore	68	KC413816
J_177	<i>Sympetrum frequens</i> (Selys)	40-42	Odonata	adult	4-Jul-2010	Mount Maebong Yuseong-gu Daejeon (36°22' N, 127°22' E)	9	Sky	Carnivore	11	KC413774
J_103	<i>Calopteryx atrata</i> (Selys)	64-66	Odonata	adult	4-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do (37°45' N 127°9' E)	1	Sky	Carnivore	5	KC413771
J_204_1	<i>Ischnura elegans</i> (Vander Linden)	34-36	Odonata	adult	7-Jul-2010	Jungnangcheon Seoul (37°36' N, 127°4' E)	2	Sky	Carnivore	6	KC413851
J_176	<i>Calopteryx japonica</i> (Selys)	54-56	Odonata	adult	4-Jul-2010	Mount Maebong Yuseong-gu Daejeon (36°22' N, 127°22' E)	9	Sky	Carnivore	4	KC413781
J_123	<i>Ognevia longipennis</i> (Shiraki)	34-36	Orthoptera	adult	4-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do (37°45' N 127°9' E)	1	Ground	Herbivore	45	KC413674
J_126	<i>Anapodisma beybienkoi</i> (Rentz et Miller)	28-30	Orthoptera	adult	4-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do (37°45' N 127°9' E)	1	Ground	Herbivore	46	KC413725
DS_F_004	<i>Anapodisma miramae</i> (Dovnar-Zapolskyi)	26-28	Orthoptera	adult	22-Jun-2010	Mount Songni Boeun-gun	11	Ground	Herbivore	44	KC413646

DS_F_005	<i>Tettigonia ussuriana</i> (Uvarov)	24-26	Orthoptera	nymph	22-Jun-2010	Chungcheongbuk-do ( 36°36 N, 127°47 E) Mount Songni Boeun-gun Chungcheongbuk-do ( 36°36 N, 127°47 E)	11	Ground	Carnivore	37	KC413659
DS_F_016	<i>Anapodisma miramae</i> (Dovnar-Zapolskyi)	12-14	Orthoptera	nymph	22-Jun-2010	Mount Songni Boeun-gun Chungcheongbuk-do ( 36°36 N, 127°47 E)	11	Ground	Herbivore	44	KC413730
J_026	<i>Phaneroptera falcata</i> (Poda)	40-42	Orthoptera	adult	26-Jun-2010	Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E) Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E)	9	Ground	Herbivore	41	KC413827
J_030_1	<i>Tetrix japonica</i> (Bolivar)	10-11	Orthoptera	adult	26-Jun-2010	Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E)	9	Ground	Scavenger	28	KC413710
J_033	<i>Acrida cinerea</i> (Thunberg)	20-22	Orthoptera	nymph	26-Jun-2010	Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E)	9	Ground	Herbivore	42	KC413737
J_035_2	<i>Conocephalus chinensis</i> (Redtenbacher)	26-28	Orthoptera	adult	26-Jun-2010	Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E)	9	Ground	Herbivore	34	KC413735
J_044_1	<i>Shirakiacris shirakii</i> (Bolivar)	10-11	Orthoptera	nymph	20-Jun-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Herbivore	43	KC413648
J_186	<i>Acrida cinerea</i> (Thunberg)	46-48	Orthoptera	nymph	7-Jul-2010	Jungnangcheon Seoul ( 37°36 N, 127°4 E)	2	Ground	Herbivore	42	KC413658
J_061	<i>Tetrix japonica</i> (Bolivar)	11-13	Orthoptera	adult	28-Jun-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Scavenger	28	KC413717
J_191	<i>Tropidothorax cruciger</i> (Motschulsky)	10-11	Hemiptera	adult	7-Jul-2010	Jungnangcheon Seoul ( 37°36 N, 127°4 E)	2	Ground	Herbivore	65	KC413815
J_197_2	<i>Acrida cinerea</i> (Thunberg)	38-40	Orthoptera	nymph	7-Jul-2010	Jungnangcheon Seoul ( 37°36 N, 127°4 E)	2	Ground	Herbivore	42	KC413689
DS_023	<i>Heptagenia kihada</i> (Matsumura)	9-11	Ephemeroptera	adult	6-May-2010	Pyeonghae-eup Uljin-gun Gyeongsangbuk-do (36°43 N, 129°26 E)	15	Sky	No-feed	15	KC413817
DS_F_026	<i>Tenodera sinensis</i> (Saussure)	20-22	Mantodea	nymph	22-Jun-2010	Mount Songni Boeun-gun	11	Ground	Carnivore	31	KC413762

J_417	<i>Megopis sinica</i> (white)	45-48	Coleoptera	adult	22-Jul-2010	Chungcheongbuk-do ( 36°36 N, 127°47 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Herbivore	136	KC413697
J_388	<i>Onthophagus sp.</i>	9-10	Coleoptera	adult	19-Jul-2010	Jungnangcheon Seoul ( 37°36 N, 127° 4 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	2	Underground	Scavenger	143	KC413763
J_407	<i>Tenomerga anguliscutus</i> (Kolbe)	12-13	Coleoptera	adult	21-Jul-2010	Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Herbivore	115	KC413819
J_717	<i>Pheidole fervida</i> (Smith)	6-7	Hymenoptera	adult	13-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Omnivore	80	KC413820
J_104	<i>Sasakia charonda</i> (Hewitson)	35-38	Lepidoptera	adult	4-Jul-2010	Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E)	1	Sky	Herbivore	185	KC413856
DS_073	<i>Acanthosoma crassicaudum</i> (Jakovlev)	17-18	Hemiptera	adult	4-Jun-2010	Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	8	Ground	Herbivore	72	KC413806
DS_072	<i>Adrisa magna</i> (Uhler)	17-19	Hemiptera	adult	4-Jun-2010	Chungcheongnam-do ( 36°20 N, 127°12 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	8	Underground	Herbivore	71	KC413770
J_733	<i>Meimuna mongolica</i> (Distant)	33-35	Hemiptera	adult	13-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Herbivore	57	KC413706
J_734	<i>Graptopsaltria nigrofuscata</i> (Motschulsky)	40-45	Hemiptera	adult	13-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	1	Ground	Herbivore	56	KC413709
J_655	<i>Oncotympana fuscata</i> (Distant)	30-32	Hemiptera	adult	4-Aug-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Herbivore	55	KC413707
H_007	<i>Crocisa emarginata</i> (Lepeletier)	15-17	Hymenoptera	adult	13-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Sky	Herbivore	100	KC413812
DS_049	<i>Antipalus pedestris</i> (Becker)	20-22	Diptera	adult	4-Jun-2010	Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E)	8	Sky	Carnivore	202	KC413916

PYS_005	<i>Parachauiodes continentalis</i> (van der Weele)	30-31	Megaloptera	larva	9-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	1	Aquatic	Carnivore	111	KC413914
J_642	<i>Gryllus sibiricus</i> (Chopard)	22-23	Orthoptera	nymph	4-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Omnivore	19	KC413910
J_687	<i>Ephemera orientalis</i> (McLachlan)	17-19	Ephemeroptera	adult	8-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E)	1	Sky	No-feed	18	KC413778
J_691	<i>Ephemera orientalis</i> (McLachlan)	13-15	Ephemeroptera	adult	8-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E)	1	Sky	No-feed	18	KC413802
PYS_004	<i>Ephemera separigata</i> (Bae)	20-22	Ephemeroptera	nymph	9-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E)	1	Aquatic	Scavenger	17	KC413790
J_335	<i>Ephemera orientalis</i> (McLachlan)	17-19	Ephemeroptera	adult	14-Jul-10	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E)	1	Sky	No-feed	18	KC413809
J_351	<i>Ecdyonurus levis</i> (Navás)	8-9	Ephemeroptera	adult	14-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E) Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E)	1	Sky	No-feed	16	KC413823
DS_115	<i>Tenodera sinensis</i> (Saussure)	30-32	Mantodea	nymph	5-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E) Jungnangcheon Seoul ( 37°36 N, 127°4 E)	8	Ground	Carnivore	31	KC413753
J_593	<i>Tenodera sinensis</i> (Saussure)	43-45	Mantodea	nymph	31-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E)	1	Ground	Carnivore	31	KC413805
J_240	<i>Chrysopa formosa</i> (Brauer)	10-11	Neuroptera	adult	8-Jul-2010	Jungnangcheon Seoul ( 37°36 N, 127°4 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	2	Sky	Carnivore	105	KC413727
J_548	Osmylidae sp.	8-10	Neuroptera	adult	29-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°39 N, 127°5 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Sky	Carnivore	104	KC413826
J_099	<i>Neochauiodes koreanus</i> (van der Weele)	35-38	Megaloptera	adult	3-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E)	1	Sky	Carnivore	112	-
J_753	<i>Chrysopidia ciliata</i> (Wesmael)	9-10	Neuroptera	adult	16-Sep-2010	Mount Kohwang Dongdaemun-Gu	2	Sky	Carnivore	106	KC413703

J_718	<i>Dictyophara patruelis</i> (Stal)	9-11	Hemiptera	adult	13-Aug-2010	Seoul (37°35 N, 127°03 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Herbivore	50	KC413811
J_744	<i>Agrius convolvuli</i> (Linnaeus)	55-58	Lepidoptera	adult	13-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Herbivore	193	KC413882
DS_024	<i>Ecdyonurus levis</i> (Navas)	11-13	Ephemeroptera	adult	6-May-2010	Pyeonghae-eup Uljin-gun Gyeongsangbuk-do (36°43 N, 129°26 E)	15	Sky	No-feed	16	KC413814
J_353	<i>Rhantus pulverosus</i> (Stephens)	12-14	Coleoptera	adult	14-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Aquatic	Carnivore	117	KC413800
J_003	<i>Periplaneta japonica</i> (Karny)	24-26	Blattaria	adult	21-May-2010	Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E)	2	Ground	Omnivore	32	KC413768
J_504	<i>Periplaneta japonica</i> (Karny)	13-14	Blattaria	nymph	25-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Omnivore	32	KC413794
DS_2_032	<i>Blattella nipponica</i> (Asahina)	12-14	Blattaria	adult	23-Jun-2010	Sohwang sand dune Boryeong-si Chungcheongnam-do (36°12 N, 126°32 E)	7	Ground	Omnivore	33	KC413724
J_410	<i>Anechura japonica</i> (Bormans)	18-20	Dermoptera	adult	21-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Omnivore	25	KC413722
J_523	<i>Euborellia pallipes</i> (Shiraki)	23-25	Dermoptera	adult	27-Jul-2010	Hamyeol-eup Iksan-si Chollabuk-do ( 36° 4 N, 126°57 E)	14	Ground	Omnivore	22	KC413782
J_563	Pterostichus sp	9-10	Coleoptera	larva	29-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Carnivore	216	KC413723
J_570	<i>Timomenus komarovi</i> (Semenov)	22-24	Dermoptera	adult	30-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Omnivore	24	KC413824
J_156	<i>Gonolabis marginalis</i> (Dohrn)	20-22	Dermoptera	adult	5-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do	3	Ground	Omnivore	20	KC413797

CH_019	<i>Thrips palmi</i> (Karny)	0.9-1	Thysanoptera	adult	17-Jul-2010	( 37°39 N, 127°5 E) Mount Songni Boeun-gun Chungcheongbuk-do ( 36°36 N, 127°47 E) Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	11	Sky	Herbivore	77	KC413830
DS_3_046	<i>Phraortes illepidus</i> (Brunner von Wattenwyl)	80-85	Phasmatodea	adult	15-Jul-2010	( 37°39 N, 127°5 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Hongcheon-gun Gangwon-do (37°39 N, 127°53 E) Hongcheon-gun Gangwon-do (37°39 N, 127°53 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	8	Ground	Herbivore	29	KC413821
J_640	<i>Lepisma saccharina</i> (Linnaeus)	8-9	Thysanura	adult	4-Aug-2010	( 37°39 N, 127°5 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Omnivore	2	KC413893
J_396	<i>Pedetontus</i> sp.	13-15	Archaeognatha	adult	21-Jul-2010	( 37°39 N, 127°5 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Omnivore	1	KC413883
PYS_001_1	<i>Oyamia nigribasis</i> (Banks)	27-29	Plecoptera	nymph	5-Aug-2010	(37°39 N, 127°53 E)	4	Aquatic	Carnivore	26	KC413889
PYS_002	<i>Hydatophylax nigrovittatus</i> (MacLachlan)	22-24	Trichoptera	larva	5-Aug-2010	(37°39 N, 127°53 E)	4	Aquatic	Scavenger	152	KC413777
J_693	<i>Panorpa orientalis</i> (McLachlan)	13-16	Mecoptera	adult	8-Aug-2010	( 37°45 N 127° 9 E) Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E)	1	Sky	Carnivore	114	KC413779
J_299	<i>Sieboldius albardae</i> (Selys)	27-29	Odonata	nymph	10-Jul-2010	( 36°22 N, 127°22 E) Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E)	9	Aquatic	Carnivore	7	KC413803
DS_106	<i>Gryllotalpa orientalis</i> (Burmeister)	18-19	Orthoptera	nymph	30-Jun-2010	( 36°20 N, 127°12 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	8	Underground	Omnivore	79	-
J_415_1	Sarcophagidae sp.	9-10	Diptera	larva	21-Jul-2010	( 37°39 N, 127°5 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Scavenger	212	KC413886
J_415_2	Sarcophagidae sp.	13-15	Diptera	larva	21-Jul-2010	( 37°39 N, 127°5 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Scavenger	212	KC413887
J_320	<i>Parachauliodes continentalis</i> (van der Weele)	33-35	Megaloptera	adult	14-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Carnivore	111	-
J_324	<i>Protohermes grandis</i> (Thunberg)	45-47	Megaloptera	adult	14-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si	1	Sky	Carnivore	113	-

J_184	<i>Diaphania indica</i> (Saunders)	14-16	Lepidoptera	larva	6-Jul-2010	Gyeonggi-do ( 37°45 N 127° 9 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Herbivore	176	KC413733
J_385	<i>Anisolabella marginalis</i> (Dohrn)	23-24	Dermoptera	adult	19-Jul-2010	Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E) Pyeonghae-eup Uljin-gun Gyeongsangbuk-do (36°43 N, 129°26 E)	2	Ground	Omnivore	21	KC413693
DS_041	Myrmeleontidae sp.	10-12	Neuroptera	larva	6-May-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	15	Underground	Carnivore	107	KC413911
J_050	Lepidoptera sp.	16-18	Lepidoptera	larva	20-Jun-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Herbivore	182	KC413845
J_080	<i>Plutella xylostella</i> (Linnaeus)	16-17	Lepidoptera	larva	2-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Herbivore	191	KC413876
J_178	Geometridae sp.	12-13	Lepidoptera	larva	4-Jul-2010	Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E)	9	Ground	Herbivore	175	KC413850
J_071	<i>Pieris rapae</i> (Linnaeus)	22-24	Lepidoptera	larva	1-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Herbivore	188	KC413842
J_751	<i>Diaphania indica</i> (Saunders)	22-23	Lepidoptera	larva	16-Sep-2010	Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E)	2	Ground	Herbivore	176	KC413879
J_752	<i>Diaphania indica</i> (Saunders)	12-14	Lepidoptera	larva	16-Sep-2010	Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E)	2	Ground	Herbivore	176	KC413885
J_745	<i>Illeis koebelei</i> (Timberlake)	5-6	Coleoptera	adult	15-Sep-2010	Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E)	2	Ground	Fungivore	139	KC413833
J_746	<i>Illeis koebelei</i> (Timberlake)	5-6	Coleoptera	adult	15-Sep-2010	Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E)	2	Ground	Fungivore	139	KC413832
J_747	<i>Illeis koebelei</i> (Timberlake)	5-6	Coleoptera	adult	15-Sep-2010	Mount Kohwang Dongdaemun-Gu Seoul	2	Ground	Fungivore	139	KC413807

J_748	<i>Illeis koebelei</i> (Timberlake)	6-7	Coleoptera	larva	16-Sep-2010	(37°35 N, 127°03 E) Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E) Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E) Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E) Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E) Mount Bulam	2	Ground	Fungivore	139	KC413810
J_749	<i>Illeis koebelei</i> (Timberlake)	6-7	Coleoptera	larva	16-Sep-2010	(37°35 N, 127°03 E) Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E) Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E) Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E) Mount Bulam	2	Ground	Fungivore	139	KC413785
J_750	<i>Illeis koebelei</i> (Timberlake)	6-7	Coleoptera	larva	16-Sep-2010	(37°35 N, 127°03 E) Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E) Mount Maebong Yuseong-gu Daejeon ( 36°22 N, 127°22 E) Mount Bulam	2	Ground	Fungivore	139	KC413757
DS_089	<i>Lycorma delicatula</i> (White)	5-6	Hemiptera	nymph	17-Jun-2010	( 36°22 N, 127°22 E) Mount Bulam	9	Ground	Herbivore	49	KC413750
H_024	<i>Lycorma delicatula</i> (White)	12-13	Hemiptera	nymph	13-Jul-2010	Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E) Hamyeol-eup Iksan-si Chollabuk-do ( 36° 4 N, 126°57 E) Mount Bulam	3	Ground	Herbivore	49	KC413720
EX_006	<i>Lycorma delicatula</i> (White)	13-14	Hemiptera	nymph	24-Jul-2010	Namyangju-si Gyeonggi-do ( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E) Hamyeol-eup Iksan-si Chollabuk-do ( 36° 4 N, 126°57 E) Mount Bulam	1	Ground	Herbivore	49	KC413738
J_527	Staphylinidae sp.	12-13	Coleoptera	adult	27-Jul-2010	Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Mount Bulam	14	Ground	Carnivore	134	KC413831
J_668	<i>Lycorma delicatula</i> (White)	25-26	Hemiptera	adult	5-Aug-2010	Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Mount Bulam	3	Ground	Herbivore	49	KC413788
J_669	<i>Lycorma delicatula</i> (White)	25-26	Hemiptera	adult	5-Aug-2010	Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Mount Kohwang	3	Ground	Herbivore	49	KC413721
J_754	<i>Lycorma delicatula</i> (White)	25-26	Hemiptera	adult	16-Sep-2010	Dongdaemun-Gu Seoul (37°35 N, 127°03 E) Mount Kohwang	2	Ground	Herbivore	49	KC413787
J_056	<i>Anechura japonica</i> (Bormans)	15-17	Dermoptera	adult	20-Jun-2010	Dongdaemun-Gu Seoul (37°35 N, 127°03 E) Mount Kohwang	2	Ground	Omnivore	25	KC413705
J_065	<i>Timomenus komarovi</i> (Semenov)	22-23	Dermoptera	adult	28-Jun-2010	Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Mount Bulam	3	Ground	Omnivore	24	KC413718

J_097	Staphylinidae sp.	16-18	Coleoptera	adult	3-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E) Seosan-si	1	Ground	Carnivore	121	KC413792
BSS_01	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	27-Jul-2010	Chungcheongnam-do ( 36°50 N, 126°30 E) Seosan-si	6	Sky	Herbivore	101	KC413668
BSS_02	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	27-Jul-2010	Chungcheongnam-do ( 36°50 N, 126°30 E) Seosan-si	6	Sky	Herbivore	101	KC413688
BSS_03	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	27-Jul-2010	Chungcheongnam-do ( 36°50 N, 126°30 E) Seosan-si	6	Sky	Herbivore	101	KC413676
BSS_04	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	27-Jul-2010	Chungcheongnam-do ( 36°50 N, 126°30 E) Seosan-si	6	Sky	Herbivore	101	KC413699
BSS_05	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	27-Jul-2010	Chungcheongnam-do ( 36°50 N, 126°30 E) Sinlim	6	Sky	Herbivore	101	KC413677
BSL_01	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	28-Jul-2010	Wonju-si Gangwon-do ( 37°12 N, 128° 5 E)	5	Sky	Herbivore	101	KC413715
BSL_02	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	28-Jul-2010	Sinlim Wonju-si Gangwon-do ( 37°12 N, 128° 5 E)	5	Sky	Herbivore	101	KC413684
BSL_03	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	28-Jul-2010	Sinlim Wonju-si Gangwon-do ( 37°12 N, 128° 5 E)	5	Sky	Herbivore	101	KC413669
BSL_04	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	28-Jul-2010	Sinlim Wonju-si Gangwon-do ( 37°12 N, 128° 5 E)	5	Sky	Herbivore	101	KC413670
BSL_05	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	28-Jul-2010	Sinlim Wonju-si Gangwon-do ( 37°12 N, 128° 5 E)	5	Sky	Herbivore	101	KC413672
BKS_01	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	10-Jun-2010	Goesan-gun Chungcheongbuk-do ( 36°48 N, 127°47 E)	10	Sky	Herbivore	101	KC413682
BKS_02	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	10-Jun-2010	Goesan-gun Chungcheongbuk-do ( 36°48 N, 127°47 E)	10	Sky	Herbivore	101	KC413686
BKS_03	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	10-Jun-2010	Goesan-gun Chungcheongbuk-do ( 36°48 N, 127°47 E)	10	Sky	Herbivore	101	KC413683
BKS_04	<i>Apis mellifera</i>	12-13	Hymenoptera	adult	10-Jun-	Goesan-gun	10	Sky	Herbivore	101	KC413716

	(Linnaeus)				2010	Chungcheongbuk-do ( 36°48 N, 127°47 E)					
BKS_05	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	10-Jun-2010	Goesan-gun Chungcheongbuk-do ( 36°48 N, 127°47 E)	10	Sky	Herbivore	101	KC413678
BJA_01	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	28-Jul-2010	Jinan-gun Jeollabuk-do ( 35°47 N, 127°25 E)	13	Sky	Herbivore	101	KC413713
BJA_02	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	28-Jul-2010	Jinan-gun Jeollabuk-do ( 35°47 N, 127°25 E)	13	Sky	Herbivore	101	KC413671
BJA_03	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	28-Jul-2010	Jinan-gun Jeollabuk-do ( 35°47 N, 127°25 E)	13	Sky	Herbivore	101	KC413681
BJA_04	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	28-Jul-2010	Jinan-gun Jeollabuk-do ( 35°47 N, 127°25 E)	13	Sky	Herbivore	101	KC413687
BJA_05	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	28-Jul-2010	Jinan-gun Jeollabuk-do ( 35°47 N, 127°25 E)	13	Sky	Herbivore	101	KC413679
BGS_01	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	28-Jul-2010	Mount Ga Chilgok-gun Gyeongsangbuk-do (36° 3 N, 128°39 E)	12	Sky	Herbivore	101	KC413714
BGS_02	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	28-Jul-2010	Mount Ga Chilgok-gun Gyeongsangbuk-do (36° 3 N, 128°39 E)	12	Sky	Herbivore	101	KC413698
BGS_03	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	28-Jul-2010	Mount Ga Chilgok-gun Gyeongsangbuk-do (36° 3 N, 128°39 E)	12	Sky	Herbivore	101	KC413692
BGS_04	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	28-Jul-2010	Mount Ga Chilgok-gun Gyeongsangbuk-do (36° 3 N, 128°39 E)	12	Sky	Herbivore	101	KC413691
BGS_05	<i>Apis mellifera</i> (Linnaeus)	12-13	Hymenoptera	adult	28-Jul-2010	Mount Ga Chilgok-gun Gyeongsangbuk-do (36° 3 N, 128°39 E)	12	Sky	Herbivore	101	KC413685
CH_015	Isoptera sp.	3-4	Isoptera	adult	17-Jul-2010	Mount Songni Boeun-gun Chungcheongbuk-do ( 36°36 N, 127°47 E)	11	Underground	Herbivore	48	KC413739
DS_3_005	<i>Isodontia nigella</i> (Smith)	18-20	Hymenoptera	adult	15-Jul-2010	Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E)	8	Sky	Herbivore	92	KC413657
J_705	<i>Onthophagus</i> sp.	9-10	Coleoptera	adult	13-Aug-	Soheul-eup	1	Underground	Scavenge	145	KC413742

DS_3_008	<i>Sphex occitanicus</i> (Lepeletier et Serville)	28-30	Hymenoptera	adult	15-Jul-2010	2010 Pocheon-si Gyeonggi-do ( 37°45' N 127°9' E) Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20' N, 127°12' E)	8	Sky	Herbivore	94	KC413745	r	
DS_3_011	<i>Trichius succinctus</i> (Pallas)	10-12	Coleoptera	adult	15-Jul-2010	Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20' N, 127°12' E) Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20' N, 127°12' E) Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20' N, 127°12' E)	8	Ground	Herbivore	147	KC413660		
DS_3_034	<i>Harmonia axyridis</i> (Pallas)	8-9	Coleoptera	adult	15-Jul-2010	Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20' N, 127°12' E) Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20' N, 127°12' E) Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20' N, 127°12' E)	8	Ground	Carnivore	138	KC413764		
DS_3_038	<i>Prionus insularis</i> (Motschulsky)	25-28	Coleoptera	adult	15-Jul-2010	Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20' N, 127°12' E) Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20' N, 127°12' E) Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20' N, 127°12' E)	8	Ground	Herbivore	135	KC413652		
DS_3_058_2	Diptera sp.	9-10	Diptera	larva	15-Jul-2010	Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20' N, 127°12' E) Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20' N, 127°12' E)	8	Host-associated	Carnivore	215	KC413862		
DS_3_075	<i>Atrophaneura alcinous</i> (Klug)	28-30	Lepidoptera	adult	15-Jul-2010	Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20' N, 127°12' E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39' N, 127°5' E)	8	Sky	Herbivore	162	KC413838		
J_395	<i>Acanthonevra amurensis</i> (Portschinsky)	7-9	Diptera	adult	21-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39' N, 127°5' E)	3	Sky	Herbivore	209	KC413861		
J_425	<i>Atlanticus brunneri</i> (Pylnov)	31-32	Orthoptera	adult	22-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39' N, 127°5' E)	3	Ground	Carnivore	36	KC413719		
J_226	<i>Aelia fieberi</i> (Scott)	5-6	Hemiptera	nymph	8-Jul-2010	Jungnangcheon Seoul ( 37°36' N, 127°4' E)	2	Ground	Herbivore	75	-		
J_450	<i>Seladonia aeraria</i> (Smith)	10-12	Hymenoptera	adult	22-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39' N, 127°5' E)	3	Sky	Herbivore	98	KC413661		
J_453	<i>Lema fortunei</i> (Baly)	7-8	Coleoptera	adult	22-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39' N, 127°5' E)	3	Ground	Herbivore	123	KC413651		
J_722	Chironomidae sp.	6-7	Diptera	adult	13-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do	1	Sky	No-feed	198	KC413919		

J_461	Tephritidae sp.	18-20	Diptera	adult	24-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Herbivore	210	KC413891
J_463	<i>Sinomphisa plagialis</i> (Wileman)	16-18	Lepidoptera	adult	24-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Herbivore	165	KC413840
J_466	<i>Toxorhynchites christophi</i> (Portschinsky)	16-18	Diptera	adlut	24-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Herbivore	199	KC413902
J_475_1	<i>Lamelligomphus ringens</i> (Needham)	62-62	Odonata	adult	24-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Carnivore	14	KC413760
J_558	Systropodinae sp.	14-16	Diptera	adult	29-Jul-2010	( 37°39 N, 127°5 E) Mount Bulam Namyangju-si Gyeonggi-do	3	Sky	Herbivore	204	KC413789
J_571	<i>Chalicodoma sculpturalis</i> (Smith)	24-26	Hymenoptera	adult	31-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Herbivore	96	KC413761
J_574	<i>Coptolabrus jankowskii</i> jankowskii (Oberthur)	38-40	Coleoptera	adult	31-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Carnivore	118	KC413741
J_576	<i>Melypteryx fuliginosa</i> (Uhler)	18-19	Hemiptera	nymph	31-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Herbivore	62	KC413767
J_581	<i>Megachile pieliana</i> (Friese)	10-11	Hymenoptera	adult	31-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Herbivore	95	KC413751
J_595	<i>Zombrus sjoestedtis</i> (Fahringer)	10-11	Hymenoptera	adult	31-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Herbivore	87	KC413655
J_598	<i>Graptosaltria nigrofuscata</i> (Motschulsky)	38-40	Hemiptera	adult	31-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Herbivore	56	KC413758
J_600	<i>Oncotympana fuscata</i> (Distant)	35-36	Hemiptera	adult	31-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Herbivore	55	KC413673

J_625	<i>Sceliphron deforme</i> (Smith)	17-20	Hymenoptera	adult	1-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E )	1	Sky	Herbivore	93	KC413748
J_633	<i>Epicopeia menciana</i> (Moore)	23-25	Lepidoptera	adult	1-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E )	1	Sky	Herbivore	173	KC413843
J_673	<i>Marumba gaschkevitschii</i> (Bremer)	60-63	Lepidoptera	larva	8-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E )	1	Ground	Herbivore	180	KC413841
J_695	<i>Pheidole fervida</i> (Smith)	5-6	Hymenoptera	adult	8-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E )	1	Sky	Omnivore	80	KC413650
J_701	<i>Paradacus depressus</i> (Shiraki)	14-15	Diptera	adult	8-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E )	1	Sky	Herbivore	208	KC413890
J_706	<i>Orybina regalis</i> (Leech)	12-13	Lepidoptera	adult	13-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E )	1	Sky	Herbivore	178	KC413835
J_728	<i>Comibaena delicatior</i> (Warren)	11-12	Lepidoptera	adult	13-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E )	1	Sky	Herbivore	174	KC413839
J_737	<i>Odonestis pruni</i> (Linnaeus)	18-19	Lepidoptera	adult	13-Aug-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E )	1	Sky	Herbivore	164	KC413834
J_357_1	<i>Chilocorus rubidus</i> (Hope)	5-6	Coleoptera	adult	18-Jul-2010	Mount Kohwang Dongdaemun-Gu Seoul (37°35 N, 127°03 E)	2	Ground	Carnivore	141	KC413773
J_317	<i>Callambulyx tatarinovii</i> (Bremer et Grey)	33-35	Lepidoptera	adult	14-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127°9 E )	1	Sky	Herbivore	186	KC413858
J_421	<i>Peirates turpis</i> (Walker)	14-15	Hemiptera	adult	22-Jul-2010	Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E )	3	Ground	Carnivore	59	KC413804
J_529	<i>Rhagastis mongoliana</i> (Butler)	30-35	Lepidoptera	adult	28-Jul-2010	Jinan-gun Jeollabuk-do	13	Sky	Herbivore	177	KC413909

J_573	<i>Numenes disparilis</i> (Staudinger)	19-20	Lepidoptera	adult	31-Jul-2010	( 35°47 N, 127°25 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Herbivore	184	KC413853
J_578	<i>Paratlanticus ussuriensis</i> (Uvarov)	30-32	Orthoptera	adult	31-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Omnivore	35	KC413649
J_580	<i>Syritta pipiens</i> (Linnaeus)	10-11	Diptera	adult	31-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Herbivore	205	KC413892
J_624	<i>Anoplophora malasiaca</i> (Thamson)	34-36	Coleoptera	adult	1-Aug-2010	( 37°39 N, 127°5 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Herbivore	132	KC413801
J_630	<i>Silpha perforata</i> (Gebler)	17-19	Coleoptera	adult	1-Aug-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Carnivore	120	KC413808
J_658	Torymidae sp	5-6	Hymenoptera	adult	5-Aug-2010	( 37°39 N, 127°5 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Sky	Herbivore	88	KC413647
J_239	<i>Seladonia aeraria</i> (Smith)	6-7	Hymenoptera	adult	8-Jul-2010	( 37°36 N, 127° 4 E) Jungnangcheon Seoul ( 37°36 N, 127° 4 E)	2	Sky	Herbivore	98	KC413728
J_244	<i>Coccinella septempunctata</i> (Linnaeus)	6-7	Coleoptera	adult	8-Jul-2010	( 37°36 N, 127° 4 E) Jungnangcheon Seoul ( 37°36 N, 127° 4 E)	2	Ground	Carnivore	140	KC413793
J_254	<i>Athalia kashmirensis</i> (Bensen)	7-8	Hymenoptera	adult	8-Jul-2010	( 37°36 N, 127° 4 E) Jungnangcheon Seoul ( 37°36 N, 127° 4 E)	2	Sky	Herbivore	78	KC413744
J_277	<i>Actias gnoma</i> (Butler)	26-28	Lepidoptera	adult	10-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Herbivore	169	KC413857
J_278	<i>Ledra auditura</i> (Walker)	14-15	Hemiptera	adult	10-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Herbivore	54	KC413783
J_279	<i>Tachina luteola</i> (Coquillett)	22-24	Diptera	adult	10-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Herbivore	214	KC413864
J_286	<i>Formica japonica</i> (Motschulsky)	8-9	Hymenoptera	adult	10-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do	1	Underground	Omnivore	82	KC413662

J_306	Tachinidae sp.	7-8	Diptera	adult	12-Jul-2010	( 37°45 N 127° 9 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	3	Sky	Herbivore	207	KC413870
J_343	<i>Rhodoneura erecta</i> (Leech)	7-8	Lepidoptera	adult	14-Jul-2010	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Herbivore	166	KC413871
J_344	Tiphidae sp.	7-8	Hymenoptera	adult	14-Jul-2010	( 37°45 N 127° 9 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Herbivore	97	KC413769
J_368	<i>Oedaleus infernalis</i> (Saussure)	17-18	Orthoptera	nymph	18-Jul-2010	( 37°39 N, 127°5 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Herbivore	47	KC413743
J_369	<i>Peirates turpis</i> (Walker)	15-16	Hemiptera	adult	18-Jul-2010	( 37°39 N, 127°5 E) Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E)	3	Ground	Carnivore	59	KC413894
DS_065	<i>Philosphingia dissimilis</i> (Bremer)	40-42	Lepidoptera	adult	4-Jun-2010	Mount Songni Boeun-gun Chungcheongbuk-do ( 36°36 N, 127°47 E)	8	Sky	Herbivore	189	KC413873
DS_F_023	Ichneumonidae sp.	13-14	Hymenoptera	adult	22-Jun-2010	Mount Songni Boeun-gun Chungcheongbuk-do ( 36°36 N, 127°47 E)	11	Sky	Herbivore	85	KC413664
DS_F_003	<i>Bothrogonia japonica</i> (Ishihara)	13-14	Hemiptera	adult	22-Jun-2010	Mount Songni Boeun-gun Chungcheongbuk-do ( 36°36 N, 127°47 E)	11	Ground	Herbivore	53	KC413772
DS_3_014	<i>Hybris subjacens</i> (Walker)	33-35	Neuroptera	adult	15-Jul-2010	Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E)	8	Sky	Carnivore	109	KC413913
DS_3_058_1	<i>Dalpada cinctipes</i> (Walker)	16-17	Hemiptera	adult	15-Jul-2010	Mount Gyeryong Gyeryong-si Chungcheongnam-do ( 36°20 N, 127°12 E)	8	Ground	Herbivore	70	KC413756
J_402	<i>Zoraida horishana</i> (Matsumura)	5-6	Hemiptera	adult	21-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Sky	Herbivore	51	KC413888
J_403	Systropodinae sp.	12-13	Diptera	adult	21-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Sky	Herbivore	204	KC413791

J_418	<i>Orthetrum melania</i> (Selys)	55-58	Odonata	adult	22-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	3	Sky	Carnivore	10	KC413798
J_462	<i>Baliga micans</i> (McLachlan)	45-47	Neuroptera	adult	24-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Carnivore	108	KC413912
J_464	<i>Lamelligomphus ringens</i> (Needham)	62-65	Odonata	adult	24-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Carnivore	14	KC413775
J_473	<i>Elimaea fallax</i> (Bey-Bienko)	14-15	Orthoptera	nymph	24-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Herbivore	39	KC413708
J_481	<i>Atylotus horvathi</i> (Szilady)	13-14	Diptera	adult	24-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Carnivore	200	KC413917
J_494	<i>Poecilocoris splendidulus</i> (Esaki)	12-14	Hemiptera	nymph	24-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Herbivore	67	KC413897
J_501	<i>Paratachycines ussuriensis</i> (Storozhenko)	23-25	Orthoptera	adult	25-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Omnivore	27	KC413711
J_551	<i>Phaneroptera nigroantennata</i> (Brunner)	6-7	Orthoptera	nymph	29-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Herbivore	38	KC413726
J_562	<i>Phaneroptera nigroantennata</i> (Brunner)	5-6	Orthoptera	nymph	29-Jul-2010	Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)	3	Ground	Herbivore	38	KC413700
J_582	<i>Haematoloecha nigrorufa</i> (Stal)	13-14	Hemiptera	nymph	31-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Carnivore	60	KC413901
J_585	<i>Sinochlora longifissa</i> (Matsumura)	18-20	Orthoptera	nymph	31-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Omnivore	40	KC413729
J_589	<i>Sympetrum pedemontanum</i> (Selys)	33-35	Odonata	adult	31-Jul-2010	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Carnivore	13	KC413799
J_251	<i>Rhopalus maculatus</i>	5-6	Hemiptera	nymph	8-Jul-	Jungnangcheon	2	Ground	Herbivore	63	KC413900

		(Fieber)				2010	Seoul ( 37°36 N, 127° 4 E) Mount Bulam Namyangju-si Gyeonggi-do ( 37°39 N, 127°5 E)					
J_651	<i>Gryllotalpa orientalis</i> (Burmeister)	13-15	Orthoptera	nymph	4-Aug-2010			3	Underground	Omnivore	79	-
J_676	<i>Diostrombus politus</i> (Uhler)	4-5	Hemiptera	adult	8-Aug-2010			1	Ground	Herbivore	76	-
J_698_2	Pterophoridae sp.	7-8	Lepidoptera	adult	8-Aug-2010			1	Sky	Herbivore	190	KC413875
J_700	<i>Eusilpha jakowlewi</i> (Semenov)	17-18	Coleoptera	larva	8-Aug-2010			1	Ground	Carnivore	119	KC413740
J_139	Melanotus sp.	15-16	Coleoptera	adult	13-Aug-2011			1	Ground	Herbivore	127	KC413923
J_049	<i>Blattella nipponica</i> (Asahina)	15-16	Blattaria	adult	13-Aug-2011			1	Ground	Omnivore	33	KC413922
J_556	<i>Lycorma delicatula</i> (White)	7-8	Hemiptera	larva	20-Jul-2011			1	Ground	Herbivore	49	KC413937
CH_011	<i>Bemisia tabaci</i> (Gennadius)	1	Hemiptera	adult	13-Aug-2011			1	Ground	Herbivore	74	-
J_358	<i>Lycorma delicatula</i> (White)	23-25	Hemiptera	adult	23-Sep-2011			1	Ground	Herbivore	49	KC413929
J_391	<i>Illeis koebelei</i> (Timberlake)	4-5	Coleoptera	adult	23-Sep-2011			1	Ground	Fungivore	139	KC413930
J_376	Onthophagus sp.	7-8	Coleoptera	adult	20-Jul-2011			1	Underground	Scavenger	144	KC413933
DS_3_018	<i>Gametis jucunda</i> (Faldermann)	9-10	Coleoptera	adult	20-Jul-2011			1	Ground	Herbivore	146	KC413924

DS_F_020	<i>Trichius succinctus</i> (Pallas)	9-10	Coleoptera	adult	20-Jul-2011	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Herbivore	147	KC413928
H_012	<i>Sphedanolestes impressicollis</i> (Stal)	13-14	Hemiptera	adult	13-Aug-2011	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Carnivore	61	KC413925
JH1	<i>Parachauiodes continentalis</i> (Van der Weele)	23-24	Megaloptera	larva	13-Aug-2011	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Aquatic	Carnivore	111	-
JH2	<i>Parachauiodes continentalis</i> (Van der Weele)	23-24	Megaloptera	larva	13-Aug-2011	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Aquatic	Carnivore	111	-
JH3	Tipula sp.	14-16	Diptera	larva	20-Jul-2011	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Aquatic	Scavenger	196	KC413936
JH4	Odonata sp.	15-16	Odonata	larva	20-Jul-2011	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Aquatic	Carnivore	8	KC413934
JH5	Trichoptera sp.	14-15	Trichoptera sp.	larva	13-Aug-2011	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Aquatic	Scavenger	153	KC413932
JH6	<i>Lycorma delicatula</i> (White)	14-15	Hemiptera	larva	20-Jul-2011	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Herbivore	49	KC413926
JH7	<i>Tenodera sinensis</i> (Saussure)	57-59	Mantodea	adult	23-Sep-2011	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Carnivore	31	KC413931
JH8	<i>Tenodera angustipennis</i> (Saussure)	62-64	Mantodea	adult	23-Sep-2011	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Ground	Carnivore	30	KC413921
JH9	Myrmeleontidae sp.	53-55	Neuroptera	adult	13-Aug-2011	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Carnivore	110	KC413935
JH10	<i>Parachauiodes continentalis</i> (Van der Weele)	34-36	Megaloptera	adult	20-Jul-2011	( 37°45 N 127° 9 E) Soheul-eup Pocheon-si Gyeonggi-do ( 37°45 N 127° 9 E)	1	Sky	Carnivore	111	-

JH11	Lepidoptera sp.	19-21	Lepidoptera	adult	13-Aug-2011	Soheul-eup Pocheon-si Gyeonggi-do ( 37°45' N 127°9' E )	1	Sky	Herbivore	195	KC413927
DL1	<i>Drosophila melanogaster</i>	2-3	Diptera	larva	20-Mar-2012	Lab reared	NA	Ground	Fungivore	211	KC413938
DA1	<i>Drosophila melanogaster</i>	2-3	Diptera	adult	20-Mar-2012	Lab reared	NA	Ground	Fungivore	211	KC413939
DA2	<i>Drosophila melanogaster</i>	2-3	Diptera	adult	20-Mar-2012	Lab reared	NA	Ground	Fungivore	211	KC413920

**Supplementary Table S2.** Diversity indices for insect gut microbiota. The operational taxonomic units (OTUs) were calculated using mothur with a 3% distance level. Mothur was used to calculate Good's coverage, abundance-based coverage estimator (ACE), bias-corrected Chao1 richness estimator, Jackknife estimator of species richness, and the Shannon-Weaver and Simpson diversity indices. The average of the Good's coverages was 0.92 (SD = ± 0.073), even though some insect samples showed low values of the Good's coverage.

Group	Coverage	Sequences	Sobs	Chao	Ace	Jackknife	Shannon	Simpson
J_396	0.970	1386	225	241.078	248.511	266.000	4.800	0.013
J_640	0.815	313	103	156.323	280.599	162.529	3.674	0.068
DS_014	0.973	219	12	15.750	19.920	18.000	0.990	0.493
J_024	0.879	684	151	257.344	284.485	286.167	3.736	0.059
J_025	0.980	248	17	22.000	21.284	22.000	1.977	0.193
J_101	0.986	138	9	9.333	10.947	0.000	1.236	0.397
J_103	0.980	1096	98	106.250	111.599	120.000	2.870	0.162
J_176	0.956	182	24	29.600	38.269	32.000	2.347	0.155
J_177	0.923	287	37	114.000	107.745	143.646	1.830	0.374
J_204_1	0.747	718	319	568.561	607.417	715.769	5.262	0.012
J_299	0.952	544	56	92.111	87.452	89.650	2.448	0.176
J_418	0.986	222	9	12.000	11.607	19.796	0.878	0.614
J_464	0.911	158	23	45.750	52.918	44.862	1.831	0.277
J_475_1	0.955	741	59	117.667	140.021	127.122	1.230	0.634
J_589	0.768	190	69	141.769	216.415	147.865	3.237	0.127
JH4	0.957	235	37	40.462	46.473	47.000	2.370	0.243
DS_023	0.997	353	9	9.000	9.831	0.000	1.237	0.397
DS_024	0.942	1439	163	262.600	278.475	292.087	1.867	0.528
J_335	0.768	492	211	351.022	380.666	397.118	4.938	0.011
J_351	0.895	741	162	258.871	336.902	295.415	4.119	0.035
J_687	0.819	503	160	323.800	467.265	384.770	4.310	0.030
J_691	0.958	1050	138	171.786	183.677	182.154	4.071	0.032
PYS_004	0.937	695	174	195.500	201.070	218.000	4.566	0.021
PYS_001_1	0.948	1253	173	225.000	229.307	240.221	3.212	0.141
DS_003	0.978	178	13	19.000	22.946	32.435	2.070	0.152
J_056	0.842	190	59	113.375	96.308	113.219	3.589	0.038
J_065	0.790	324	110	363.111	341.516	390.695	4.009	0.037
J_156	0.891	552	151	193.143	211.193	211.000	4.272	0.029
J_385	0.928	1090	256	306.508	322.325	335.000	4.917	0.015
J_410	0.917	507	106	163.400	151.306	208.607	3.931	0.039
J_523	0.946	482	53	89.111	111.814	98.648	2.117	0.299
J_570	0.911	830	194	259.878	276.436	273.258	4.612	0.018
DS_115	0.974	548	36	46.111	52.266	50.000	1.770	0.352
DS_F_026	0.982	1299	108	116.724	124.066	131.000	3.036	0.122
J_165_1	0.991	557	18	23.000	22.152	23.000	1.779	0.237

J_593	0.959	587	42	81.429	133.787	84.431	1.062	0.673
JH7	0.917	109	21	26.143	29.431	30.000	2.173	0.172
JH8	0.906	213	76	82.129	86.207	96.000	4.032	0.021
DS_2_032	0.953	472	73	90.769	89.277	95.000	2.852	0.189
J_002	0.973	184	17	18.429	20.579	22.000	1.613	0.309
J_003	0.926	418	84	102.600	109.653	115.000	3.438	0.073
J_049	0.944	443	87	99.000	110.363	112.000	3.662	0.053
J_504	0.939	578	158	170.143	181.252	193.000	4.748	0.010
CH_015	0.964	224	25	34.333	30.586	3239.986	2.085	0.225
DS_3_046	0.529	51	34	68.500	135.579	67.030	3.345	0.027
DS_106	0.914	441	121	141.676	153.329	159.000	4.371	0.016
DS_F_004	0.845	232	64	121.273	119.345	153.656	3.092	0.124
DS_F_005	0.867	240	62	107.091	169.646	117.486	3.353	0.062
DS_F_016	0.876	410	89	168.688	259.238	200.488	3.147	0.134
J_026	0.936	359	49	80.625	106.759	97.068	2.355	0.247
J_030_1	0.898	236	41	96.200	169.965	103.255	2.696	0.112
J_033	0.974	155	11	14.000	19.122	15.000	1.385	0.339
J_035_2	0.853	266	80	141.750	166.611	230.070	3.770	0.044
J_044_1	0.867	467	116	215.526	268.786	265.276	3.787	0.048
J_061	0.955	402	39	56.000	82.913	57.228	1.453	0.538
J_123	0.862	1838	455	764.495	1099.824	881.575	4.499	0.052
J_126	0.833	192	60	130.857	104.576	132.496	3.561	0.039
J_186	0.936	453	108	123.037	131.488	137.000	4.245	0.019
J_197_2	1.000	198	5	5.000	5.000	5.000	0.417	0.820
J_368	0.930	100	17	24.000	22.627	24.000	2.042	0.184
J_425	0.991	583	27	29.000	29.646	32.000	1.788	0.331
J_473	0.766	128	60	84.167	93.731	90.000	3.782	0.027
J_501	0.966	292	36	45.000	44.630	46.000	2.850	0.087
J_551	0.695	105	43	113.857	147.784	115.010	3.003	0.089
J_562	0.647	51	26	56.600	112.758	57.937	2.873	0.068
J_578	0.926	296	39	77.500	143.837	82.840	2.068	0.284
J_585	0.729	207	74	459.000	490.246	1527.959	3.199	0.126
J_642	0.940	420	99	108.091	115.433	124.000	3.913	0.046
J_651	0.926	484	130	148.000	155.758	166.000	4.399	0.018
CH_11	0.972	1408	90	135.882	186.097	139.310	1.626	0.534
DS_016	0.970	535	42	54.000	57.856	58.000	1.513	0.508
DS_072	0.960	351	40	53.000	50.441	54.000	2.396	0.176
DS_073	0.756	398	171	304.029	417.348	360.899	4.611	0.022
DS_089	0.881	648	133	241.370	440.384	263.331	3.553	0.073
DS_2_042	0.983	587	29	40.250	39.343	39.566	1.823	0.264
DS_3_058_1	0.856	250	59	129.000	120.014	153.174	2.677	0.203
DS_F_003	0.987	154	12	12.333	13.233	0.000	1.674	0.265
ex_006	0.952	233	258	322.667	352.240	355.174	3.651	0.089
H_012	0.893	1584	47	72.000	87.915	73.075	2.285	0.292
H_024	0.942	2017	220	294.750	325.540	313.955	3.741	0.072
J_001	0.994	1003	23	26.750	33.199	29.000	1.538	0.360
J_096	0.968	647	79	93.000	93.898	100.000	3.287	0.089
J_132	0.998	578	9	9.000	9.450	0.000	0.601	0.716
J_134	0.985	336	14	15.667	20.167	19.000	0.910	0.587

J_166	0.818	198	60	105.000	196.049	101.621	3.034	0.130
J_167	0.983	363	24	26.500	29.450	30.000	2.033	0.192
J_191_1	0.904	447	87	137.167	238.829	135.768	3.570	0.048
J_212	0.984	577	47	50.000	53.779	56.000	2.770	0.121
J_226	0.988	571	37	38.909	41.202	44.000	1.671	0.439
J_251	0.905	645	104	211.647	204.602	248.913	2.511	0.291
J_278	0.878	645	133	279.714	367.451	390.260	3.089	0.160
J_358	0.827	381	133	190.973	206.403	201.842	4.076	0.048
J_369	0.736	507	252	366.244	443.633	388.847	5.241	0.006
J_402	0.998	5304	169	169.706	173.476	178.000	2.163	0.421
J_421	0.823	215	62	132.300	233.743	144.981	3.289	0.070
J_494	0.683	208	97	216.167	373.758	268.031	3.902	0.047
J_556	0.652	178	82	271.100	514.507	287.032	3.629	0.071
J_576	0.957	235	20	31.250	34.844	30.871	1.565	0.310
J_582	0.831	432	121	226.120	340.022	246.547	3.537	0.099
J_598	0.991	1036	62	63.800	67.391	71.000	2.459	0.206
J_600	0.982	827	58	66.077	69.186	73.000	2.654	0.139
J_655	0.950	282	26	71.500	67.000	60.741	1.402	0.509
J_668	0.970	2385	133	239.500	370.010	261.655	1.444	0.586
J_669	0.971	950	58	92.364	93.627	104.717	1.229	0.596
J_676	0.946	168	16	25.000	34.000	25.000	1.587	0.295
J_718	0.954	694	82	115.067	117.152	526.468	2.497	0.273
J_733	0.802	435	150	276.034	281.534	302.885	4.037	0.069
J_734	0.945	200	27	34.857	48.432	38.000	2.249	0.167
J_754	0.905	601	116	177.385	247.920	188.082	3.227	0.141
JH6	0.896	106	23	30.857	48.983	34.000	2.154	0.223
CH_019	0.905	518	102	171.176	222.375	198.392	3.646	0.054
BGS_01	0.939	749	95	155.882	204.410	171.110	3.196	0.083
BGS_02	0.926	393	61	94.833	101.095	93.457	2.879	0.114
BGS_03	0.915	552	98	154.895	210.281	161.327	3.330	0.082
BGS_04	0.958	600	78	99.429	100.515	103.067	3.384	0.067
BGS_05	0.928	319	47	78.625	118.904	76.271	2.756	0.113
BJA_01	0.894	359	83	122.056	176.982	123.882	3.671	0.045
BJA_02	0.927	558	94	152.571	207.616	166.599	3.761	0.039
BJA_03	0.909	552	95	171.563	223.926	183.251	3.074	0.128
BJA_04	0.928	725	102	184.875	274.528	218.208	3.221	0.095
BJA_05	0.924	512	80	121.167	134.220	121.696	2.988	0.113
BKS_01	0.945	401	44	82.500	107.405	85.473	2.353	0.214
BKS_02	0.955	508	54	75.083	84.619	77.375	2.555	0.162
BKS_03	0.930	213	45	62.500	57.377	65.177	3.362	0.043
BKS_04	0.941	563	75	110.200	116.476	111.459	2.892	0.118
BKS_05	0.939	440	56	99.875	115.982	106.301	2.574	0.158
BSL_01	0.920	286	56	71.813	87.148	79.000	3.092	0.088
BSL_02	0.909	231	39	69.000	94.457	69.890	2.339	0.195
BSL_03	0.889	198	41	87.200	125.204	90.497	2.995	0.071
BSL_04	0.916	371	71	122.667	107.513	142.576	3.365	0.079
BSL_05	0.949	316	46	56.909	60.170	62.000	2.665	0.154
BSS_01	0.935	263	41	58.000	62.500	58.972	2.604	0.148
BSS_02	0.899	385	76	133.000	204.588	140.249	3.361	0.069

BSS_03	0.921	341	63	102.000	92.223	110.989	3.284	0.065
BSS_04	0.922	475	73	120.571	191.943	120.300	3.004	0.108
BSS_05	0.919	356	62	93.231	127.638	93.894	2.956	0.110
DS_021	0.973	783	47	82.000	96.979	85.607	2.028	0.237
DS_038	0.926	243	37	62.500	103.593	58.275	2.753	0.103
DS_043	0.995	610	25	25.500	27.018	0.000	2.278	0.149
DS_044	0.991	641	31	33.500	34.719	37.000	2.402	0.122
DS_052	0.953	403	101	105.171	112.913	120.000	4.125	0.026
DS_3_005	0.973	291	37	40.111	44.360	45.000	3.129	0.053
DS_3_008	0.971	315	59	61.118	63.539	68.000	3.562	0.042
DS_F_011	0.988	972	29	40.000	43.896	41.000	1.332	0.374
DS_F_023	0.864	132	37	56.125	75.213	55.898	2.969	0.082
H_007	0.812	999	359	647.164	802.544	858.188	5.404	0.006
J_031	0.956	405	48	78.600	82.393	132.319	2.932	0.093
J_089	0.910	133	29	36.333	57.175	41.000	2.719	0.090
J_118	0.885	209	64	80.235	90.288	88.000	3.772	0.027
J_155	0.963	777	62	102.600	99.143	127.740	2.403	0.150
J_163	0.992	964	33	36.500	41.279	41.000	2.124	0.166
J_209	0.975	1130	72	90.000	107.476	100.000	1.928	0.353
J_228	0.985	805	31	44.200	42.157	45.912	1.017	0.629
J_239	0.962	664	59	79.000	88.245	84.000	1.840	0.398
J_254	0.914	314	57	82.071	89.856	84.550	2.494	0.251
J_286	0.789	454	145	335.000	574.958	417.502	3.720	0.096
J_344	0.930	214	26	52.250	71.264	53.137	1.911	0.239
J_450	0.963	515	40	57.100	65.983	59.000	1.919	0.273
J_571	0.961	255	39	44.625	46.421	49.000	2.853	0.107
J_581	0.976	330	22	27.600	29.165	30.000	1.569	0.360
J_595	0.852	230	61	117.100	179.844	126.681	3.315	0.063
J_625	0.887	257	39	140.500	197.101	120.410	1.488	0.517
J_658	0.949	294	41	51.500	52.148	56.000	2.366	0.187
J_695	0.977	1357	125	144.375	149.821	156.000	3.756	0.050
J_717	0.837	1187	382	642.014	662.697	783.721	5.353	0.009
JH5	0.755	102	39	72.333	84.851	69.735	2.768	0.160
PYS_002	0.883	349	66	157.111	206.658	173.836	2.410	0.267
DS_013	0.995	410	14	14.250	14.683	0.000	1.013	0.585
DS_017	0.933	990	206	248.900	268.462	272.000	4.667	0.018
DS_018	0.984	1217	53	80.143	76.490	91.072	1.859	0.313
DS_056	0.999	1017	18	18.000	18.494	0.000	1.000	0.601
DS_060	0.993	610	27	27.750	29.950	31.000	2.071	0.216
DS_065	0.851	121	32	51.125	81.310	50.930	2.506	0.154
DS_3_075	0.953	214	27	36.000	63.128	37.000	2.654	0.090
J_010	0.990	1741	54	69.111	68.041	71.000	1.478	0.440
J_018	0.985	1085	58	66.000	73.329	74.000	2.157	0.290
J_036	0.994	1625	37	49.000	43.142	55.358	1.271	0.523
J_050	0.763	287	118	231.900	300.047	284.192	4.297	0.021
J_071	0.925	321	49	76.600	84.871	75.678	2.675	0.131
J_072	0.998	1865	29	29.500	30.632	0.000	1.585	0.365
J_080	0.792	583	227	428.667	399.806	524.316	5.021	0.008
J_090	0.897	253	74	93.118	98.126	100.000	3.925	0.023

J_104	0.967	520	51	60.067	65.418	68.000	2.370	0.178
J_111	0.981	631	46	52.600	54.231	58.000	2.436	0.158
J_114	0.981	513	33	38.000	40.772	43.000	2.006	0.265
J_115	0.991	804	29	32.500	34.874	36.000	1.760	0.315
J_121	0.955	448	54	69.833	74.895	74.000	3.031	0.079
J_124	0.985	845	50	63.000	60.839	63.000	2.708	0.111
J_133	0.974	427	33	39.111	46.808	44.000	2.211	0.192
J_172	0.975	592	43	58.000	70.554	58.232	2.460	0.154
J_175	0.960	505	49	64.833	71.913	69.000	2.474	0.149
J_178	0.894	379	95	140.882	141.526	1402.618	3.878	0.035
J_179_1	0.991	746	31	38.000	35.831	38.000	2.059	0.251
J_184	0.750	132	65	91.400	100.275	98.042	3.934	0.018
J_185	0.997	581	9	9.333	12.030	0.000	0.893	0.539
J_194	0.868	197	61	81.313	93.878	87.000	3.646	0.034
J_195	0.977	874	41	68.143	96.531	78.042	1.566	0.371
J_199	0.888	338	83	118.150	173.349	122.680	3.684	0.041
J_277	0.935	153	33	37.500	39.806	43.000	2.933	0.075
J_317	0.948	269	57	63.067	66.555	71.000	3.554	0.040
J_343	0.975	749	37	56.000	64.469	56.476	1.693	0.280
J_463	0.938	497	86	108.143	139.276	117.000	3.597	0.053
J_529	0.794	519	178	355.219	601.938	373.436	4.454	0.023
J_573	0.892	803	153	286.607	438.522	326.019	3.103	0.198
J_633	0.982	1027	44	59.545	88.354	63.000	1.134	0.580
J_673	0.881	286	59	115.100	178.250	121.265	3.069	0.078
J_698_2	0.850	160	39	108.000	157.531	140.290	2.773	0.108
J_706	0.898	187	33	57.429	57.174	58.232	2.162	0.229
J_728	0.982	2390	104	164.200	152.878	200.872	2.070	0.300
J_737	0.967	670	54	79.667	75.376	85.644	2.462	0.161
J_744	0.976	415	37	42.000	43.773	47.000	2.175	0.251
J_751	0.850	266	79	139.000	175.383	154.031	3.825	0.030
J_752	0.860	444	128	193.207	215.139	195.665	4.138	0.031
JH11	0.839	149	46	73.600	67.191	81.453	2.684	0.212
J_693	0.906	319	55	117.143	98.972	669.005	2.509	0.206
DS_041	0.866	449	140	205.556	211.660	213.068	4.528	0.013
DS_3_014	0.985	206	10	11.500	12.331	13.000	1.151	0.430
J_240	0.933	614	79	137.571	178.701	148.656	2.594	0.197
J_462	0.825	343	94	220.429	339.565	246.481	3.455	0.072
J_548	0.808	266	83	168.000	247.961	183.119	3.469	0.069
J_753	0.851	670	174	311.500	547.581	341.679	3.909	0.063
JH9	0.938	81	17	18.667	23.912	22.000	2.356	0.121
J_099	0.905	464	86	145.125	193.804	174.847	3.243	0.082
J_320	0.908	797	130	235.120	358.413	257.383	3.154	0.121
J_324	0.932	558	73	123.214	170.281	121.742	2.652	0.155
JH1	0.918	1280	270	356.667	393.531	378.694	4.771	0.016
JH2	0.947	1846	345	385.624	429.246	443.000	4.934	0.015
JH10	0.825	114	37	64.143	67.398	63.769	2.984	0.084
PYS_005	0.935	340	71	86.400	87.773	93.000	3.689	0.038
DS_002	0.977	306	17	24.000	22.759	24.000	0.945	0.630
DS_005	0.986	886	34	43.429	46.386	46.000	1.581	0.392

DS_006	0.989	645	22	27.250	29.763	29.000	1.504	0.384
DS_009	0.978	319	18	25.000	33.267	25.000	1.513	0.323
DS_022	0.984	368	24	27.000	27.675	30.000	1.463	0.467
DS_025	0.960	597	53	92.429	99.970	96.718	2.449	0.158
DS_048	0.978	279	28	31.750	33.110	34.000	2.948	0.058
DS_070	0.870	215	67	90.625	101.672	95.222	3.736	0.033
DS_078	0.995	380	22	22.250	22.916	0.000	2.491	0.108
DS_2_044	0.994	704	29	29.857	30.843	33.000	2.043	0.217
DS_2_048	0.995	571	47	47.167	48.137	0.000	2.905	0.091
DS_2_049	0.704	125	55	150.143	236.446	160.260	3.504	0.044
DS_2_050	0.968	154	16	18.500	20.820	21.000	1.833	0.234
DS_3_011	0.953	191	29	36.200	37.016	38.000	2.279	0.236
DS_3_018	0.913	528	148	168.294	187.218	194.000	4.492	0.016
DS_3_034	0.961	129	27	28.250	30.140	32.000	2.883	0.075
DS_3_038	0.970	296	20	38.000	31.404	52.835	1.719	0.260
DS_F_006	0.984	485	50	53.111	55.005	58.000	3.165	0.075
DS_F_013	0.934	487	85	114.176	120.398	118.241	3.289	0.110
DS_F_020	0.950	725	153	162.000	172.569	189.000	3.568	0.117
J_005	0.970	430	70	75.571	77.162	83.000	3.539	0.055
J_023	0.993	437	36	36.250	37.456	0.000	2.471	0.175
J_038	1.000	359	32	32.000	32.000	32.000	2.502	0.167
J_082	0.966	760	70	90.313	101.305	96.000	2.899	0.102
J_097	0.942	325	41	58.100	65.611	60.000	2.063	0.306
J_139	0.899	218	45	68.100	93.640	70.048	2.281	0.303
J_198	0.986	422	27	28.667	31.884	33.000	1.691	0.320
J_244	0.936	389	46	79.333	129.819	76.682	2.459	0.156
J_353	0.723	336	163	285.229	310.207	319.334	4.808	0.008
J_357_1	0.950	401	60	73.571	81.328	80.000	3.154	0.084
J_376	0.840	2318	695	1119.006	1250.867	1311.194	5.177	0.047
J_388	0.963	461	43	53.462	81.579	60.000	2.382	0.157
J_391	0.809	236	77	138.875	246.901	140.935	3.658	0.043
J_407	0.948	842	76	135.125	225.117	147.769	1.315	0.630
J_417	0.786	504	193	345.053	522.072	377.197	4.783	0.012
J_453	0.961	336	62	67.200	70.172	75.000	3.609	0.038
J_527	0.939	1102	162	247.038	241.283	278.792	4.110	0.029
J_563	0.877	560	137	254.300	226.371	498.037	3.803	0.077
J_574	0.995	437	48	48.053	48.941	0.000	3.153	0.077
J_624	0.985	757	37	46.167	48.288	48.000	2.319	0.163
J_630	0.981	209	28	28.667	30.121	32.000	2.649	0.105
J_700	0.968	785	98	107.677	117.016	123.000	3.110	0.118
J_705	0.997	380	18	18.000	18.459	0.000	1.771	0.271
J_745	0.901	734	144	258.261	355.267	278.782	3.825	0.070
J_746	0.936	500	52	151.200	284.607	217.524	2.408	0.168
J_747	0.895	592	133	194.000	267.474	198.715	3.663	0.093
J_748	0.871	743	210	324.000	421.804	364.267	4.795	0.012
J_749	0.849	436	136	205.194	279.658	217.016	4.197	0.034
J_750	0.846	848	246	458.875	581.948	520.865	4.762	0.018
DA_1	0.879	2670	671	1034.657	1109.040	1181.385	5.298	0.027
DA_2	0.893	3404	835	1179.197	1268.863	1348.580	5.615	0.016

DL_1	0.896	2590	642	833.734	955.342	915.092	5.334	0.021
DS_015	0.901	414	92	166.545	184.310	518.812	3.984	0.023
DS_049	0.975	1088	79	104.071	108.506	107.028	2.909	0.111
DS_3_058_2	0.934	152	16	31.000	46.000	28.558	1.588	0.287
J_048	0.821	201	64	116.500	171.336	121.955	3.309	0.096
J_074	0.997	746	22	22.143	23.367	0.000	2.012	0.188
J_075	0.915	294	81	92.538	101.327	106.000	3.907	0.029
J_094	0.982	725	35	46.143	62.702	48.000	2.062	0.227
J_141	0.977	437	44	49.000	50.662	54.000	2.808	0.109
J_190	0.977	603	43	50.000	56.597	57.000	2.057	0.245
J_230	0.831	178	45	99.375	174.320	101.143	2.304	0.286
J_279	0.950	321	27	44.143	49.643	43.845	0.809	0.750
J_306	0.972	506	36	54.200	68.796	55.822	2.293	0.167
J_395	0.881	202	53	80.600	79.931	82.142	3.137	0.104
J_403	0.908	303	53	95.000	135.962	111.572	2.978	0.082
J_415_1	0.939	625	96	139.938	166.512	145.722	3.664	0.045
J_415_2	0.889	530	123	197.391	206.329	224.776	3.934	0.037
J_461	0.975	713	46	58.750	66.999	64.000	2.228	0.176
J_466	0.978	313	31	33.100	35.067	38.000	2.080	0.234
J_481	0.983	419	19	22.000	32.610	26.000	0.691	0.768
J_558	0.959	296	43	48.077	51.856	55.000	2.542	0.190
J_580	0.989	356	19	20.200	23.028	23.000	1.859	0.247
J_701	0.993	2870	100	110.500	114.356	121.000	2.520	0.172
J_722	0.914	187	34	54.000	55.273	736.373	2.112	0.307
JH3	0.934	667	183	199.893	208.783	227.000	4.690	0.019
Mean	0.920	571.718	84.334	130.427	158.830	169.501	2.865	0.178
S.D.	0.073	544.433	97.657	152.292	182.705	277.426	1.073	0.167

**Supplementary Table S3.** Oxygen requirements of different genera present in insect gut microbiota. A, aerobes; An, anaerobes; F, facultative anaerobes; M, microaerobes.

Taxon	Oxygen requirement	References	Taxon	Oxygen requirement	References	Taxon	Oxygen requirement	References
<i>Abiotrophia</i>	F	(1)	<i>Acetobacter</i>	A	(2)	<i>Acetobacterium</i>	An	(3)
<i>Acholeplasma</i>	F	(4)	<i>Acidisphaera</i>	A	(5)	<i>Acidovorax</i>	A	(6)
<i>Acinetobacter</i>	A	(7)	<i>Actinobacillus</i>	A	(8)	<i>Actinomyces</i>	F	(9)
<i>Actinomycetospora</i>	A	(10)	<i>Aeromicrobium</i>	A	(11)	<i>Aeromonas</i>	F	(12)
<i>Afipia</i>	A	(13)	<i>Agrobacterium</i>	A	(14)	<i>Alistipes</i>	An	(15)
<i>Amaricoccus</i>	A	(16)	<i>Aminobacter</i>	A	(17)	<i>Amphibacillus</i>	F	(18)
<i>Anabaena</i>	A	(19)	<i>Anaeroarcus</i>	An	(20)	<i>Anaerofilum</i>	An	(21)
<i>Anaerotruncus</i>	An	(22)	<i>Anoxybacillus</i>	An	(23)	<i>Aquabacterium</i>	M	(24)
<i>Aquicella</i>	A	(25)	<i>Aquifex</i>	M	(26)	<i>Arcicella</i>	A	(27)
<i>Arcobacter</i>	M	(28)	<i>Arsenophonus</i>	A	(29)	<i>Arthrobacter</i>	A	(30)
<i>Asaia</i>	A	(31)	<i>Aurantimonas</i>	A	(32)	<i>Azoarcus</i>	An	(33)
<i>Azovibrio</i>	M	(34)	<i>Bacillus</i>	A	(35)	<i>Bacteroides</i>	An	(36)
<i>Barnesiella</i>	An	(37)	<i>Bartonella</i>	A	(38)	<i>Bdellovibrio</i>	A	(39)
<i>Bergeyella</i>	A	(40)	<i>Bifidobacterium</i>	An	(41)	<i>Blastococcus</i>	A	(42)
<i>Blastomonas</i>	A	(43)	<i>Bosea</i>	A	(44)	<i>Brachybacterium</i>	A	(45)
<i>Brachymonas</i>	A	(46)	<i>Bradyrhizobium</i>	A	(47)	<i>Brenneria</i>	F	(48)
<i>Brevibacterium</i>	A	(49)	<i>Brevundimonas</i>	A	(50)	<i>Burkholderia</i>	A	(51)
<i>Caloramator</i>	An	(52)	<i>Carnobacterium</i>	F	(53)	<i>Catabacter</i>	An	(54)
<i>Caulobacter</i>	A	(55)	<i>Cedecea</i>	A	(56)	<i>Cellulomonas</i>	A	(57)
<i>Cellulosimicrobium</i>	A	(58)	<i>Chelatococcus</i>	A	(59)	<i>Chitinophaga</i>	A	(60)
<i>Chroococcidiopsis</i>	A	(61)	<i>Chryseobacterium</i>	A	(62)	<i>Citrobacter</i>	A	(63)
<i>Citromicrobium</i>	A	(64)	<i>Cloacibacterium</i>	A	(65)	<i>Clostridium</i>	An	(66)

<i>Cohnella</i>	A	(67)	<i>Comamonas</i>	A	(68)	<i>Coprobacillus</i>	An	(69)
<i>Corynebacterium</i>	A	(70)	<i>Cronobacter</i>	F	(71)	<i>Cryptosporangium</i>	A	(72)
<i>Cupriavidus</i>	A	(73)	<i>Curtobacterium</i>	A	(74)	<i>Curvibacter</i>	A	(75)
<i>Cytophaga</i>	F	(76)	<i>Deinococcus</i>	A	(77)	<i>Delftia</i>	A	(78)
<i>Dendrosorobacter</i>	An	(79)	<i>Denitratisoma</i>	An	(80)	<i>Dermacoccus</i>	A	(81)
<i>Desemzia</i>	M	(82)	<i>Desulfarculus</i>	An	(83)	<i>Desulfobacterium</i>	An	(84)
<i>Desulfobulbus</i>	An	(85)	<i>Desulfomicrobium</i>	An	(86)	<i>Desulforegula</i>	An	(87)
<i>Desulfosarcina</i>	An	(88)	<i>Desulfosporosinus</i>	An	(89)	<i>Desulfotomaculum</i>	An	(90)
<i>Desulfovibrio</i>	An	(91)	<i>Desulfurispora</i>	An	(92)	<i>Devosia</i>	A	(93)
<i>Dietzia</i>	A	(94)	<i>Dyella</i>	A	(95)	<i>Dysgonomonas</i>	F	(96)
<i>Elizabethkingia</i>	M	(97)	<i>Empedobacter</i>	A	(40)	<i>Enhydrobacter</i>	F	(98)
<i>Enterobacter</i>	F	(99)	<i>Enterococcus</i>	F	(100)	<i>Erwinia</i>	F	(101)
<i>Erysipelothrix</i>	A	(102)	<i>Escherichia</i>	F	(103)	<i>Eubacterium</i>	An	(104)
<i>Exiguobacterium</i>	A	(105)	<i>Faecalibacterium</i>	An	(106)	<i>Flavisolibacter</i>	A	(107)
<i>Flavobacterium</i>	A	(108)	<i>Flexibacter</i>	A	(109)	<i>Flexithrix</i>	A	(110)
<i>Frateuria</i>	A	(111)	<i>Friedmanniella</i>	A	(112)	<i>Frigoribacterium</i>	A	(113)
<i>Fusibacter</i>	An	(114)	<i>Fusobacterium</i>	An	(115)	<i>Gelria</i>	An	(116)
<i>Gemella</i>	F	(117)	<i>Geobacillus</i>	A	(118)	<i>Geobacter</i>	An	(119)
<i>Geodermatophilus</i>	A	(120)	<i>Gluconobacter</i>	A	(121)	<i>Gordonia</i>	A	(122)
<i>Granulicatella</i>	F	(123)	<i>Haemophilus</i>	F	(124)	<i>Hafnia</i>	F	(125)
<i>Halomonas</i>	A	(126)	<i>Helicobacter</i>	M	(127)	<i>Herbaspirillum</i>	A	(128)
<i>Humicoccus</i>	A	(129)	<i>Hydrogenoanaerobacterium</i>	An	(130)	<i>Hymenobacter</i>	A	(131)
<i>Hyphomicrobium</i>	A	(132)	<i>Ignatzschineria</i>	A	(133)	<i>Ignavigranum</i>	F	(134)
<i>Inquilinus</i>	A	(135)	<i>Isobaculum</i>	F	(136)	<i>Janibacter</i>	A	(137)
<i>Janthinobacterium</i>	A	(138)	<i>Kineococcus</i>	A	(139)	<i>Kineosporia</i>	A	(140)
<i>Kingella</i>	A	(141)	<i>Klebsiella</i>	F	(142)	<i>Kocuria</i>	A	(143)
<i>Kurthia</i>	A	(144)	<i>Labeleda</i>	A	(145)	<i>Labrys</i>	A	(146)

<i>Lactobacillus</i>	F	(147)	<i>Lactococcus</i>	A	(148)	<i>Lechevalieria</i>	A	(149)
<i>Leclercia</i>	A	(150)	<i>Legionella</i>	A	(151)	<i>Leifsonia</i>	A	(152)
<i>Lentzea</i>	A	(153)	<i>Leptolyngbya</i>	A	(154)	<i>Leptothrix</i>	A	(155)
<i>Leptotrichia</i>	An	(156)	<i>Leucobacter</i>	A	(157)	<i>Leuconostoc</i>	F	(158)
<i>Lutispora</i>	An	(159)	<i>Lysinibacillus</i>	A	(160)	<i>Macrococcus</i>	F	(161)
<i>Marmoricola</i>	A	(162)	<i>Massilia</i>	A	(163)	<i>Megasphaera</i>	An	(164)
<i>Mesorhizobium</i>	A	(165)	<i>Methylobacterium</i>	A	(166)	<i>Methylocaldum</i>	A	(167)
<i>Methylomonas</i>	A	(168)	<i>Methylophilus</i>	A	(169)	<i>Microbacterium</i>	A	(170)
<i>Micrococcus</i>	A	(171)	<i>Microlunatus</i>	A	(172)	<i>Mitsuaria</i>	A	(173)
<i>Moellerella</i>	A	(174)	<i>Moraxella</i>	A	(175)	<i>Morganella</i>	A	(176)
<i>Mycobacterium</i>	A	(177)	<i>Mycoplasma</i>	F	(178)	<i>Myroides</i>	A	(179)
<i>Natronocella</i>	An	(180)	<i>Neisseria</i>	A	(181)	<i>Nitratiruptor</i>	F	(182)
<i>Nocardoides</i>	A	(183)	<i>Nocardiopsis</i>	A	(184)	<i>Novosphingobium</i>	A	(185)
<i>Obesumbacterium</i>	A	(186)	<i>Oceanimonas</i>	A	(187)	<i>Ochrobactrum</i>	A	(188)
<i>Odoribacter</i>	An	(189)	<i>Oribacterium</i>	An	(190)	<i>Oscillospira</i>	An	(191)
<i>Oxalobacter</i>	An	(192)	<i>Paenibacillus</i>	F	(193)	<i>Paludibacter</i>	An	(194)
<i>Pandoraea</i>	A	(195)	<i>Pantoea</i>	F	(196)	<i>Parabacteroides</i>	An	(197)
<i>Paralactobacillus</i>	A	(198)	<i>Patulibacter</i>	A	(199)	<i>Pectobacterium</i>	F	(200)
<i>Pedobacter</i>	A	(201)	<i>Pedomicrobium</i>	A	(202)	<i>Pelomonas</i>	A	(203)
<i>Pelotomaculum</i>	An	(204)	<i>Peptoniphilus</i>	An	(205)	<i>Peptostreptococcus</i>	An	(206)
<i>Petrimonas</i>	An	(207)	<i>Petrobacter</i>	A	(208)	<i>Photorhabdus</i>	F	(209)
<i>Planifilum</i>	A	(210)	<i>Pleurocapsa</i>	A	(211)	<i>Polynucleobacter</i>	A	(212)
<i>Ponticoccus</i>	A	(213)	<i>Porphyromonas</i>	An	(214)	<i>Prevotella</i>	An	(215)
<i>Propionibacterium</i>	An	(216)	<i>Propionivibrio</i>	An	(217)	<i>Prosthecomicrobium</i>	A	(218)
<i>Proteus</i>	F	(219)	<i>Providencia</i>	A	(220)	<i>Pseudoclavibacter</i>	A	(221)
<i>Pseudomonas</i>	A	(222)	<i>Pseudonocardia</i>	A	(223)	<i>Psychrobacter</i>	A	(224)
<i>Quadrisiaphaera</i>	A	(225)	<i>Rahnella</i>	A	(226)	<i>Ralstonia</i>	A	(227)

<i>Rathayibacter</i>	A	(228)	<i>Rhizobium</i>	A	(229)	<i>Rhodoblastus</i>	An	(230)
<i>Rhodococcus</i>	A	(231)	<i>Rhodoplanes</i>	F	(232)	<i>Rhodopseudomonas</i>	A	(233)
<i>Rhodospirillum</i>	F	(234)	<i>Rickettsia</i>	A	(235)	<i>Roseburia</i>	An	(236)
<i>Rothia</i>	A	(237)	<i>Rubellimicrobium</i>	A	(238)	<i>Rubrobacter</i>	A	(239)
<i>Ruminococcus</i>	An	(240)	<i>Saccharibacter</i>	A	(241)	<i>Saccharopolyspora</i>	A	(242)
<i>Salmonella</i>	F	(243)	<i>Sanguibacter</i>	F	(244)	<i>Saprospira</i>	A	(245)
<i>Schlegelella</i>	A	(246)	<i>Sebaldelta</i>	An	(247)	<i>Sedimentibacter</i>	An	(248)
<i>Segetibacter</i>	A	(249)	<i>Sejongia</i>	A	(250)	<i>Serratia</i>	F	(251)
<i>Shewanella</i>	F	(252)	<i>Sodalis</i>	M	(253)	<i>Solimonas</i>	A	(254)
<i>Solirubrobacter</i>	A	(255)	<i>Sorangium</i>	A	(256)	<i>Sphingobacterium</i>	A	(257)
<i>Sphingobium</i>	A	(185)	<i>Sphingomonas</i>	A	(258)	<i>Spirochaeta</i>	An	(259)
<i>Spiroplasma</i>	F	(260)	<i>Spirosoma</i>	A	(261)	<i>Sporichthya</i>	A	(262)
<i>Sporobacter</i>	An	(263)	<i>Sporomusa</i>	An	(264)	<i>Sporosarcina</i>	A	(265)
<i>Staphylococcus</i>	F	(266)	<i>Stenotrophomonas</i>	A	(267)	<i>Streptococcus</i>	F	(268)
<i>Streptomyces</i>	A	(269)	<i>Succinispira</i>	An	(270)	<i>Sulfurospirillum</i>	M	(271)
<i>Sympytonemopsis</i>	A	(272)	<i>Symploca</i>	F	(273)	<i>Synechococcus</i>	A	(274)
<i>Syntrophomonas</i>	An	(275)	<i>Telmatospirillum</i>	F	(276)	<i>Tepidimicrobium</i>	An	(277)
<i>Terrimonas</i>	A	(278)	<i>Thauera</i>	An	(279)	<i>Thermaanaerobivrio</i>	An	(280)
<i>Thermicanus</i>	M	(281)	<i>Thermincola</i>	An	(282)	<i>Thermoanaerobacter</i>	An	(283)
<i>Thermodesulfobium</i>	An	(284)	<i>Thermomonas</i>	A	(285)	<i>Thioalkalivibrio</i>	F	(286)
<i>Thiohalocapsa</i>	An	(287)	<i>Thiothrix</i>	A	(288)	<i>Treponema</i>	An	(289)
<i>Tsukamurella</i>	A	(290)	<i>Vagococcus</i>	F	(291)	<i>Variovorax</i>	A	(292)
<i>Veillonella</i>	An	(293)	<i>Weissella</i>	F	(294)	<i>Williamsia</i>	A	(295)
<i>Wolbachia</i>	A	(296)	<i>Xanthomonas</i>	A	(297)	<i>Yersinia</i>	F	(298)
<i>Zoogloea</i>	F	(299)	<i>Zooshikella</i>	A	(300)	<i>Zymobacter</i>	F	(301)

**Supplementary Table S4.** Detailed comparisons of bacterial community among the factors: environmental habit, diet, developmental stage, and host phylogeny. The classified groups: fungivore and no-feed (according to diet type) and the insect orders containing <5 samples (phylogenetic position of insect hosts), were not included for the statistical analyses due to low sampling depth. Significant at the  $P \leq 0.05$  alpha level.

Comparison			Dissimilarity in community membership		Jclass calculator										Thetayc calculator									
			Dissimilarity in community structure		AMOVA			ANOSIM			UniFrac-unweighted		UniFrac-weighted		AMOVA			ANOSIM			UniFrac-unweighted		UniFrac-weighted	
			Jaccard	Thetayc	Braycurtis	Fs	R-value	P-value	UW Score	UWSig	UW Score	UWSig	Fs	P-value	R-value	P-value	UW Score	UWSig	UW Score	UWSig				
Environmental Niche	Aquatic	Terrestrial	0.997	0.974	0.988	1.055	0.013	0.044	0.290	1.000	<0.001	0.994	<0.001	1.322	0.020	0.045	0.258	0.994	<0.001	0.495	<0.001			
Development stage	Larva	Adult	0.984	0.850	0.905	1.146	<0.001	-0.039	0.880	0.998	<0.001	0.988	<0.001	1.615	<0.001	-0.039	0.902	0.961	<0.001	0.450	<0.001			
Diet	Total groups		-	-	-	1.056	<0.001	-0.025	0.807	0.997	<0.001	-	-	1.385	<0.001	-0.031	0.867	0.959	<0.001	-	-			
Carnivore	Herbivore	0.988	0.736	0.887	1.091	0.001	-	-	-	-	0.988	<0.001	1.670	<0.001	-	-	-	-	0.894	<0.001				
Carnivore	Omnivore	0.986	0.735	0.894	1.038	0.017	-	-	-	-	0.991	<0.001	1.116	0.161	-	-	-	-	0.905	<0.001				
Carnivore	Scavenger	0.993	0.917	0.937	1.010	0.230	-	-	-	-	0.993	<0.001	1.184	0.066	-	-	-	-	0.963	<0.001				
Herbivore	Omnivore	0.988	0.832	0.943	1.070	0.010	-	-	-	-	0.992	<0.001	1.369	0.006	-	-	-	-	0.950	<0.001				
Herbivore	Scavenger	0.994	0.927	0.968	1.030	0.095	-	-	-	-	0.993	<0.001	1.285	0.023	-	-	-	-	0.975	<0.001				
Omnivore	Scavenger	0.990	0.921	0.942	1.024	0.091	-	-	-	-	0.994	<0.001	1.187	0.028	-	-	-	-	0.972	<0.001				
Phylogenetic type	Total groups		-	-	-	1.130	<0.001	0.082	<0.001	0.996	<0.001	-	-	1.727	<0.001	0.088	<0.001	0.931	<0.001	-	-			
	Blattaria	Coleoptera	0.997	0.995	0.992	1.069	0.007	0.196	0.078	-	-	1.000	<0.001	1.396	0.001	0.178	0.094	-	-	0.998	<0.001			
	Blattaria	Dermoptera	0.996	0.983	0.976	1.093	0.010	0.564	0.001	-	-	1.000	0.002	1.307	0.020	0.507	0.001	-	-	0.983	<0.001			
	Blattaria	Diptera	0.999	1.000	0.998	1.065	0.005	0.406	<0.001	-	-	0.964	<0.001	1.446	0.008	0.412	<0.001	-	-	0.999	<0.001			
	Blattaria	Ephemeroptera	0.990	0.996	0.987	1.147	0.003	0.561	0.001	-	-	1.000	0.002	1.435	0.012	0.515	<0.001	-	-	0.998	<0.001			
	Blattaria	Hemiptera	0.999	0.996	0.997	1.063	0.004	0.259	0.016	-	-	1.000	<0.001	1.473	0.012	0.258	0.020	-	-	0.995	<0.001			
	Blattaria	Hymenoptera	0.997	0.995	0.993	1.175	0.003	0.422	<0.001	-	-	1.000	<0.001	2.150	0.001	0.399	0.001	-	-	0.996	<0.001			
	Blattaria	Lepidoptera	0.998	0.996	0.996	1.086	0.002	0.410	<0.001	-	-	1.000	<0.001	1.461	0.001	0.394	<0.001	-	-	0.997	<0.001			
	Blattaria	Mantodea	0.999	0.998	0.995	1.037	0.001	0.400	0.018	-	-	1.000	<0.001	1.261	0.005	0.360	0.011	-	-	0.999	<0.001			
	Blattaria	Megaloptera	0.997	0.998	0.993	1.080	0.023	0.539	0.004	-	-	1.000	<0.001	1.620	0.009	0.661	0.001	-	-	0.999	<0.001			
	Blattaria	Neuroptera	0.987	0.991	0.986	1.082	0.001	0.484	0.002	-	-	1.000	<0.001	1.261	0.003	0.395	0.002	-	-	0.996	<0.001			
	Blattaria	Odonata	0.999	0.999	0.997	1.042	<0.001	0.254	0.002	-	-	1.000	<0.001	1.331	0.010	0.247	0.007	-	-	0.999	<0.001			
	Blattaria	Orthoptera	0.995	0.998	0.994	1.071	0.005	0.436	<0.001	-	-	1.000	<0.001	1.416	0.003	0.434	0.003	-	-	0.999	<0.001			
	Coleoptera	Dermoptera	0.985	0.930	0.953	1.078	0.002	-0.052	0.668	-	-	0.996	<0.001	1.180	0.032	-0.051	0.668	-	-	0.981	<0.001			
	Coleoptera	Diptera	0.993	0.924	0.929	1.045	0.026	0.025	0.228	-	-	0.957	<0.001	1.310	0.004	0.013	0.332	-	-	0.950	<0.001			
	Coleoptera	Ephemeroptera	0.992	0.971	0.914	1.068	0.026	-0.218	0.975	-	-	0.988	<0.001	1.120	0.087	-0.185	0.937	-	-	0.964	<0.001			
	Coleoptera	Hemiptera	0.989	0.962	0.920	1.069	0.002	-0.005	0.569	-	-	0.992	<0.001	1.503	<0.001	-0.007	0.637	-	-	0.944	<0.001			
	Coleoptera	Hymenoptera	0.987	0.912	0.899	1.464	<0.001	0.124	<0.001	-	-	0.989	<0.001	4.051	<0.001	0.136	<0.001	-	-	0.945	<0.001			
	Coleoptera	Lepidoptera	0.986	0.930	0.875	1.036	0.050	0.037	0.004	-	-	0.988	<0.001	1.139	0.103	0.035	0.005	-	-	0.897	<0.001			
	Coleoptera	Mantodea	0.995	0.944	0.950	1.029	0.095	0.059	0.301	-	-	0.997	<0.001	1.043	0.233	0.034	0.369	-	-	0.974	<0.001			
	Coleoptera	Megaloptera	0.989	0.924	0.948	1.073	0.010	-0.058	0.666	-	-	0.995	<0.001	1.535	0.003	-0.067	0.713	-	-	0.976	<0.001			
	Coleoptera	Neuroptera	0.992	0.906	0.933	0.986	0.725	-0.153	0.903	-	-	0.990	<0.001	0.876	0.948	-0.126	0.855	-	-	0.954	<0.001			
	Coleoptera	Odonata	0.993	0.913	0.934	1.052	0.011	0.072	0.183	-	-	0.996	<0.001	1.019	0.404	0.045	0.271	-	-	0.929	<0.001			

Coleoptera	Orthoptera	0.988	0.846	0.913	1.092	<0.001	-0.001	0.474	-	-	0.996	<0.001	1.161	0.046	-0.012	0.591	-	-	0.914	<0.001
Dermoptera	Diptera	0.995	0.961	0.971	1.090	<0.001	-0.031	0.591	-	-	0.963	<0.001	1.266	0.022	-0.018	0.558	-	-	0.993	<0.001
Dermoptera	Ephemeroptera	0.973	0.984	0.934	1.091	0.008	0.095	0.101	-	-	0.995	<0.001	1.248	0.026	0.119	0.070	-	-	0.985	<0.001
Dermoptera	Hemiptera	0.992	0.981	0.967	1.088	0.003	-0.130	0.901	-	-	0.996	<0.001	1.329	0.026	-0.120	0.903	-	-	0.987	<0.001
Dermoptera	Hymenoptera	0.984	0.941	0.956	1.203	<0.001	0.070	0.229	-	-	0.996	<0.001	2.178	0.003	0.094	0.159	-	-	0.987	<0.001
Dermoptera	Lepidoptera	0.989	0.965	0.962	1.090	0.001	0.011	0.447	-	-	0.996	<0.001	1.279	0.023	0.003	0.477	-	-	0.981	<0.001
Dermoptera	Mantodea	0.994	0.926	0.956	1.058	0.027	0.272	0.016	-	-	0.997	<0.001	1.046	0.321	0.226	0.022	-	-	0.947	<0.001
Dermoptera	Megaloptera	0.977	0.940	0.948	1.075	0.028	0.234	0.026	-	-	0.996	<0.001	1.465	0.002	0.324	0.002	-	-	0.985	<0.001
Dermoptera	Neuroptera	0.953	0.950	0.922	1.032	0.116	0.041	0.243	-	-	0.995	<0.001	1.089	0.081	0.072	0.215	-	-	0.988	<0.001
Dermoptera	Odonata	0.994	0.927	0.941	1.080	0.001	0.075	0.148	-	-	0.997	<0.001	1.072	0.218	0.051	0.250	-	-	0.961	<0.001
Dermoptera	Orthoptera	0.987	0.928	0.928	1.074	0.001	-0.008	0.524	-	-	0.997	<0.001	1.009	0.438	-0.035	0.622	-	-	0.946	<0.001
Diptera	Ephemeroptera	0.997	0.996	0.969	1.146	<0.001	-0.152	0.926	-	-	0.961	<0.001	1.396	0.017	-0.080	0.787	-	-	0.993	<0.001
Diptera	Hemiptera	0.996	0.991	0.961	1.064	0.001	0.038	0.106	-	-	0.960	<0.001	1.744	<0.001	0.054	0.047	-	-	0.974	<0.001
Diptera	Hymenoptera	0.991	0.785	0.916	1.402	<0.001	0.219	<0.001	-	-	0.957	<0.001	3.270	<0.001	0.212	<0.001	-	-	0.936	<0.001
Diptera	Lepidoptera	0.992	0.862	0.892	1.037	0.051	0.046	0.100	-	-	0.955	<0.001	1.486	0.001	0.037	0.125	-	-	0.923	<0.001
Diptera	Mantodea	0.999	0.990	0.984	1.027	0.056	0.151	0.078	-	-	0.962	<0.001	1.176	0.054	0.191	0.012	-	-	0.983	<0.001
Diptera	Megaloptera	0.997	0.986	0.978	1.076	0.003	0.015	0.415	-	-	0.963	<0.001	1.685	0.001	0.076	0.175	-	-	0.994	<0.001
Diptera	Neuroptera	0.997	0.976	0.961	1.041	0.035	-0.099	0.839	-	-	0.962	<0.001	1.106	0.183	-0.029	0.625	-	-	0.985	<0.001
Diptera	Odonata	0.997	0.778	0.935	1.008	0.278	0.057	0.134	-	-	0.960	<0.001	1.171	0.067	0.085	0.043	-	-	0.945	<0.001
Diptera	Orthoptera	0.995	0.914	0.953	1.058	0.002	0.045	0.048	-	-	0.958	<0.001	1.280	0.024	0.046	0.054	-	-	0.921	<0.001
Ephemeroptera	Hemiptera	0.994	0.983	0.965	1.135	<0.001	-0.295	0.998	-	-	0.995	<0.001	1.439	0.011	-0.239	0.987	-	-	0.998	<0.001
Ephemeroptera	Hymenoptera	0.985	0.974	0.930	1.160	0.007	-0.095	0.780	-	-	0.993	<0.001	1.923	0.009	-0.025	0.520	-	-	0.983	<0.001
Ephemeroptera	Lepidoptera	0.990	0.987	0.932	1.093	0.005	-0.172	0.953	-	-	0.991	<0.001	1.096	0.197	-0.136	0.886	-	-	0.966	<0.001
Ephemeroptera	Mantodea	0.993	0.996	0.986	1.118	0.011	0.284	0.004	-	-	0.998	<0.001	1.251	0.018	0.274	0.001	-	-	0.999	<0.001
Ephemeroptera	Megaloptera	0.983	0.994	0.974	1.110	0.021	0.198	0.032	-	-	0.993	<0.001	1.627	0.001	0.390	0.005	-	-	0.999	<0.001
Ephemeroptera	Neuroptera	0.977	0.974	0.889	0.992	0.537	-0.025	0.682	-	-	0.981	<0.001	1.054	0.233	0.028	0.287	-	-	0.981	<0.001
Ephemeroptera	Odonata	0.995	0.995	0.979	1.170	<0.001	-0.022	0.570	-	-	0.998	<0.001	1.325	0.003	-0.034	0.609	-	-	0.999	<0.001
Ephemeroptera	Orthoptera	0.991	0.992	0.956	1.179	<0.001	-0.025	0.560	-	-	0.998	<0.001	1.397	0.002	0.048	0.339	-	-	0.995	<0.001
Hemiptera	Hymenoptera	0.991	0.985	0.950	1.519	<0.001	0.170	<0.001	-	-	0.993	<0.001	4.730	<0.001	0.186	<0.001	-	-	0.980	<0.001
Hemiptera	Lepidoptera	0.993	0.989	0.951	1.099	0.001	0.050	0.008	-	-	0.994	<0.001	1.870	<0.001	0.061	0.003	-	-	0.972	<0.001
Hemiptera	Mantodea	0.998	0.982	0.979	1.016	0.156	0.029	0.388	-	-	0.997	<0.001	1.144	0.147	0.021	0.421	-	-	0.984	<0.001
Hemiptera	Megaloptera	0.992	0.983	0.974	1.069	0.005	-0.118	0.866	-	-	0.997	<0.001	1.673	0.004	-0.090	0.792	-	-	0.984	<0.001
Hemiptera	Neuroptera	0.995	0.860	0.955	1.029	0.062	-0.196	0.972	-	-	0.994	<0.001	0.931	0.648	-0.169	0.958	-	-	0.927	<0.001
Hemiptera	Odonata	0.996	0.978	0.961	1.016	0.142	0.030	0.284	-	-	0.994	<0.001	1.066	0.292	0.025	0.296	-	-	0.899	<0.001
Hemiptera	Orthoptera	0.994	0.955	0.945	1.070	0.003	0.002	0.420	-	-	0.995	<0.001	1.412	0.014	0.008	0.341	-	-	0.934	<0.001
Hymenoptera	Lepidoptera	0.984	0.835	0.874	1.520	<0.001	0.156	<0.001	-	-	0.991	<0.001	4.339	<0.001	0.162	<0.001	-	-	0.928	<0.001
Hymenoptera	Mantodea	0.998	0.996	0.990	1.156	0.004	0.353	0.002	-	-	0.998	<0.001	1.978	0.009	0.385	0.001	-	-	0.999	<0.001
Hymenoptera	Megaloptera	0.993	0.992	0.981	1.194	0.001	0.160	0.072	-	-	0.996	<0.001	2.677	<0.001	0.221	0.022	-	-	0.999	<0.001
Hymenoptera	Neuroptera	0.992	0.962	0.952	1.111	0.009	0.052	0.311	-	-	0.994	<0.001	1.876	0.013	0.126	0.104	-	-	0.983	<0.001
Hymenoptera	Odonata	0.994	0.657	0.941	1.275	<0.001	0.348	<0.001	-	-	0.993	<0.001	2.531	0.001	0.354	<0.001	-	-	0.916	<0.001
Hymenoptera	Orthoptera	0.990	0.906	0.938	1.467	<0.001	0.280	<0.001	-	-	0.995	<0.001	3.375	<0.001	0.282	<0.001	-	-	0.944	<0.001
Lepidoptera	Mantodea	0.997	0.985	0.977	1.040	0.039	0.202	0.028	-	-	0.998	<0.001	1.156	0.093	0.203	0.024	-	-	0.986	<0.001
Lepidoptera	Megaloptera	0.992	0.972	0.964	1.072	0.002	-0.034	0.633	-	-	0.997	<0.001	1.659	0.004	-0.041	0.649	-	-	0.993	<0.001
Lepidoptera	Neuroptera	0.993	0.922	0.946	1.007	0.332	-0.107	0.845	-	-	0.993	<0.001	0.938	0.697	-0.078	0.764	-	-	0.962	<0.001
Lepidoptera	Odonata	0.991	0.826	0.926	1.049	0.017	0.146	0.021	-	-	0.995	<0.001	1.201	0.068	0.120	0.037	-	-	0.946	<0.001
Lepidoptera	Orthoptera	0.985	0.920	0.925	1.073	0.003	0.039	0.184	-	-	0.994	<0.001	1.379	0.002	0.042	0.138	-	-	0.952	<0.001
Mantodea	Megaloptera	0.994	0.911	0.951	1.040	0.093	0.135	0.115	-	-	0.998	<0.001	1.297	0.069	0.210	0.044	-	-	0.938	<0.001
Mantodea	Neuroptera	0.995	0.965	0.949	1.023	0.146	0.076	0.185	-	-	0.995	<0.001	0.948	0.657	-0.038	0.614	-	-	0.962	<0.001
Mantodea	Odonata	0.997	0.939	0.956	0.992	0.720	-0.080	0.813	-	-	0.994	<0.001	0.932	0.564	-0.091	0.828	-	-	0.930	<0.001
Mantodea	Orthoptera	0.996	0.976	0.981	1.026	0.064	0.203	0.057	-	-	0.996	<0.001	1.119	0.102	0.195	0.060	-	-	0.975	<0.001
Megaloptera	Neuroptera	0.987	0.939	0.936	1.035	0.150	0.069	0.199	-	-	0.992	<0.001	1.275	0.072	0.125	0.088	-	-	0.997	<0.001
Megaloptera	Odonata	0.995	0.957	0.944	1.061	0.003	-0.042	0.657	-	-	0.998	<0.001	1.323	0.044	-0.021	0.570	-	-	0.923	<0.001
Megaloptera	Orthoptera	0.992	0.970	0.969	1.085	0.001	0.056	0.251	-	-	0.998	<0.001	1.581	<0.001	0.099	0.153	-	-	0.977	<0.001
Neuroptera	Odonata	0.994	0.942	0.929	1.051	0.004	-0.090	0.833	-	-	0.994	<0.001	0.865	0.798	0.023	0.824	-	-	0.894	<0.001
Neuroptera	Orthoptera	0.989	0.905	0.928	1.057	0.008	-0.026	0.564	-	-	0.997	<0.001	0.974	0.558	-0.090	0.375	-	-	0.961	<0.001
Odonata																				

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