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Morphological and DNA barcode species identifications of leafhoppers, planthoppers and treehoppers (Hemiptera: Auchenorrhyncha) at Barrow Island

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ABSTRACT – The hemipteran suborder Auchenorrhyncha comprises a rich assemblage of plant feeding species, many of which are widespread in distribution and act as vectors of viral and fungal diseases affecting plants. Species level identifications in this group generally are possible only by examination of male specimens; prior DNA barcode analyses of a limited range of Auchenorrhyncha indicate that this approach may provide an expedient means to identify species within this diverse group. In this study we explored the utility of DNA barcoding for identification of a wider range of Auchenorrhyncha species than has been examined previously. Diverse fulgoroid (planthopper) and membracoid (leafhopper and allies) Auchenorrhyncha were sampled from Barrow Island, Western Australia, and identified to the least inclusive taxonomic units using morphology. DNA barcodes from 546 adult specimens were obtained and analysed using a General mixed Yule – Coalescent (GMYC) modelling approach to genetically delimit putative species, as a comparison to the morphospecies identifications. Additional DNA barcodes (N = 106) were obtained from nymphs and these were compared to adult DNA barcodes to identify species present among immature specimens.

Among adult specimens, 73 species were congruently delimited by morphology and genetic analyses when modelled using a single threshold GMYC. Congruence between morphological and molecular species assignments was greatly reduced when the Yule – Coalescent transition was allowed to vary across genetic lineages. In a separate DNA barcode analysis of all specimens using neighbour joining distance metrics, nymphs and physically degraded specimens were in most cases genetically linked to adult conspecifics. Ten genetic clades detected among the nymphs were not observed among adults and did not match pre-existing sequence accessions in GenBank or DNA barcode records in BOLD.

Of the 73 adult Auchenorrhyncha species congruently identified by DNA barcoding and morphology, most were Cicadellidae (N = 53 morphospecies), the remaining 20 morphospecies were sparsely representative of ten other families. Formal identifications to species level were available for only 36% of these 73 morphospecies, owing mainly to an absence of diagnostic male specimens within many of the delimited species. Indeterminate species detected among adults and nymphs are designated with interim species codes.

The work presented here demonstrates that DNA barcoding is likely to be a powerful investigative tool for identifying and understanding species limits in the Auchenorrhyncha, particularly if it is used within an integrative taxonomic framework.

KEYWORDS: mitochondrial DNA, Cytochrome Oxidase I, Cicadellidae

INTRODUCTION

The Auchenorrhyncha are a species rich suborder within the megadiverse order Hemiptera comprising cicadas (Cicadoidea), leafhoppers and treehoppers (Membracoidea), planthoppers (Fulgoroidea), froghoppers and spittle bugs (Cercopoidea). All Auchenorrhyncha are plant feeders and many are vectors of viral and fungal diseases of plants. Species level identifications using traditional taxonomic approaches are mainly reliant on examination of the male genitalia. Identifications of females and nymphs are generally restricted to the genus level unless specimens are closely associated with adult males. As a consequence, traditional species delimitation and identification of Auchenorrhyncha is likely to be restrictive under circumstances where rapid bio-inventories are required. Given the prevalence of pathogen vector association among many of the Auchenorrhyncha, and the importance of this to global agricultural plant-biosecurity, it is essential that the provision of species-level diagnostics for this suborder is accelerated.

The promise of DNA barcoding as a standardised method to provide rapid and accurate species level identification has been widely touted since its first report early this century (Hebert et al. 2003). DNA barcoding is now a global scientific enterprise aiding taxonomy and species discovery. The premise of DNA barcoding is simple: the majority of species may be identified genetically using their unique nucleotide sequence for a standardised genomic region(s). In the case of animals, the standard diagnostic target is a > 500 base pair portion of the 5′-portion of the mitochondrial Cytochrome Oxidase I (COI) gene (Hebert et al. 2003). One major criticism of DNA barcoding, as a method for species identification and discovery, concerns the lack of universal operational criteria for assigning a specimen barcode to a given species. Original genetic distance methods which employ empirically determined distance criteria for species delimitation (Hebert et al. 2003), have been largely successful in most cases but are criticised as computationally naïve regarding macro-evolutionary processes (Will and Rubinoff 2004) and vulnerable to error depending on metrics used (Meier et al. 2008) and the extent of congeneric sampling employed (Jansen et al. 2009). Alternative approaches of species delimitation using DNA barcode data include character based analyses to detect parsimonious sharing of species diagnostic nucleotides (Davis and Nixon 1992; DeSalle et al. 2005) and more recent theory-based statistical approaches which employ population coalescent modelling to predict species boundaries from single or multi-locus data (Pons et al. 2006; Rosenberg 2007; Cummings et al. 2008; Yang and Rannala 2010). These new approaches are likely to increase analytical rigour in future DNA barcoding surveys (Fujita et al. 2012).

DNA barcoding has been used as an investigative tool for species delimitation and identification for several families of Hemiptera (Park et al. 2011a, 2011b); however its application to the Auchenorrhyncha largely has been restricted to analyses of cicadellid leafhoppers sampled from Japan (Kamitani 2011) and several significant genera present in the Holarctic (Bluemel et al. 2011; Seabra et al. 2010). Multi-gene analyses of species relationships incorporating the DNA barcode region have also been reported for some significant Auchenorrhyncha present in the Palaearctic (Maryańska-Nadachowska et al. 2010) and in Polynesia (Bennet and O'Grady 2012).

In this study we used DNA barcoding to assist in species identifications of two Auchenorrhyncha superfamilies (Fulgoroidea and Membracoidea) sampled from Barrow Island, Western Australia. Adults were first sorted from immature specimens and identified to morphospecies. We then provided DNA barcode based species delimitations at the adult specimens and compared these to their morphospecies determinations to assess the extent of congruence between the two independent approaches to species inventory. We used a recently developed method of genetic species delimitation to analyse the DNA barcodes, which identifies terminal genetic species based on modelling of expected differences in phylogenetic branching between population coalescence and species diversification (Pons et al. 2006; Monaghan et al. 2009). In addition, we used DNA barcoding to provide putative species identities for morphologically indistinct nymph specimens. For this, we used simple pair-wise genetic distance methods to distinguish immature specimens and to provide putative species identities to them based solely on their DNA barcode match to adults.

METHODS

SAMPLING AND LABORATORY ANALYSES

Adult (N = 672) and nymph (N = 106) Auchenorrhyncha were sampled at 26 sites during 2005–2007 as part of a baseline survey of terrestrial invertebrates for the Gorgon Gas Development on Barrow Island, Western Australia (Callan et al. 2011). Samples were transferred to the NSW *Agricultural Scientific Collections Unit (Orange Agricultural Institute, NSW Department of Primary*

Industries) for taxonomic identifications and storage. Adult specimens were morphologically sorted and identified to the least inclusive taxonomic level based on male genitalia.

In preparation for DNA extraction, adult specimens' abdomens or legs, and whole specimen nymphs were non-destructively digested overnight at 55°C in separate aliquots containing 360µl of tissue digestion buffer (QIAGEN, Doncaster, Australia) and 40 µl of proteinase-K solution (QIAGEN) diluted to a final volume of 1%. DNA extractions were conducted using a Corbett Research 1820 X-tractor Gene robot with recommended protocols and DNA extraction kit reagents (QIAGEN). Final DNA elutions of 120 µl were stored at -20° C. Mitochondrial cytochrome oxidase I (COI) DNA barcodes were targeted for amplification by polymerase chain reaction (PCR) using primer BC1Fm in combination with either BC3RDm or JerR2m (Table 1) yielding PCR amplicons of lengths 672 bp and 646 bp, respectively (all reported amplicon lengths exclude primer sequences). Overlapping short fragment PCRs were attempted when full-length DNA barcodes failed to amplify (Table 1). For this, the 5′-portion of the original COI target amplicon was amplified with primers BC1Fm and Scar-2RDm to give a 328 bp fragment; primers Scar-3aFm and JerR2m were used to amplify the 3′-portion, yielding a 406 bp product. The overlap between these amplicons was 88 bp. PCR Primers incorporated a 17 nucleotide M13 vector sequences at their 5′-ends, to simplify downstream sequencing. PCR amplicons (15 µl) were prepared using a Corbett 1200 PCR robot, and contained 4 µl of DNA extract in the presence of Invitrogen reagents: 1X PCR buffer, 3 mM $MgCl_2$, 0.4U Platinum Taq polymerase, 200 µM dNTPs and 2 pmol each of forward and reverse primers. Thermal cycling using an Eppendorf Mastercycler *ep gradient S* PCR machine consisted of an initial two minute 94º C denature followed by a 40 cycle profile (30 seconds denature at 94º C, 30 seconds anneal at 50º C, 60 seconds extension at 72º C) ending with a five minutes extension at 72º C and storage at 4º C. PCR products were visualized using a UV trans-illuminator after electrophoresis through a 1.5% agarose gel in 1% TAE buffer; products were qualitatively checked for expected fragment size against E-Gel size marker (Invitrogen). PCR products were sent to AGRF (Brisbane) for purification and bidirectional sequencing using M13 sequencing primers.

Forward and reverse AB1 trace files from each DNA extraction were checked for quality using SeqMan Pro ver. 8.1.0(3) (DNASTAR, Inc.) and assembled against a deltocephaline reference sequence (sp. J129, Le Roux and Rubinoff (2009); GenBank accession # EU981895.1) to generate consensus sequences. Primer sequences were masked at the assembly stage. Alignment of consensus sequences in preparation for genetic analyses was conducted using BioEdit ver. 7.0.5.3 (Hall 1999). All sequences and trace files, as well as specimen images and sample data, were uploaded to the Barcode of Life Data System (BOLD) (Ratnasingham and Hebert 2007) and are publically available under the project "Barrow Island Hemiptera" (project code: BIH), sequences are also available at GenBank (accessions KF226727–KF227378).

DNA BARCODE ANALYSIS AND SPECIES DELIMITATIONS OF ADULTS

Sequence analysis of adult DNA barcodes followed a 2 step procedure.

Step 1 identified putative species from DNA barcodes using a statistical approach (Pons et al. 2006; Monaghan et al. 2009) to detect shifts in

TABLE 1 Primers used for amplification of partial mitochondrial Cytochrome Oxidase I gene product. Refer to Methods for primer combinations used and PCR conditions. Seventeen base pair M13-vector sequence 5′-tails are italicised and underlined in forward and reverse primer directions respectively. Primer sources: (1) Cho et al. (2008) and modified from (a) Folmer et al. (1994); (2) modified from forward primer ("Jerry" of Simon et al.1994); (3) new primer.

Primer	Sequence (5′ – 3′)	Source
BC1Fm	*GTAAAACGACGGCCAG*TCwACwAAyCAyAArGAyATyGG	1a
Scar-3aFm	*GTAAAACGACGGCCAG*GChCChGAyATAGCnTTyCCnCG	3
BC3RDm	CAGGAAACAGCTATGACCChGArGTwTAyATTyTwATTyTwC	1
JerR2m	CAGGAAACAGCTATGACCArCAyyTrTTyTGrTTyTTTGG	2, 3
Scar-2RDm	CAGGAAACAGCTATGACGArArwGGnGGrTAnACwGTTC	3

lineage branching rates distinguishing species divergence (Yule 1924) from population coalescent processes (Kingman 1982). Application of a general mixed Yule – coalescent (GMYC) model fitted to a clock-constrained gene tree can be used to identify the threshold at which there is a substantial rate shift in lineage accumulation demarcating species divergence from intraspecific diversification (Pons et al. 2006). Nodes occurring before the threshold identify earlier species diversification events; nodes after the threshold identify intraspecific population coalescence events (Pons et al. 2006; Papadopoulou et al. 2008; Monaghan et al. 2009). In preparation for this analysis, adult sequences less than 500 bp were discarded and the remaining sequences were truncated to an equal length alignment using BioEdit ver. 7.0.9.0 (Hall 1999). Identical sequences in the edited alignment were identified and collapsed as unique haplotypes using FaBox ver.1.35 (Villesen 2007). A maximum likelihood ultrametric tree incorporating a uniform molecular clock, and a General Time Reversible nucleotide substitution model with Gamma distributed site rates (GTR+G), was generated from the haplotype alignment using PAUP* ver. 4.0b10 (Swofford 1998) and seeded by an initial UPGMA tree. The GTR+G model and parameters used in the ML tree search were initially determined as a best fit of the data using jModelTest (Posada 2008). A single threshold general mixed Yule coalescent (GMYC) model was optimised at the ultrametric tree to identify location of the threshold separating speciation from coalescent events, using GMYC script implemented in the Splits package for R (Pons et al. 2006; http://r-forge.r-project.org/projects/splits/) and functions within the APE library for R (Paradis et al. 2004). The predicted speciation – coalescent threshold was mapped onto a lineage through time (LTT) plot that was constructed as a cumulative frequency curve of inter-nodal branch occurrence observed within the ultrametric tree. A likelihood ratio test comparing the GMYC optimisation against a null model (where the entire sample is assumed to have a uniform branching rate) was used to test if there was evidence to reject the predicted transition threshold (Monaghan et al. 2009). Lineages observed after the predicted threshold leading to one or more constituent haplotypes were numerically labelled as putative species.

We also explored a multiple threshold GMYC model optimised to the ultrametric tree (Monaghan et al. 2009), and compared genetic species delimitations determined by this latter model with that detected using the single threshold. The multiple threshold GMYC model differs from the single threshold model by allowing recognition of multiple coalescent to speciation transition events within a tree. Effectively it allows for variable rates of lineage evolution among independent clades.

Step 2 compared membership of the genetically delimited putative species identified by the single and mixed GMYC models with those determined by morphological examination. Specimen replicates at haplotypes within each genetic species were retrospectively examined to determine if they shared the same morphospecies identification. Summary information on genetic differences within and between species congruently defined by morphology and genetics was calculated from species haplotypes using MEGA4 (Tamura et al. 2007). For these calculations, only haplotypes > 500 bp of comparable sequence were used.

NYMPH SAMPLE SEQUENCE ANALYSIS

Nymph sequences (N = 106) were compared to all adult sequences (including sequences < 500 bp) to determine whether nymphs could be assigned to species using DNA barcodes. A neighbour joining tree (Saitou and Nei 1987) was calculated using the Kimura 2-parameter distance model (Kimura 1980) with node support estimated by bootstrapping (1,000 replicates) as implemented in MEGA4 (Tamura et al. 2007). Nymphs were identified to species level if they either shared a DNA barcode haplotype with an adult morphospecies or had a novel haplotype which was nested within the clade of an adult morphospecies. Nymphs with novel haplotypes not nested within adult clades were assigned as new putative species not observed among the adult morphospecies and lacking a taxonomic identity. Sequences of these new putative species were queried against GenBank (on 20 Oct. 2012) using the standard nucleotide BLAST algorithm at NCBI (http://www.ncbi.nlm.nih.gov/). Accession records matching sequences with > 97% sequence similarity (at > 95% sequence coverage) were considered a positive match at the species level. Similar query searches were conducted using the species identification tool at BOLD.

RESULTS

SPECIES DELIMITATION

Adult specimens were morphologically delimited into 73 taxa (Table 2). These included 26 formally described species, 45 indeterminate species and two taxa that could not be adequately identified below the level of family due to sample condition. Many of the indeterminate taxa could not be positively identified to species level as

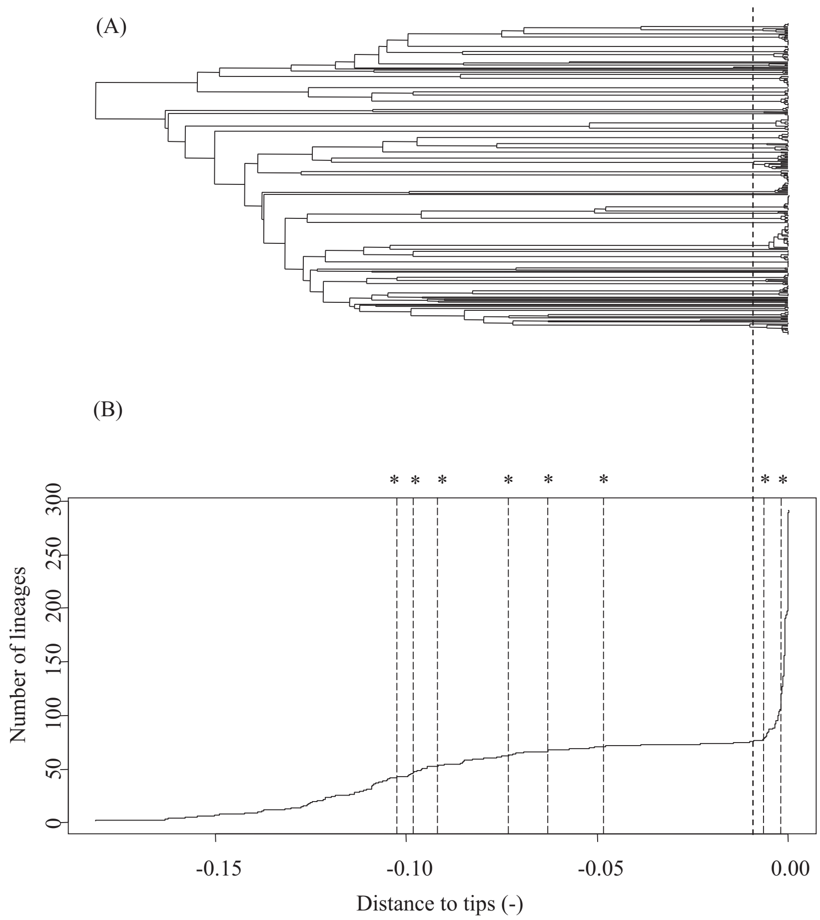

FIGURE 1 Ultrametric clock constrained maximum likelihood tree of 291 unique haplotypes identified among Barrow Island Auchenorrhyncha (A); and corresponding lineage through time (LTT) plot (B). The vertical dashed line spanning (A) and (B) indicates the speciation – coalescent transition in branching rate identified using a single threshold general mixed Yule-Coalescent (GMYC) model. Eight additional transition events identified using a multiple threshold GMYC model indicated in the LTT plot by dashed lines and *. Distance to tips is scaled from -1 (base of the tree) to 0 (terminal haplotypes).

they were represented by female specimens only. The remaining indeterminate males could not be identified to taxa currently recorded from Australia.

PCR products were successfully recovered from 546 (81.3%) of the 672 adult samples. Of these, DNA barcode sequences > 500 bp were obtained from 478 samples; the remaining 68 samples were recovered as partial DNA barcode sequences ranging in size from 242–499 bp. There was no evidence of nucleotide base insertions/deletions or amino acid stop codons among sequences. The average percentage of A and T residues among sequences was 67.3%. A total of 291 unique haplotypes were identified among DNA barcodes > 500 bp.

The maximum likelihood ultrametric tree of genetic relationships among the 291 haplotypes was converted as a lineage through time (LTT) plot to show a cumulative frequency curve of inter-nodal branch occurrence (Figure 1). In the LTT plot, two prolonged phases of minimal branch accumulation from the base of the tree were followed by a single steep rate increase of very short duration towards the tips of the tree. The point of increase commencing the final steep phase was indicative of an expected transition between inter and intraspecific rates of lineage branching (Pons et al. 2006). This transition was optimally fitted by the single threshold GMYC model as occurring at -0.0092 distance units before present.

Seventy six putative species were delimited by this single threshold transition (Supplementary Figure 1A), with a 95% confidence interval (within two log-likelihood units of the maximum likelihood) ranging from 73–76 species. Sixty percent of the putative species (N = 46) were represented by multiple haplotypes, the remaining species (N = 30) were each represented by a single haplotype. The single threshold GMYC model was a significantly better fit of the data compared to a null model of uniform branching rates ($logL_{single}$ = 2640 vs $logL_{null}$ = 2391; 2Δ L = 498, P < 0.001, d.f. = 3). The multiple threshold GMYC model was a significantly better fit of the data compared to both the null model of uniform branching rates ($logL_{multiple}$ = 2747.4 vs $logL_{null}$ = 2391; 2Δ L = 712.9, P < 0.001, d.f. = 3), and to the single threshold model (χ^2 = 214.41, d.f., = 21, P < 0.001). The multiple threshold GMYC model identified eight Yule – coalescent transitions, none of which overlapped with that seen in the former model (Figure 1B); six transitions were shifted to the base of the tree relative to that seen at the former model, and two were shifted towards the tips. The latter two transitions were intermediate within the most rapid zone of rate change apparent in the LTT plot. In contrast the remaining six transitions were not associated with any prominent visible rate shifts on the plot. Ninety six putative species were delimited by the multiple threshold model (Supplementary Figure 1B), with a 95% confidence interval ranging from 81–97 species.

Species delimitations using the single threshold GMYC model (N = 76) were highly congruent both in number and sample membership of species delimited with that determined by morphology (N = 73) (Table 2; Appendix 1). In three instances, a morphological species was split as two putative sister species (Sp. Indet. (9) split as genetic species 11 and 12; *Orosius argentatus* (43) split as genetic species 72 and 73, and *O. orientalis* (45) split as genetic species 75 and 76). In contrast, the multiple threshold GMYC model identified a greater number of putative species (N = 96) than that identified by either the single threshold model (N = 76) or by morphology (N = 73). Putative species identified using the multiple threshold model showed poor association with species identified either using the single threshold model or by morphological analysis; only 27 species (37%) were congruently identified by the multiple threshold model and by morphology (Appendix 1). Sixteen morphospecies were split as two or more putative species and thirty morphospecies were fused with others as single putative species.

Identifications of the 73 morphologically defined species and their frequency of occurrence within the sample are seen in Table 2. Eleven Auchenorrhyncha families were represented in the sample (Table 2; Appendix 1). Greatest alpha-taxonomic diversity was seen in the Cicadellidae, represented by 53 species of leafhoppers (Figure 2); species counts within each of the remaining ten families averaged at two with a maximum of four species of Delphacidae and Nogodinidae. Average sequence distance (± S.E.) among haplotypes within morphospecies was 0.31% (± 0.01), with a maximum of 4.66% for *Orosius argentatus*. Distances between nearest neighbour species ranged from 7.20–20.87% with an average of 12.81% (± 0.12). A neighbour joining tree of K2P distances among morphospecies is presented in Figure 3.

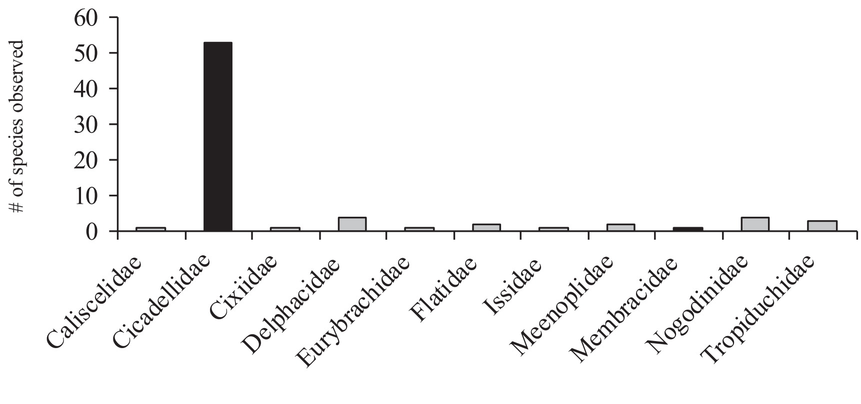

FIGURE 2 Number of morphospecies identified in 10 families of Auchenorrhyncha sampled from Barrow Island (Fulgoroidea shaded in grey; Membracoidea shaded in black).

TABLE 2 Taxonomy of 73 morphologically identified Barrow Island Auchenorrhyncha, and corresponding 76 genetic species. Adult morphospecies identified to least inclusive taxonomic unit, numbers in parentheses indicate morphospecies numerical designation (1–73). Genetic species (1-76) delimited using a single threshold GMYC model analysis applied to an ultrametric maximum likelihood tree of sequenced DNA barcode haplotypes. Specimens sorted numerically by genetic species designation. N = number of samples identified to each morphospecies. Adult specimen affiliation at each morpho and genetic species detailed in Appendix 1.

Family	Subfamily	Tribe	Morphospecies	Genetic species	N
Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp. (17)	1	7
Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp. (16)	2	7
Nogodinidae	Nogodininae	Lipocalliini	*Bilbilicallia* sp. (18)	3	3
Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp. (19)	4	25
Caliscelidae			sp. (12)	5	2
Flatidae	Flatinae	Phantiini	*Falcophantis westcotti* (11)	6	33
Flatidae	Flatinae	Siphantini	*Siphanta patruelis* (10)	7	23
Tropiduchidae	Tropiduchinae	Gaetuliini	*Alleloplasis* sp. (13)	8	3
Tropiduchidae	Tropiduchinae	Gaetuliini	*Alleloplasis* sp. (14)	9	6
Tropiduchidae	Tropiduchinae	Tropiduchini	*Oligaethus* sp. (15)	10	3
Issidae			sp. (9)	11 and 12	2
Cixiidae	Cixiinae		*Dysoliarus unicornis* (7)	13	1
Cicadellidae	Ulopinae	Ulopini	?*Kahavalu* sp. (42)	14	1
Eurybrachidae	Platybrachinae		sp. (8)	15	6
Meenoplidae	Nisiinae		*Phaconeura* sp. (5)	16	3
Meenoplidae	Nisiinae		*Phaconeura* sp. (6)	17	33
Delphacidae	Delphacinae	Delphacini	sp. (1)	18	3
Delphacidae	Delphacinae	Delphacini	*Toya* sp. (2)	19	9
Delphacidae	Delphacinae	Delphacini	*Sardia rostrata* (3)	20	1
Delphacidae	Delphacinae	Delphacini	sp. (4)	21	18
Cicadellidae	Typhlocybinae	Empoascini	*Austroasca histrionicula* (56)	22	5
Cicadellidae	Typhlocybinae	Empoascini	*Austroasca viridigrisea* (55)	23	4
Membracidae	Centrotinae	Terentiini	*Rigula* sp. (72)	24	3
Cicadellidae	Iassinae	Iassini	*Batracomorphus adventitiosus* (21)	25	11
Cicadellidae	Iassinae	Iassini	*Batracomorphus angustatus* (20)	26	6
Cicadellidae	Megophthalminae	Agalliini	*Austroagallia torrida* (68)	27	2
Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp. (59)	28	16
Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara n.spZ06* (60)	29	2
Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina* (61)	30	16
Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp.02A (69)	31	7
Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp.02 (62)	32	15
Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* n.sp.23A (65)	33	14
Cicadellidae	Ulopinae	Cephalelini	*Linacephalus foveolatus* (58)	34	3
Cicadellidae	Idiocerinae		*Pascoepus viridiceps* (25)	35	23

Family	Subfamily	Tribe	Morphospecies	Genetic species	N
Cicadellidae	Deltocephalinae	Deltocephalini	sp. (46)	36	22
Cicadellidae	Deltocephalinae	Deltocephalini	sp. (47)	37	1
Cicadellidae	Deltocephalinae	Stenometopiini	sp. (71)	38	1
Cicadellidae	Deltocephalinae	Eupelicini	sp. (75)	39	25
Cicadellidae	Deltocephalinae	Eupelicini	sp. (74)	40	1
Cicadellidae	Deltocephalinae	Eupelicini	sp. (76)	41	4
Cicadellidae	Deltocephalinae	Eupelicini	*Mapochiella* sp. (77)	42	8
Cicadellidae	Deltocephalinae	Athysanini	*Limotettix incertus* (73)	43	5
Cicadellidae	Tartessinae		*Protartessus spinosus* (22)	44	29
Cicadellidae	Tartessinae		*Newmaniana* sp. (23)	45	2
Cicadellidae	Idiocerinae		*Zaletta webbi* (24)	46	5
Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri* (26)	47	22
Cicadellidae	Deltocephalinae	Stenometopiini	*Stirellus* sp. (70)	48	12
Cicadellidae	Deltocephalinae	Macrostelini	*Balclutha incisa* (53)	49	3
Cicadellidae	Deltocephalinae	Macrostelini	*Balclutha rosea* (54)	50	5
Cicadellidae	Deltocephalinae	Opsiini	*Hishimonus* sp. (63)	51	1
Cicadellidae	Deltocephalinae	Opsiini	*Goniagnathus* sp. (52)	52	1
Cicadellidae	Deltocephalinae	Athysanini	*Exitianus nanus* (31)	53	8
Cicadellidae	Deltocephalinae	Macrostelini	*Nesoclutha* sp. (28)	54	3
Cicadellidae	Deltocephalinae	Athysanini	*Exitianus plebeius* (30)	55	4
Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas knighti* (33)	56	14
Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas* sp. (32)	57	3
Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp. (37)	58	2
Cicadellidae	Deltocephalinae	Athysanini	*Arawa* sp. (36)	59	1
Cicadellidae	Deltocephalinae	Deltocephalini	*Horouta austrina* (49)	60	1
Cicadellidae	Deltocephalinae	Paralimnini	*Soractellus* sp. (50)	61	1
Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas* sp. (51)	62	1
Cicadellidae	Deltocephalinae	Deltocephalini	*Horouta* sp. (48)	63	2
Cicadellidae	Deltocephalinae	Hecalini	*Hecalus australis* (27)	64	1
Cicadellidae	Deltocephalinae	Paralimnini	*Mayawa* sp. (35)	65	1
Cicadellidae	Deltocephalinae	Paralimnini	*Mayawa* sp. (34)	66	1
Cicadellidae	Deltocephalinae	Athysanini	sp. (29)	67	3
Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp. (41)	68	1
Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp. (40)	69	14
Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp. (39)	70	2
Cicadellidae	Deltocephalinae	Opsiini	*Orosius canberrensis* (38)	71	1
Cicadellidae	Deltocephalinae	Opsiini	*Orosius argentatus* (43)	72 and 73	4
Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp. (44)	74	1
Cicadellidae	Deltocephalinae	Opsiini	*Orosius orientalis* (45)	75 and 76	14

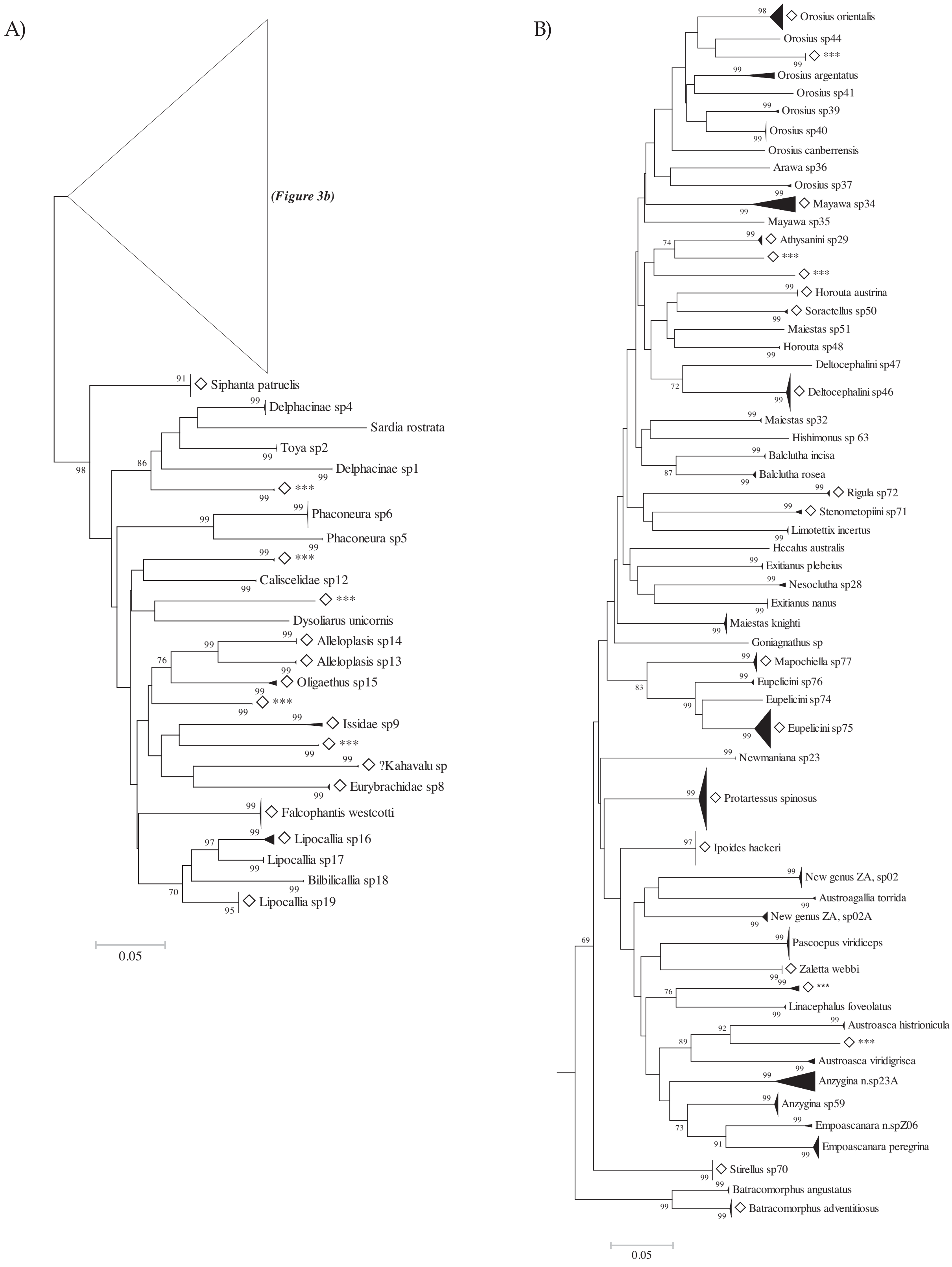

FIGURE 3 Neighbour joining tree of all adult Auchenorrhyncha specimens (N = 546) and nymphs (N = 104); tree split as Figure 3a and 3b. Tree includes all specimens with DNA barcodes (> 500 bp) and partial barcodes (< 500 bp of sequence). Morphospecies labelled as per Table 2; presence of nymph(s) in species clade indicated by open diamond. Tips labelled *** indicate clade populated by nymphs only. Scale bar indicates percentage sequence difference adjusted by the Kimura-2 parameter model of evolution. Node support values ≥ 70% estimated by 1000 bootstrap replicates as indicated.

NYMPH DNA BARCODING

DNA barcodes were retrieved from 106 nymphs (Appendix 2). Genetic relationships between adult and nymph specimens are seen in Figure 3. In total, 80 nymphs were identified to 24 morphospecies. The remaining 26 unidentified nymphs resolved in the tree as 10 terminal clades that were well supported (> 95%) and genetically distant from clades associated with adult morphospecies. Maximum genetic differences within these ten novel clades ranged from 0.16 to 1.63%, and minimum distances to nearest sister clades ranged from 8.63 to 16.56%.

DISCUSSION

Here we report the first instance of a survey of Auchenorrhyncha species present on Barrow Island, Western Australia, assessed using a combined morphological and molecular approach for species identification. We also examined the proposition that DNA barcoding used in conjunction with coalescent based sequence analyses can effectively complement traditional morphology based biodiversity assessment. Our results are largely supportive of this proposition and also demonstrate added benefits of using DNA barcoding in biodiversity analysis, particularly in circumstances where morphological criteria for species delimitation cannot be applied.

Key to this discussion was our principal result that genetic species delimitations identified among Auchenorrhyncha specimens using a single threshold GMYC model were highly congruent with our morphospecies identifications. Both approaches to species delimitation identified a minimum of 73 species present in the survey with total agreement among approaches regarding sample affiliation within delimited species. The 95% confidence interval at the single threshold GMYC model allowed recognition of an additional three putative species, where three morphospecies were each bifurcated as two separate genetic species. The maximum genetic difference observed in the three morphospecies was 4.66% in *Orosius argentatus*, differences in the other two split morphospecies ranged from 2.4–2.8%. Sequence differences greater than 3% among faunal conspecifics at CO1 are infrequently observed in empirical population genetic and DNA barcoding surveys (Ferguson 2002; Hebert et al. 2003; Hebert et al. 2004a). Methods of species identification based on sequence distance statistics, such as the DNA barcode gap (Hebert et al. 2003; Hebert et al. 2004b) and other similar approaches (Ferri et al. 2009), are frequently used to derive operational standards for species delimitation. Distance based approaches are also frequently used in DNA barcoding studies to signify potential presence of cryptic diversity in morphologically cohesive species when limits are exceeded (Léfebure et al. 2006). These distance based approaches to species delimitation are computationally simple, are based directly on the empirical DNA barcode data and are seemingly applicable across a broad variety of fauna (Hebert et al. 2004b), albeit usually tailored for the focal study taxa. However these approaches ignore issues of genetic paraphyly (Trewick 2008) when single locus gene trees are not in accord with species trees due to a variety of biological, demographic, geographic or temporal processes (Doyle 1997; Avise 2000). Deep genetic divisions observed at a single locus within a morphospecies may equally signal presence of ancestral lineage retention or interspecies introgression as plausible alternatives to sympatry or parapatry of morphologically cryptic species (Funk and Omland 2003). Sequence differences exceeding 3% (or other similar empirically derived thresholds) in some reproductively cohesive insect species are likely to be more evident as the scale of both geographic sampling and sample replication is increased in DNA barcode surveys (Trewick 2008; Bergstein et al. 2012; but see Lukhtanov et al. 2009). Increasingly there are calls to the DNA barcode community to treat DNA barcode species identifications as hypotheses to be tested in an integrative taxonomic framework, incorporating multiple independent data (behavioural, ecological, molecular, morphological) to examine the cohesiveness of species boundaries defining examined taxa (Dayrat 2005; DeSalle et al. 2005; Padial et al. 2010; Schlick-Steiner et al. 2010; Goldstein and DeSalle 2011). In this current study, our subsequent morphological re-examination of specimens at each of the three genetically split morphospecies failed to identify any corroborative morphological evidence supportive of these genetic species divisions. We conservatively argue there is insufficient evidence in the current sample to determine if the three instances of genetic splitting detected here result from co-existence of morphologically cryptic species, retention of divergent mitochondrial lineages in the population of the species, or other causes such as cross species introgression. Future work to examine independent nuclear sequence diversity (or other independent comparative data types) across a broader geographic sampling area of the three morphospecies is needed to test these competing hypotheses.

In contrast to that seen in the single threshold GMYC model, species delimitations using the multiple threshold GMYC were incongruent for ~ 60% of the morphospecies identifications, with differences apparent due to both fusing and splitting of the morphospecies (Sup.Table 1). For example, the multiple threshold GMYC model fused 30 distinct morphological species into 12 putative species. In many of those instances, morphospecies identified by a single haplotype were lumped with genetically diverse sister species or genera and, in a few instances, species from different subfamilies were fused together (refer Sup. Table 1). Average maximum sequence difference within these fused genetic species was > 17%, far exceeding empirically observed levels of intraspecific divergence at mitochondrial CO1 in eukaryotes (Hebert et al. 2003). The multiple threshold model also split 16 morphospecies into two or more genetic species. In several instances, haplotypes which minimally differed by << 1% sequence difference in a morphospecies were delimited as separate genetic species. Clearly in the current study, the single threshold GMYC model provided greater congruence to the morphological analyses than did the multiple threshold model, both with the number of species delimited and with specimen affiliation within the delimited species. This is surprising, given that the multiple threshold GMYC model was a significantly better fit to the genetic data compared to the single threshold model ($\log L_{multiple}$ = 2747.4 vs $\log L_{single}$ = 2640.2, ^{2} = 214.41, d.f., = 21, $P < 0.001$), a result which indicated species boundaries varied significantly among genetic lineages in the sample phylogeny. A contrasting outcome was observed by Monaghan et al. (2009) in their GMYC analyses of four insect orders sampled from Madagascar. In that study, the multiple threshold model resulted in a slight overall trend in morphospecies fusing but fewer instances of splitting and greater congruence to the morphospecies delimitations than did the single threshold model. Evidence in this current study suggests that acceptance of species delimitations of the multiple over the single threshold model, based solely on comparison of likelihood scores between these two models, can lead to erroneous estimations of species limits in a purely genetic survey. Reasons why the multiple threshold model performed poorly in this current study are unclear. However there were several instances using the multiple threshold model, where morphospecies represented by single haplotypes were merged with distantly related and genetically heterogeneous morphospecies to form single putative species. The circumstances leading to this outcome may be related to the effect of high variance in average effective population sizes relative to species divergence times in the gene tree (Fujisawa and Barraclough 2013 in press). Accuracy of the multiple model to optimise multiple diversification events may be affected when there is an abundance of species represented by singleton haplotypes that are genetically closest to more heterogeneous taxa. Greater scrutiny of single and multiple threshold GMYC models outcomes using a variety of simulated species diversification and population coalescent events may provide some insight into circumstances where the outcomes of the two models are likely to differ and or provide erroneous species delimitations. Very recent simulation work reported by Fujisawa and Barraclough (2013, in press) indicates the multiple threshold model is marginally less conservative than the single threshold model in regards to false positive error rates, and has greater incidence of species splitting across a variety of demographic scenarios. Species splitting was most apparent in simulations using an abundance of recently declining species populations, where excess recent coalescent events resulted in a greater prevalence of artefactual clusters detected by the multiple threshold model. The caveat from these simulations, predictions and our empirical analysis, is that modelling multiple transitions from speciation to coalescence branching patterns may erroneously estimate species numbers, in some circumstances delimiting species complexes as opposed to individual species (Pons et al. 2006), and in other cases resulting in splitting of species (Fujisawa and Barraclough 2013 in press).

The final inventory of 73 Auchenorrhyncha species at Barrow Island congruently delimited by morphology and genetics includes species from nine of the fifteen Fulgoroid (planthopper) families, and the two Membracoid (leaf/treehopper and horned treehopper) families present in Australia (Fletcher 2009). Cicadellidae are well represented (Table 2; Figure 2) and include eight of the seventeen leaf/treehopper subfamilies present in Australia. Species allocation in the inventory is dominated by leafhoppers (> 72% of all detected species), most of which are Deltocephalinae species (>48% of all detected species). Cosmopolitan species account for at least 36% of those detected at Barrow Island, but this is likely to be under-representative of the actual percentage of cosmopolitans present. One of the unresolved issues remaining from this survey, concerns the identity of indeterminate species delimited by the morphological and molecular approaches used here. In the case of adult specimens, 64% of taxa are taxonomically unresolved at the species level. These included a single morphospecies unable to be identified by morphology due to specimen condition (refer Table 2, Issidae, species (9)), and 46 putative species that either lacked male specimens for taxonomic identification, or could not be identified to formally recognised species present in Australia. All unresolved specimen sequences were queried for genetic similarity to sequence records and accessions in BOLD and GenBank [last accessed 20.10. 2012], but failed to be identified at 97% similarity. Closest genetic matches (data not shown) were to various Auchenorrhyncha accessions, suggesting the diversity of unidentified specimens in this study was not inflated by presence of contaminations or non-target taxa. These specimens must necessarily remain as interim undescribed taxa until matching DNA barcodes from physically complete and taxonomically identified adult male specimens are available. Regardless, permanent DNA barcode sequence records of all interim and indeterminate species detected here are stored in BOLD and are available for future sequence enquires and taxonomic annotations.

One of the major advantages of using DNA barcoding as an investigative tool for biodiversity analyses, is its unique facility to provide species identifications for specimens that are either physically degraded (deWaard et al. 2010), or of life stages with taxonomically intractable morphology (Hebert et al. 2004). Typically, these efforts rely on a pre-existing library of DNA barcodes from taxonomically described species, which can be used as references in distance based comparisons against a query specimen. In this study, nymphs were DNA barcoded and either resolved as conspecifics to adult morphospecies (80 nymphs identified to 24 adult morphospecies; Figure 3) or unresolved (26 nymphs grouped as ten novel monophyletic clades) with no match to adult specimens or sequence records at BOLD or GenBank [last accessed 20.10. 2012]. This is a similar outcome to that reported by Ahrens et al. (2007) for chafers (Coleoptera: Scarabaeidae) where 21% of genetically delimited species encountered as morphologically indistinct larvae could not be genetically associated to co-sampled adult specimens. In our study, the minimum genetic distances to these novel nymph clades was > 8.6%, and marginally greater than the minimum nearest neighbour distances among the adult species clades (> 7.2%); it remains to be determined if this novel diversity present among the nymphs is representative of undetected adult taxa (as inferred by the genetic distance data), or is representative of novel and deep population genetic variation within identified taxa. Regardless, this novel diversity would have remained undetected if specimen identifications were based solely on morphology. Taxonomic keys available for the Auchenorrhyncha describe and identify species based primarily on adult male specimens; keys for identification of their nymphs are either unavailable, or at best, limited to the higher levels of classification (e.g. Dmitriev 2009). As a result, morphological surveys of Auchenorrhyncha may underestimate species diversity if a portion of immature specimens present at a location are not conspecific with any sampled adults. A similar outcome may result from excessive presence of physically degraded specimens. The extent of this "hidden" diversity will vary among sampling efforts according to both the sampling methods employed for specimen collection and the seasonality of adult / immature specimen occurrence at sample locations. To this end, inclusion of DNA barcoding in future Auchenorrhyncha sampling efforts will provide a means not only to identify presence of "hidden" diversity, but also provide ecological information concerning the seasonality of occurrence among life stages of particular species (Ahrens et al. 2007). For these reasons, DNA barcoding could effectively inform the design and duration of ongoing survey efforts, particularly if a predetermined threshold of hidden or seasonal diversity was exceeded in pilot analyses.

CONCLUSIONS

The high level of congruence in species delimitation observed here, between independent examinations of morphology and DNA barcodes, provides some confidence that future DNA barcode assays of Auchenorrhyncha are likely to provide species identifications and delimitations at this group with a high level of confidence. Furthermore the approach is applicable and informative across a range of Auchenorrhyncha specimen types and life stages, and therefore likely to be an invaluable investigative tool for surveying alpha taxonomy in this group. This view is tempered by the caveat demonstrated here, that an inappropriate choice of genetic model used for analysis of DNA barcodes can substantially over and under estimate species assignments. Therefore we are supportive of recent calls for DNA barcode species hypotheses to be holistically tested and combined with independent data types that are informative of species boundaries and can be compared in an integrative taxonomic framework.

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APPENDIX 1 Taxonomic inventory of all morphologically identified adult Barrow Island Auchenorrhyncha. Specimens sorted numerically ascending according to morphospecies numerical designation. Genetic delimitations using single threshold general mixed Yule-Coalescent model and multiple threshold model listed numerically as indicated. Associated specimen, process and field ID's as indicated and used in the project "Barrow Island Hemiptera", publically available at Barcoding of life data system (BOLD) (Ratnasingham and Hebert 2007) (www.boldsystems.org). Associated GenBank accession numbers as indicated.

Sample ID	BOLD process ID	GenBank accession #	Collection date	Family	Subfamily	Tribe	Taxa ID	Sex	Morpho sp. #	Genetic sp. # (single threshold)	Genetic sp. # (multple threshold)	DNA barcode length (bp)	Field ID
ww03949	BIH627-08	KF226809	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.1 indet.	F	1	18	23	636	N27 326266 -7691041 (6.v.2006)
ww03950	BIH628-08	KF226810	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.1 indet.	F	1	18	23	645	N27 326266 -7691041 (6.v.2006)
ww03951	BIH629-08	KF226811	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.1 indet.	F	1	18	23	628	N27 326266 -7691041 (6.v.2006)
ww02860	BIH189-08	KF227339	25-Mar-2006	Delphacidae	Delphacinae	Delphacini	*Toya* sp.2 indet.	M	2	19	24	481	LTR1 337551 -7699293 (15.iii.2006)
ww02899	BIH228-08	KF227340	06-May-2006	Delphacidae	Delphacinae	Delphacini	*Toya* sp.2 indet.	M	2	19	24	598	NO1 339118 -7796272 (06.v.2006)
ww02902	BIH231-08	KF227343	06-May-2006	Delphacidae	Delphacinae	Delphacini	*Toya* sp.2 indet.	M	2	19	24	545	NO1 339118 -7796272 (06.v.2006)
ww02904	BIH233-08	KF227345	06-May-2006	Delphacidae	Delphacinae	Delphacini	*Toya* sp.2 indet.	M	2	19	24	319	NO1 339118 -7796272 (06.v.2006)
ww02913	BIH242-08	KF227344	06-May-2006	Delphacidae	Delphacinae	Delphacini	*Toya* sp.2 indet.	M	2	19	24	502	NO1 339118 -7796272 (06.v.2006)
ww03323	BIH319-08	KF227342	06-May-2006	Delphacidae	Delphacinae	Delphacini	*Toya* sp.2 indet.	M	2	19	24	554	NO5 334264 -7691974 (6.v.2006)
ww03324	BIH320-08	KF227341	06-May-2006	Delphacidae	Delphacinae	Delphacini	*Toya* sp.2 indet.	M	2	19	24	563	NO5 334264 -7691974 (6.v.2006)
ww03375	BIH371-08	KF227338	06-May-2006	Delphacidae	Delphacinae	Delphacini	*Toya* sp.2 indet.	M	2	19	24	631	NO7 331945 – 7697180 (6.v.2006)
ww03462	BIH458-08	KF227346	06-May-2006	Delphacidae	Delphacinae	Delphacini	*Toya* sp.2 indet.	M	2	19	24	627	N14 336303 -7698063 (6.v.2006)
ww02895	BIH224-08	KF227298	06-May-2006	Delphacidae	Delphacinae	Delphacini	*Sardia rostrata*	M	3	20	24	546	NO1 339118 -7796272 (06.v.2006)
ww02950	BIH279-08	KF226823	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	F	4	21	26	514	NO4 340913 -7707558 (06.v.2006)
ww02951	BIH280-08	KF226822	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	M	4	21	25	517	NO4 340913 -7707558 (06.v.2006)
ww03320	BIH316-08	KF226821	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	M	4	21	26	623	NO5 334264 -7691974 (6.v.2006)
ww03321	BIH317-08	KF226820	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	M	4	21	25	627	NO5 334264 -7691974 (6.v.2006)
ww03322	BIH318-08	KF226819	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	M	4	21	25	635	NO5 334264 -7691974 (6.v.2006)
ww03347	BIH343-08	KF226818	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	M	4	21	25	628	NO6 336875 -7699467 (6.v.2006)
ww03348	BIH344-08	KF226817	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	M	4	21	25	627	NO6 336875 -7699467 (6.v.2006)
ww03456	BIH452-08	KF226812	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	M	4	21	26	575	N13 332808 -7694467 (6.v.2006)
ww03457	BIH453-08	KF226813	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	M	4	21	26	600	N13 332808 -7694467 (6.v.2006)
ww03458	BIH454-08	KF226806	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	M	4	21	25	640	N13 332808 -7694467 (6.v.2006)
ww03576	BIH471-08	KF226814	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	F	4	21	25	491	N14 336303 -7698063 (6.v.2006)
ww03577	BIH472-08	KF226815	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	M	4	21	25	566	N14 336303 -7698063 (6.v.2006)
ww03578	BIH473-08	KF226816	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	M	4	21	25	584	N14 336303 -7698063 (6.v.2006)
ww03634	BIH529-08	KF226824	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	M	4	21	26	596	N18 332462 -7694562 (6.v.2006)
ww03635	BIH530-08	KF226825	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	M	4	21	25	628	N18 332462 -7694562 (6.v.2006)
ww03666	BIH561-08	KF226826	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	M	4	21	25	268	N20 338368 -7704749 (6.v.2006)
ww03947	BIH625-08	KF226807	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	M	4	21	26	635	N27 326266 -7691041 (6.v.2006)
ww03948	BIH626-08	KF226808	06-May-2006	Delphacidae	Delphacinae	Delphacini	sp.4 indet.	F	4	21	26	632	N27 326266 -7691041 (6.v.2006)
ww02768	BIH097-08	KF227251	25-Sep-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.5 indet.	F	5	16	18	646	GP2 339462 -7699882 (25.xi.2006)

Sample ID	BOLD process ID	GenBank accession #	Collection date	Family	Subfamily	Tribe	Taxa ID	Sex	Morpho sp. #	Genetic sp. # (single threshold)	Genetic sp. # (multple threshold)	DNA barcode length (bp)	Field ID
ww02769	BIH098-08	KF227250	25-Sep-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.5 indet.	M	5	16	18	646	GP2 339462 -7699882 (25.xi.2006)
ww02770	BIH099-08	KF227249	25-Sep-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.5 indet.	M	5	16	18	646	GP2 339462 -7699882 (25.xi.2006)
ww02804	BIH133-08	KF227241	25-Sep-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	F	6	17	21	639	GP5 338740 -770188 (25.xi.2006)
ww02805	BIH134-08	KF227240	25-Sep-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	635	GP5 338740 -770188 (25.xi.2006)
ww02806	BIH135-08	KF227239	25-Sep-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	630	GP5 338740 -770188 (25.xi.2006)
ww02898	BIH227-08	KF227231	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	650	NO1 339118 -7796272 (06.v.2006)
ww02936	BIH265-08	KF227242	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	19	474	NO2 328302 -7699494 (06.v.2006)
ww02937	BIH266-08	KF227243	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	F	6	17	22	284	NO2 328302 -7699494 (06.v.2006)
ww02938	BIH267-08	KF227244	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	F	6	17	19	586	NO2 328302 -7699494 (06.v.2006)
ww02939	BIH268-08	KF227245	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	F	6	17	19	552	NO2 328302 -7699494 (06.v.2006)
ww03344	BIH340-08	KF227252	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	632	NO6 336875 -7699467 (6.v.2006)
ww03345	BIH341-08	KF227253	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	626	NO6 336875 -7699467 (6.v.2006)
ww03346	BIH342-08	KF227254	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	F	6	17	22	653	NO6 336875 -7699467 (6.v.2006)
ww03391	BIH387-08	KF227227	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	F	6	17	22	632	NO9 332830 -7700852 (6.v.2006)
ww03392	BIH388-08	KF227226	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	F	6	17	22	646	NO9 332830 -7700852 (6.v.2006)
ww03393	BIH389-08	KF227225	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	642	NO9 332830 -7700852 (6.v.2006)
ww03394	BIH390-08	KF227260	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	F	6	17	22	649	NO9 332830 -7700852 (6.v.2006)
ww03395	BIH391-08	KF227259	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	600	NO9 332830 -7700852 (6.v.2006)
ww03415	BIH411-08	KF227257	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	615	N11 330953 -7697537 (6.v.2006)
ww03416	BIH412-08	KF227255	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	589	N11 330953 -7697537 (6.v.2006)
ww03454	BIH450-08	KF227228	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	F	6	17	22	641	N13 332808 -7694467 (6.v.2006)
ww03455	BIH451-08	KF227229	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	640	N13 332808 -7694467 (6.v.2006)
ww03459	BIH455-08	KF227230	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	652	N14 336303 -7698063 (6.v.2006)
ww03460	BIH456-08	KF227258	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	601	N14 336303 -7698063 (6.v.2006)
ww03461	BIH457-08	KF227256	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	646	N14 336303 -7698063 (6.v.2006)
ww03616	BIH511-08	KF227248	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	F	6	17	22	577	N16 328564 -7699486 (6.v.2006)
ww03617	BIH512-08	KF227247	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	F	6	17	22	586	N16 328564 -7699486 (6.v.2006)
ww03618	BIH513-08	KF227246	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	590	N16 328564 -7699486 (6.v.2006)
ww03645	BIH540-08	KF227236	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	579	N19 327609 -7691950 (6.v.2006)
ww03646	BIH541-08	KF227237	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	579	N19 327609 -7691950 (6.v.2006)
ww03663	BIH558-08	KF227235	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	642	N20 338368 -7704749 (6.v.2006)
ww03899	BIH577-08	KF227238	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	22	600	N23 332912 -7697030 (6.v.2006)
ww03900	BIH578-08	KF227232	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	F	6	17	22	637	N23 332912 -7697030 (6.v.2006)
ww03901	BIH579-08	KF227233	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	M	6	17	20	645	N23 332912 -7697030 (6.v.2006)
ww03902	BIH580-08	KF227234	06-May-2006	Meenoplidae	Nisiinae		*Phaconeura* sp.6 indet.	F	6	17	22	646	N23 332912 -7697030 (6.v.2006)
ww02788	BIH117-08	KF226865	25-Sep-2006	Cixiidae	Tropiduchinae	Tropiduchini	*Dysoliarus unicornis*	F	7	13	16	624	GP3 339424 -7700784 (25.xi.2006)
ww02636	BIH081-08	KF227035	25-Sep-2006	Eurybrachidae	Platybrachinae		sp.8 indet.	M	8	15	17	646	GP1 339434 -7700088 (25.xi.2006)

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ww05148	BIH659-09	KF227261	05-Jan-2007	Eurybrachidae	Platybrachinae		sp.8 indet.	F	8	15	17	646	No7b 01.v.2007 BI
ww05149	BIH660-09	KF227264	05-Jan-2007	Eurybrachidae	Platybrachinae		sp.8 indet.	F	8	15	17	626	No7b 01.v.2007 BI
ww05150	BIH661-09	KF227263	05-Jan-2007	Eurybrachidae	Platybrachinae		sp.8 indet.	M	8	15	17	626	No7b 01.v.2007 BI
ww05151	BIH662-09	KF226967	05-Jan-2007	Eurybrachidae	Platybrachinae		sp.8 indet.	M	8	15	17	646	No7b 01.v.2007 BI
ww05159	BIH670-09	KF227262	05-Jan-2007	Eurybrachidae	Platybrachinae		sp.8 indet.	M	8	15	17	605	No1a 01.v.2007 BI
ww02574	BIH019-08	KF227077	15-Mar-2006	Issidae			sp.9 indet.	F	9	12	15	548	CC1 337391 -7697313 (15.iii.2006)
ww02886	BIH215-08	KF227075	25-Mar-2006	Issidae			sp.9 indet.	M	9	11	15	558	LTR1 337551 -7699293 (15.iii.2006)
ww02921	BIH250-08	KF227300	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	F	10	7	13	622	NO2 328302 -7699494 (06.v.2006)
ww02944	BIH273-08	KF227316	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	F	10	7	13	598	NO4 340913 -7707558 (06.v.2006)
ww02945	BIH274-08	KF227315	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	M	10	7	11	570	NO4 340913 -7707558 (06.v.2006)
ww02946	BIH275-08	KF227314	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	M	10	7	13	541	NO4 340913 -7707558 (06.v.2006)
ww02947	BIH276-08	KF227313	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	M	10	7	11	517	NO4 340913 -7707558 (06.v.2006)
ww02948	BIH277-08	KF227312	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	F	10	7	13	525	NO4 340913 -7707558 (06.v.2006)
ww03307	BIH303-08	KF227309	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	M	10	7	13	646	NO5 334264 -7691974 (6.v.2006)
ww03329	BIH325-08	KF227308	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	M	10	7	12	576	NO6 336875 -7699467 (6.v.2006)
ww03330	BIH326-08	KF227307	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	M	10	7	13	577	NO6 336875 -7699467 (6.v.2006)
ww03331	BIH327-08	KF227299	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	M	10	7	12	628	NO6 336875 -7699467 (6.v.2006)
ww03332	BIH328-08	KF227306	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	M	10	7	13	626	NO6 336875 -7699467 (6.v.2006)
ww03333	BIH329-08	KF227305	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	M	10	7	13	617	NO6 336875 -7699467 (6.v.2006)
ww03420	BIH416-08	KF227304	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	M	10	7	11	577	N11 330953 -7697537 (6.v.2006)
ww03621	BIH516-08	KF227310	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	F	10	7	13	643	N16 328564 -7699486 (6.v.2006)
ww03622	BIH517-08	KF227311	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	M	10	7	13	637	N16 328564 -7699486 (6.v.2006)
ww03642	BIH537-08	KF227319	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	F	10	7	13	252	N18 332462 -7694562 (6.v.2006)
ww03648	BIH543-08	KF227317	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	M	10	7	13	627	N19 327609 -7691950 (6.v.2006)
ww03893	BIH571-08	KF227318	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	M	10	7	12	606	N22 335631 -7695646 (6.v.2006)
ww03894	BIH572-08	KF227320	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	M	10	7	13	623	N22 335631 -7695646 (6.v.2006)
ww03895	BIH573-08	KF227301	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	F	10	7	13	646	N22 335631 -7695646 (6.v.2006)
ww03896	BIH574-08	KF227303	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	M	10	7	13	646	N22 335631 -7695646 (6.v.2006)
ww03897	BIH575-08	KF227302	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	F	10	7	13	646	N22 335631 -7695646 (6.v.2006)
ww03906	BIH584-08	KF227321	06-May-2006	Flatidae	Flatinae	Siphantini	*Siphanta patruelis*	F	10	7	13	617	N23 332912 -7697030 (6.v.2006)
ww02611	BIH056-08	KF226951	25-Sep-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	645	CC2 SUC2 337659 -7697280
ww02612	BIH057-08	KF226952	25-Sep-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	644	CC2 SUC2 337659 -7697280
ww02613	BIH058-08	KF226953	25-Sep-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	649	CC2 SUC2 337659 -7697280
ww02631	BIH076-08	KF226954	25-Sep-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	649	GP1 339434 -7700088 (25.xi.2006)
ww02632	BIH077-08	KF226955	25-Sep-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	664	GP1 339434 -7700088 (25.xi.2006)
ww02634	BIH079-08	KF226956	25-Sep-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	M	11	6	10	648	GP1 339434 -7700088 (25.xi.2006)
ww02635	BIH080-08	KF226957	25-Sep-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	M	11	6	10	664	GP1 339434 -7700088 (25.xi.2006)

Sample ID	BOLD process ID	GenBank accession #	Collection date	Family	Subfamily	Tribe	Taxa ID	Sex	Morpho sp. #	Genetic sp. # (single threshold)	Genetic sp. # (multple threshold)	DNA barcode length (bp)	Field ID
ww02637	BIH082-08	KF226944	25-Sep-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	M	11	6	10	664	GP1 339434 -7700088 (25.xi.2006)
ww02638	BIH083-08	KF226945	25-Sep-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	M	11	6	10	664	GP1 339434 -7700088 (25.xi.2006)
ww02639	BIH084-08	KF226946	25-Sep-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	M	11	6	10	664	GP1 339434 -7700088 (25.xi.2006)
ww02640	BIH085-08	KF226947	25-Sep-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	M	11	6	10	664	GP1 339434 -7700088 (25.xi.2006)
ww02771	BIH100-08	KF226948	25-Sep-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	646	GP2 339462 -7699882 (25.xi.2006)
ww02816	BIH145-08	KF226949	25-Sep-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	M	11	6	10	646	GP7 337722 -7699467 (25.xi.2006)
ww02817	BIH146-08	KF226950	25-Sep-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	646	GP7 337722 -7699467 (25.xi.2006)
ww02835	BIH164-08	KF226925	25-Sep-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	646	GPX 338920 -7699669 (25.xi.2006)
ww02924	BIH253-08	KF226935	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	M	11	6	10	560	NO2 328302 -7699494 (06.v.2006)
ww03293	BIH289-08	KF226936	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	M	11	6	10	673	NO4 340913 -7707558 (6.v.2006)
ww03294	BIH290-08	KF226937	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	673	NO4 340913 -7707558 (6.v.2006)
ww03360	BIH356-08	KF226938	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	M	11	6	10	654	NO6 336875 -7699467 (6.v.2006)
ww03361	BIH357-08	KF226939	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	631	NO6 336875 -7699467 (6.v.2006)
ww03362	BIH358-08	KF226940	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	M	11	6	10	636	NO6 336875 -7699467 (6.v.2006)
ww03363	BIH359-08	KF226941	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	639	NO6 336875 -7699467 (6.v.2006)
ww03398	BIH394-08	KF226942	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	654	NO9 332830 -7700852 (6.v.2006)
ww03417	BIH413-08	KF226943	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	638	N11 330953 -7697537 (6.v.2006)
ww03440	BIH436-08	KF226927	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	635	N12 336746 -7695664 (6.v.2006)
ww03452	BIH448-08	KF226928	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	629	N13 332808 -7694467 (6.v.2006)
ww03464	BIH460-08	KF226929	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	M	11	6	10	635	N14 336303 -7698063 (6.v.2006)
ww03465	BIH461-08	KF226930	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	634	N14 336303 -7698063 (6.v.2006)
ww03466	BIH462-08	KF226931	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	M	11	6	10	657	N14 336303 -7698063 (6.v.2006)
ww03619	BIH514-08	KF226932	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	M	11	6	10	563	N16 328564 -7699486 (6.v.2006)
ww03649	BIH544-08	KF226933	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	626	N19 327609 -7691950 (6.v.2006)
ww03889	BIH567-08	KF226934	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	F	11	6	10	622	N22 335631 -7695646 (6.v.2006)
ww03937	BIH615-08	KF226926	06-May-2006	Flatidae	Flatinae	Phantiini	*Falcophantis westcotti*	M	11	6	10	645	N27 326266 -7691041 (6.v.2006)
ww02766	BIH095-08	KF226805	25-Sep-2006	Caliscelidae			Caliscelidae sp.12 indet.	M	12	5	9	646	GP1 339434 -7700088 (25.xi.2006)
ww03591	BIH486-08	KF226804	06-May-2006	Caliscelidae			Caliscelidae sp.12 indet.	M	12	5	9	602	N15 336732 -7698579 (6.v.2006)
ww03643	BIH538-08	KF226727	06-May-2006	Tropiduchidae	Tropiduchinae	Gaetuliini	*Alleloplasis* sp.13 indet.	F	13	8	14	607	N18 332462 -7694562 (6.v.2006)
ww03659	BIH554-08	KF226733	06-May-2006	Tropiduchidae	Tropiduchinae	Gaetuliini	*Alleloplasis* sp.13 indet.	F	13	8	14	639	N19 327609 -7691950 (6.v.2006)
ww03660	BIH555-08	KF226729	06-May-2006	Tropiduchidae	Tropiduchinae	Gaetuliini	*Alleloplasis* sp.13 indet.	F	13	8	14	635	N19 327609 -7691950 (6.v.2006)
ww02767	BIH096-08	KF226732	25-Sep-2006	Tropiduchidae	Tropiduchinae	Gaetuliini	*Alleloplasis* sp.14 indet.	M	14	9	14	646	GP1 339434 -7700088 (25.xi.2006)
ww03442	BIH438-08	KF226731	06-May-2006	Tropiduchidae	Tropiduchinae	Gaetuliini	*Alleloplasis* sp.14 indet.	M	14	9	14	634	N12 336746 -7695664 (6.v.2006)
ww05161	BIH672-09	KF226728	05-Jan-2007	Tropiduchidae	Tropiduchinae	Gaetuliini	*Alleloplasis* sp.14 indet.	M	14	9	14	584	No1a 01.v.2007 BI
ww05162	BIH673-09	KF226736	05-Jan-2007	Tropiduchidae	Tropiduchinae	Gaetuliini	*Alleloplasis* sp.14 indet.	F	14	9	14	569	No1a 01.v.2007 BI
ww05163	BIH674-09	KF226735	05-Jan-2007	Tropiduchidae	Tropiduchinae	Gaetuliini	*Alleloplasis* sp.14 indet.	M	14	9	14	624	No1a 01.v.2007 BI
ww05164	BIH675-09	KF226734	05-Jan-2007	Tropiduchidae	Tropiduchinae	Gaetuliini	*Alleloplasis* sp.14 indet.	M	14	9	14	607	No1a 01.v.2007 BI

Sample ID	BOLD process ID	GenBank accession #	Collection date	Family	Subfamily	Tribe	Taxa ID	Sex	Morpho sp. #	Genetic sp. # (single threshold)	Genetic sp. # (multple threshold)	DNA barcode length (bp)	Field ID
ww02890	BIH219-08	KF227160	06-May-2006	Tropiduchidae	Tropiduchinae	Tropiduchini	*Oligaethus* sp.15 indet.	M	15	10	14	573	NO1 339118 -7796272 (06.v.2006)
ww02920	BIH249-08	KF227159	06-May-2006	Tropiduchidae	Tropiduchinae	Tropiduchini	*Oligaethus* sp.15 indet.	M	15	10	14	573	NO2 328302 -7699494 (06.v.2006)
ww03647	BIH542-08	KF227161	06-May-2006	Tropiduchidae	Tropiduchinae	Tropiduchini	*Oligaethus* sp.15 indet.	F	15	10	14	636	N19 327609 -7691950 (6.v.2006)
ww03292	BIH288-08	KF227113	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.16 indet.	F	16	2	2	639	NO4 340913 -7707558 (6.v.2006)
ww03401	BIH397-08	KF227119	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.16 indet.	F	16	2	3	629	N10 330643 -7696589 (6.v.2006)
ww03403	BIH399-08	KF227121	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.16 indet.	M	16	2	3	630	N10 330643 -7696589 (6.v.2006)
ww03467	BIH463-08	KF227107	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.16 indet.	M	16	2	4	639	N14 336303 -7698063 (6.v.2006)
ww03637	BIH532-08	KF227106	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.16 indet.	F	16	2	3	650	N18 332462 -7694562 (6.v.2006)
ww03653	BIH548-08	KF227115	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.16 indet.	M	16	2	3	625	N19 327609 -7691950 (6.v.2006)
ww03919	BIH597-08	KF227118	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.16 indet.	F	16	2	4	646	N26 337148 -7697314 (6.v.2006)
ww02926	BIH255-08	KF227104	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.17 indet.	F	17	1	1	490	NO2 328302 -7699494 (06.v.2006)
ww03370	BIH366-08	KF227108	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.17 indet.	M	17	1	1	653	NO7 331945 – 7697180 (6.v.2006)
ww03371	BIH367-08	KF227109	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.17 indet.	M	17	1	1	654	NO7 331945 – 7697180 (6.v.2006)
ww03402	BIH398-08	KF227120	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.17 indet.	F	17	1	1	629	N10 330643 -7696589 (6.v.2006)
ww03404	BIH400-08	KF227117	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.17 indet.	M	17	1	1	641	N10 330643 -7696589 (6.v.2006)
ww03405	BIH401-08	KF227089	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.17 indet.	M	17	1	1	586	N10 330643 -7696589 (6.v.2006)
ww03592	BIH487-08	KF227088	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.17 indet.	M	17	1	1	598	N15 336732 -7698579 (6.v.2006)
ww02591	BIH036-08	KF226801	25-Sep-2006	Nogodinidae	Nogodininae	Lipocalliini	*Bilbilicallia* sp.18 indet.	M	18	3	5	644	CC2 337659 -7697280 (25.ix.2006)
ww02644	BIH089-08	KF226803	25-Sep-2006	Nogodinidae	Nogodininae	Lipocalliini	*Bilbilicallia* sp.18 indet.	M	18	3	5	664	GP1 339434 -7700088 (25.xi.2006)
ww02925	BIH254-08	KF226802	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Bilbilicallia* sp.18 indet.	F	18	3	5	593	NO2 328302 -7699494 (06.v.2006)
ww02572	BIH017-08	KF227105	15-Mar-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	M	19	4	7	624	CC1 337391 -7697313 (15.iii.2006)
ww02923	BIH252-08	KF227102	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	M	19	4	8	639	NO2 328302 -7699494 (06.v.2006)
ww03302	BIH298-08	KF227094	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	F	19	4	8	572	NO5 334264 -7691974 (6.v.2006)
ww03303	BIH299-08	KF227095	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	F	19	4	8	614	NO5 334264 -7691974 (6.v.2006)
ww03304	BIH300-08	KF227096	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	F	19	4	8	573	NO5 334264 -7691974 (6.v.2006)
ww03305	BIH301-08	KF227097	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	F	19	4	8	495	NO5 334264 -7691974 (6.v.2006)
ww03306	BIH302-08	KF227098	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	F	19	4	8	461	NO5 334264 -7691974 (6.v.2006)
ww03359	BIH355-08	KF227110	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	M	19	4	8	326	NO6 336875 -7699467 (6.v.2006)
ww03372	BIH368-08	KF227111	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	M	19	4	8	614	NO7 331945 – 7697180 (6.v.2006)
ww03418	BIH414-08	KF227112	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	M	19	4	8	309	N11 330953 -7697537 (6.v.2006)
ww03444	BIH440-08	KF227125	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	F	19	4	8	605	N13 332808 -7694467 (6.v.2006)
ww03445	BIH441-08	KF227093	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	F	19	4	8	520	N13 332808 -7694467 (6.v.2006)
ww03446	BIH442-08	KF227092	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	F	19	4	8	557	N13 332808 -7694467 (6.v.2006)
ww03447	BIH443-08	KF227091	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	F	19	4	8	630	N13 332808 -7694467 (6.v.2006)
ww03448	BIH444-08	KF227099	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	M	19	4	7	612	N13 332808 -7694467 (6.v.2006)
ww03605	BIH500-08	KF227123	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	F	19	4	7	653	N15 336732 -7698579 (6.v.2006)
ww03632	BIH527-08	KF227103	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	F	19	4	8	281	N17 328860 -7699341 (6.v.2006)

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ww03638	BIH533-08	KF227124	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	F	19	4	8	291	N18 332462 -7694562 (6.v.2006)
ww03650	BIH545-08	KF227114	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	M	19	4	8	305	N19 327609 -7691950 (6.v.2006)
ww03652	BIH547-08	KF227116	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	M	19	4	6	626	N19 327609 -7691950 (6.v.2006)
ww03667	BIH562-08	KF227090	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	M	19	4	8	309	N20 338368 -7704749 (6.v.2006)
ww03668	BIH563-08	KF227087	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	M	19	4	8	306	N20 338368 -7704749 (6.v.2006)
ww03669	BIH564-08	KF227122	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	M	19	4	8	305	N20 338368 -7704749 (6.v.2006)
ww03918	BIH596-08	KF227101	06-May-2006	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	F	19	4	8	635	N26 337148 -7697314 (6.v.2006)
ww05155	BIH666-09	KF227100	05-Jan-2007	Nogodinidae	Nogodininae	Lipocalliini	*Lipocallia* sp.19 indet.	F	19	4	8	646	No7b 01.v.2007 BI
ww02626	BIH071-08	KF226799	25-Sep-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus angustatus*	F	20	26	32	470	CMP BZP 338118 -7696272
ww03300	BIH296-08	KF226800	06-May-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus angustatus*	M	20	26	32	635	NO5 334264 -7691974 (6.v.2006)
ww03336	BIH332-08	KF226797	06-May-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus angustatus*	F	20	26	32	645	NO6 336875 -7699467 (6.v.2006)
ww03470	BIH466-08	KF226796	06-May-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus angustatus*	F	20	26	32	638	N14 336303 -7698063 (6.v.2006)
ww03471	BIH467-08	KF226795	06-May-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus angustatus*	F	20	26	32	640	N14 336303 -7698063 (6.v.2006)
ww03595	BIH490-08	KF226798	06-May-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus angustatus*	F	20	26	32	603	N15 336732 -7698579 (6.v.2006)
ww02616	BIH061-08	KF226789	25-Sep-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus adventitiosus*	F	21	25	29	639	CC2 SUC2 337659 -7697280
ww02645	BIH090-08	KF226784	25-Sep-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus adventitiosus*	F	21	25	31	664	GP1 339434 -7700088 (25.xi.2006)
ww02773	BIH102-08	KF226793	25-Sep-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus adventitiosus*	F	21	25	31	646	GP2 339462 -7699882 (25.xi.2006)
ww03299	BIH295-08	KF226792	06-May-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus adventitiosus*	M	21	25	30	588	NO5 334264 -7691974 (6.v.2006)
ww03301	BIH297-08	KF226790	06-May-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus adventitiosus*	M	21	25	30	617	NO5 334264 -7691974 (6.v.2006)
ww03334	BIH330-08	KF226788	06-May-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus adventitiosus*	F	21	25	29	583	NO6 336875 -7699467 (6.v.2006)
ww03335	BIH331-08	KF226787	06-May-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus adventitiosus*	F	21	25	29	587	NO6 336875 -7699467 (6.v.2006)
ww03337	BIH333-08	KF226794	06-May-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus adventitiosus*	F	21	25	29	613	NO6 336875 -7699467 (6.v.2006)
ww03338	BIH334-08	KF226786	06-May-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus adventitiosus*	F	21	25	29	588	NO6 336875 -7699467 (6.v.2006)
ww03593	BIH488-08	KF226785	06-May-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus adventitiosus*	M	21	25	29	599	N15 336732 -7698579 (6.v.2006)
ww03662	BIH557-08	KF226791	06-May-2006	Cicadellidae	Iassinae	Iassini	*Batracomorphus adventitiosus*	M	21	25	29	580	N20 338368 -7704749 (6.v.2006)
ww02579	BIH024-08	KF227270	15-Mar-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	60	319	CC2 337659 -7697280 (15.iii.2006)
ww02596	BIH041-08	KF227267	25-Sep-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	F	22	44	64	615	CC2 337659 -7697280 (25.ix.2006)
ww02597	BIH042-08	KF227266	25-Sep-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	60	613	CC2 337659 -7697280 (25.ix.2006)
ww02598	BIH043-08	KF227284	25-Sep-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	62	615	CC2 337659 -7697280 (25.ix.2006)
ww02599	BIH044-08	KF227283	25-Sep-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	60	612	CC2 337659 -7697280 (25.ix.2006)
ww02600	BIH045-08	KF227282	25-Sep-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	F	22	44	61	615	CC2 SUC2 337659 -7697280
ww02601	BIH046-08	KF227289	25-Sep-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	65	603	CC2 SUC2 337659 -7697280
ww02602	BIH047-08	KF227281	25-Sep-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	60	615	CC2 SUC2 337659 -7697280
ww02603	BIH048-08	KF227288	25-Sep-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	66	640	CC2 SUC2 337659 -7697280
ww02604	BIH049-08	KF227286	25-Sep-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	60	615	CC2 SUC2 337659 -7697280
ww02605	BIH050-08	KF227285	25-Sep-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	60	616	CC2 SUC2 337659 -7697280
ww02642	BIH087-08	KF227293	25-Sep-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	65	664	GP1 339434 -7700088 (25.xi.2006)

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ww02824	BIH153-08	KF227275	25-Sep-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	65	602	GP8 337670 -7699230 (25.xi.2006)
ww02825	BIH154-08	KF227276	25-Sep-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	60	581	GP8 337670 -7699230 (25.xi.2006)
ww02826	BIH155-08	KF227277	25-Sep-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	F	22	44	60	580	GP8 337670 -7699230 (25.xi.2006)
ww02834	BIH163-08	KF227287	25-Sep-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	F	22	44	65	646	GPX 338920 -7699669 (25.xi.2006)
ww02915	BIH244-08	KF227269	06-May-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	60	509	NO2 328302 -7699494 (06.v.2006)
ww02916	BIH245-08	KF227268	06-May-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	F	22	44	60	556	NO2 328302 -7699494 (06.v.2006)
ww02917	BIH246-08	KF227271	06-May-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	60	406	NO2 328302 -7699494 (06.v.2006)
ww02918	BIH247-08	KF227279	06-May-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	62	483	NO2 328302 -7699494 (06.v.2006)
ww02919	BIH248-08	KF227273	06-May-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	65	287	NO2 328302 -7699494 (06.v.2006)
ww03295	BIH291-08	KF227290	06-May-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	F	22	44	62	613	NO5 334264 -7691974 (6.v.2006)
ww03422	BIH418-08	KF227265	06-May-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	67	632	N11 330953 -7697537 (6.v.2006)
ww03449	BIH445-08	KF227278	06-May-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	F	22	44	65	614	N13 332808 -7694467 (6.v.2006)
ww03623	BIH518-08	KF227280	06-May-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	60	598	N16 328564 -7699486 (6.v.2006)
ww03904	BIH582-08	KF227274	06-May-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	M	22	44	65	618	N23 332912 -7697030 (6.v.2006)
ww03905	BIH583-08	KF227272	06-May-2006	Cicadellidae	Tartessinae		*Protartessus spinosus*	F	22	44	65	630	N23 332912 -7697030 (6.v.2006)
ww05152	BIH663-09	KF226966	05-Jan-2007	Cicadellidae	Tartessinae		*Protartessus spinosus*	F	22	44	65	617	No7b 01.v.2007 BI
ww05158	BIH669-09	KF227292	05-Jan-2007	Cicadellidae	Tartessinae		*Protartessus spinosus*	F	22	44	63	602	No1a 01.v.2007 BI
ww02800	BIH129-08	KF227158	25-Sep-2006	Cicadellidae	Tartessinae		*Newmaniana* sp.23 indet.	F	23	45	68	638	GP4 339635 -7700983 (25.xi.2006)
ww03443	BIH439-08	KF227157	06-May-2006	Cicadellidae	Tartessinae		*Newmaniana* sp.23 indet.	F	23	45	68	622	N12 336746 -7695664 (6.v.2006)
ww02581	BIH026-08	KF227352	15-Mar-2006	Cicadellidae	Idiocerinae		*Zaletta webbi*	M	24	46	69	616	CC2 337659 -7697280 (15.iii.2006)
ww02582	BIH027-08	KF227354	15-Mar-2006	Cicadellidae	Idiocerinae		*Zaletta webbi*	F	24	46	69	593	CC2 337659 -7697280 (15.iii.2006)
ww02811	BIH140-08	KF227353	25-Sep-2006	Cicadellidae	Idiocerinae		*Zaletta webbi*	F	24	46	69	646	GP6 337733 -7700903 (25.xi.2006)
ww03581	BIH476-08	KF227355	06-May-2006	Cicadellidae	Idiocerinae		*Zaletta webbi*	M	24	46	69	535	N14 336303 -7698063 (6.v.2006)
ww03608	BIH503-08	KF227351	06-May-2006	Cicadellidae	Idiocerinae		*Zaletta webbi*	M	24	46	69	295	N15 336732 -7698579 (6.v.2006)
ww02584	BIH029-08	KF227207	15-Mar-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	F	25	35	44	609	CC2 337659 -7697280 (15.iii.2006)
ww02590	BIH035-08	KF227202	25-Sep-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	M	25	35	44	631	CC2 337659 -7697280 (25.ix.2006)
ww02606	BIH051-08	KF227210	25-Sep-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	F	25	35	44	600	CC2 SUC2 337659 -7697280
ww02607	BIH052-08	KF227211	25-Sep-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	M	25	35	44	641	CC2 SUC2 337659 -7697280
ww02608	BIH053-08	KF227212	25-Sep-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	M	25	35	44	623	CC2 SUC2 337659 -7697280
ww02609	BIH054-08	KF227213	25-Sep-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	M	25	35	44	650	CC2 SUC2 337659 -7697280
ww02610	BIH055-08	KF227214	25-Sep-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	M	25	35	42	647	CC2 SUC2 337659 -7697280
ww02807	BIH136-08	KF227221	25-Sep-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	M	25	35	44	646	GP5 338740 -770188 (25.xi.2006)
ww02808	BIH137-08	KF227223	25-Sep-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	F	25	35	44	644	GP5 338740 -770188 (25.xi.2006)
ww02809	BIH138-08	KF227204	25-Sep-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	M	25	35	44	646	GP5 338740 -770188 (25.xi.2006)
ww02810	BIH139-08	KF227206	25-Sep-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	M	25	35	44	624	GP5 338740 -770188 (25.xi.2006)
ww02812	BIH141-08	KF227209	25-Sep-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	F	25	35	44	644	GP6 337733 -7700903 (25.xi.2006)
ww02813	BIH142-08	KF227215	25-Sep-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	M	25	35	43	646	GP6 337733 -7700903 (25.xi.2006)

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ww02818	BIH147-08	KF227216	25-Sep-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	F	25	35	44	646	GP7 337722 -7699467 (25.xi.2006)
ww02819	BIH148-08	KF227217	25-Sep-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	M	25	35	44	646	GP7 337722 -7699467 (25.xi.2006)
ww02827	BIH156-08	KF227219	25-Sep-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	M	25	35	44	646	GP8 337670 -7699230 (25.xi.2006)
ww03580	BIH475-08	KF227208	06-May-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	M	25	35	44	636	N14 336303 -7698063 (6.v.2006)
ww03596	BIH491-08	KF227218	06-May-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	F	25	35	44	319	N15 336732 -7698579 (6.v.2006)
ww03597	BIH492-08	KF227222	06-May-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	M	25	35	44	556	N15 336732 -7698579 (6.v.2006)
ww03598	BIH493-08	KF227224	06-May-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	M	25	35	44	592	N15 336732 -7698579 (6.v.2006)
ww03599	BIH494-08	KF227205	06-May-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	F	25	35	44	319	N15 336732 -7698579 (6.v.2006)
ww03924	BIH602-08	KF227220	06-May-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	M	25	35	42	609	N26 337148 -7697314 (6.v.2006)
ww03925	BIH603-08	KF227203	06-May-2006	Cicadellidae	Idiocerinae		*Pascoepus viridiceps*	F	25	35	44	646	N26 337148 -7697314 (6.v.2006)
ww02793	BIH122-08	KF227069	25-Sep-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	F	26	47	69	637	GP4 339635 -7700983 (25.xi.2006)
ww02794	BIH123-08	KF227070	25-Sep-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	M	26	47	69	672	GP4 339635 -7700983 (25.xi.2006)
ww02795	BIH124-08	KF227072	25-Sep-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	F	26	47	69	643	GP4 339635 -7700983 (25.xi.2006)
ww02796	BIH125-08	KF227073	25-Sep-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	M	26	47	69	616	GP4 339635 -7700983 (25.xi.2006)
ww02797	BIH126-08	KF227074	25-Sep-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	M	26	47	69	671	GP4 339635 -7700983 (25.xi.2006)
ww02798	BIH127-08	KF227053	25-Sep-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	F	26	47	69	628	GP4 339635 -7700983 (25.xi.2006)
ww02799	BIH128-08	KF227054	25-Sep-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	M	26	47	69	623	GP4 339635 -7700983 (25.xi.2006)
ww02801	BIH130-08	KF227055	25-Sep-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	M	26	47	69	646	GP4 339635 -7700983 (25.xi.2006)
ww02802	BIH131-08	KF227056	25-Sep-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	M	26	47	69	635	GP4 339635 -7700983 (25.xi.2006)
ww03296	BIH292-08	KF227058	06-May-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	M	26	47	69	636	NO5 334264 -7691974 (6.v.2006)
ww03297	BIH293-08	KF227059	06-May-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	M	26	47	69	634	NO5 334264 -7691974 (6.v.2006)
ww03298	BIH294-08	KF227060	06-May-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	F	26	47	69	653	NO5 334264 -7691974 (6.v.2006)
ww03376	BIH372-08	KF227057	06-May-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	F	26	47	69	558	NO7 331945 – 7697180 (6.v.2006)
ww03377	BIH373-08	KF227061	06-May-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	F	26	47	69	646	NO7 331945 – 7697180 (6.v.2006)
ww03378	BIH374-08	KF227062	06-May-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	F	26	47	69	319	NO7 331945 – 7697180 (6.v.2006)
ww03379	BIH375-08	KF227063	06-May-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	M	26	47	69	319	NO7 331945 – 7697180 (6.v.2006)
ww03380	BIH376-08	KF227064	06-May-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	F	26	47	69	279	NO7 331945 – 7697180 (6.v.2006)
ww03386	BIH382-08	KF227065	06-May-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	M	26	47	69	585	NO9 332830 -7700852 (6.v.2006)
ww03387	BIH383-08	KF227066	06-May-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	M	26	47	69	280	NO9 332830 -7700852 (6.v.2006)
ww03388	BIH384-08	KF227067	06-May-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	M	26	47	69	282	NO9 332830 -7700852 (6.v.2006)
ww03389	BIH385-08	KF227052	06-May-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	M	26	47	69	319	NO9 332830 -7700852 (6.v.2006)
ww03390	BIH386-08	KF227068	06-May-2006	Cicadellidae	Eurymelinae	Ipoini	*Ipoides hackeri*	M	26	47	69	624	NO9 332830 -7700852 (6.v.2006)
ww02949	BIH278-08	KF226855	06-May-2006	Cicadellidae	Deltocephalinae	Hecalini	*Hecalus australis*	M	27	64	85	512	NO4 340913 -7707558 (06.v.2006)
ww02912	BIH241-08	KF227156	06-May-2006	Cicadellidae	Deltocephalinae	Macrostelini	*Nesoclutha* sp.28 indet.	M	28	54	74	639	NO1 339118 -7796272 (06.v.2006)
ww03585	BIH480-08	KF227155	06-May-2006	Cicadellidae	Deltocephalinae	Macrostelini	*Nesoclutha* sp.28 indet.	F	28	54	74	634	N14 336303 -7698063 (6.v.2006)
ww03606	BIH501-08	KF227154	06-May-2006	Cicadellidae	Deltocephalinae	Macrostelini	*Nesoclutha* sp.28 indet.	F	28	54	74	646	N15 336732 -7698579 (6.v.2006)
ww03468	BIH464-08	KF226829	06-May-2006	Cicadellidae	Deltocephalinae	Athysanini	sp.29 indet.	M	29	67	88	631	N14 336303 -7698063 (6.v.2006)

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ww03607	BIH502-08	KF226850	06-May-2006	Cicadellidae	Deltocephalinae	Athysanini	sp.29 indet.	M	29	67	88	648	N15 336732 -7698579 (6.v.2006)
ww05156	BIH667-09	KF226847	05-Jan-2007	Cicadellidae	Deltocephalinae	Athysanini	sp.29 indet.	M	29	67	88	574	No7b 01.v.2007 BI
ww02891	BIH220-08	KF226922	06-May-2006	Cicadellidae	Deltocephalinae	Athysanini	*Exitianus plebeius*	M	30	55	76	661	NO1 339118 -7796272 (06.v.2006)
ww02892	BIH221-08	KF226924	06-May-2006	Cicadellidae	Deltocephalinae	Athysanini	*Exitianus plebeius*	M	30	55	76	668	NO1 339118 -7796272 (06.v.2006)
ww02893	BIH222-08	KF226923	06-May-2006	Cicadellidae	Deltocephalinae	Athysanini	*Exitianus plebeius*	M	30	55	76	657	NO1 339118 -7796272 (06.v.2006)
ww03424	BIH420-08	KF226921	06-May-2006	Cicadellidae	Deltocephalinae	Athysanini	*Exitianus plebeius*	M	30	55	75	629	N11 330953 -7697537 (6.v.2006)
ww02567	BIH012-08	KF226917	15-Mar-2006	Cicadellidae	Deltocephalinae	Athysanini	*Exitianus nanus*	M	31	53	74	319	CC1 337391 -7697313 (15.iii.2006)
ww02843	BIH172-08	KF226916	25-Mar-2006	Cicadellidae	Deltocephalinae	Athysanini	*Exitianus nanus*	M	31	53	74	646	LTR1 337551 -7699293 (15.iii.2006)
ww02887	BIH216-08	KF226915	15-Mar-2006	Cicadellidae	Deltocephalinae	Athysanini	*Exitianus nanus*	M	31	53	74	589	LTR2 339522 -7701069 (15.iii.2006)
ww03368	BIH364-08	KF226919	06-May-2006	Cicadellidae	Deltocephalinae	Athysanini	*Exitianus nanus*	F	31	53	74	592	NO6 336875 -7699467 (6.v.2006)
ww03369	BIH365-08	KF226920	06-May-2006	Cicadellidae	Deltocephalinae	Athysanini	*Exitianus nanus*	F	31	53	74	617	NO6 336875 -7699467 (6.v.2006)
ww03451	BIH447-08	KF226914	06-May-2006	Cicadellidae	Deltocephalinae	Athysanini	*Exitianus nanus*	M	31	53	74	587	N13 332808 -7694467 (6.v.2006)
ww03469	BIH465-08	KF226918	06-May-2006	Cicadellidae	Deltocephalinae	Athysanini	*Exitianus nanus*	F	31	53	74	592	N14 336303 -7698063 (6.v.2006)
ww02840	BIH169-08	KF227126	25-Mar-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas* sp.32 indet.	F	32	57	80	646	LTR1 337551 -7699293 (15.iii.2006)
ww02889	BIH218-08	KF227128	15-Mar-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas* sp.32 indet.	F	32	57	81	517	LTR2 339522 -7701069 (15.iii.2006)
ww02896	BIH225-08	KF227129	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas* sp.32 indet.	F	32	57	81	662	NO1 339118 -7796272 (06.v.2006)
ww03289	BIH285-08	KF227133	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas knighti*	M	33	56	77	583	NO4 340913 -7707558 (6.v.2006)
ww03312	BIH308-08	KF227139	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas knighti*	M	33	56	77	628	NO5 334264 -7691974 (6.v.2006)
ww03354	BIH350-08	KF227142	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas knighti*	M	33	56	78	589	NO6 336875 -7699467 (6.v.2006)
ww03355	BIH351-08	KF227130	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas knighti*	M	33	56	77	631	NO6 336875 -7699467 (6.v.2006)
ww03356	BIH352-08	KF227143	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas knighti*	M	33	56	79	633	NO6 336875 -7699467 (6.v.2006)
ww03357	BIH353-08	KF227131	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas knighti*	M	33	56	77	602	NO6 336875 -7699467 (6.v.2006)
ww03358	BIH354-08	KF227132	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas knighti*	M	33	56	77	649	NO6 336875 -7699467 (6.v.2006)
ww03406	BIH402-08	KF227135	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas knighti*	M	33	56	77	553	N10 330643 -7696589 (6.v.2006)
ww03473	BIH469-08	KF227141	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas knighti*	F	33	56	77	594	N14 336303 -7698063 (6.v.2006)
ww03602	BIH497-08	KF227140	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas knighti*	F	33	56	77	319	N15 336732 -7698579 (6.v.2006)
ww03892	BIH570-08	KF227136	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas knighti*	M	33	56	77	638	N22 335631 -7695646 (6.v.2006)
ww03935	BIH613-08	KF227134	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas knighti*	M	33	56	77	646	N26 337148 -7697314 (6.v.2006)
ww03939	BIH617-08	KF227138	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas knighti*	M	33	56	77	646	N27 326266 -7691041 (6.v.2006)
ww03940	BIH618-08	KF227137	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas knighti*	M	33	56	77	643	N27 326266 -7691041 (6.v.2006)
ww02815	BIH144-08	KF227152	25-Sep-2006	Cicadellidae	Deltocephalinae	Paralimnini	*Mayawa* sp.34 indet.	M	34	66	87	646	GP7 337722 -7699467 (25.xi.2006)
ww03316	BIH312-08	KF227153	06-May-2006	Cicadellidae	Deltocephalinae	Paralimnini	*Mayawa* sp.35 indet.	F	35	65	86	503	NO5 334264 -7691974 (6.v.2006)
ww02570	BIH015-08	KF226846	15-Mar-2006	Cicadellidae	Deltocephalinae	Athysanini	*Arawa* sp.36 indet.	F	36	59	82	563	CC1 337391 -7697313 (15.iii.2006)
ww02881	BIH210-08	KF227185	25-Mar-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.37 indet.	F	37	58	82	556	LTR1 337551 -7699293 (15.iii.2006)
ww03603	BIH498-08	KF227186	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.37 indet.	F	37	58	82	453	N15 336732 -7698579 (6.v.2006)
ww03665	BIH560-08	KF227168	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius canberrensis*	M	38	71	90	643	N20 338368 -7704749 (6.v.2006)
ww03959	BIH637-08	KF227170	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.39 indet.	F	39	70	90	520	N27 326266 -7691041 (6.v.2006)

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ww03960	BIH638-08	KF227169	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.39 indet.	F	39	70	90	636	N27 326266 -7691041 (6.v.2006)
ww03288	BIH284-08	KF227177	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.40 indet.	M	40	69	90	673	NO4 340913 -7707558 (6.v.2006)
ww03942	BIH620-08	KF227175	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.40 indet.	F	40	69	90	319	N27 326266 -7691041 (6.v.2006)
ww03943	BIH621-08	KF227176	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.40 indet.	F	40	69	90	646	N27 326266 -7691041 (6.v.2006)
ww03944	BIH622-08	KF227181	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.40 indet.	F	40	69	90	646	N27 326266 -7691041 (6.v.2006)
ww03945	BIH623-08	KF227179	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.40 indet.	F	40	69	90	614	N27 326266 -7691041 (6.v.2006)
ww03946	BIH624-08	KF227183	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.40 indet.	F	40	69	90	646	N27 326266 -7691041 (6.v.2006)
ww03952	BIH630-08	KF227174	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.40 indet.	M	40	69	90	646	N27 326266 -7691041 (6.v.2006)
ww03953	BIH631-08	KF227173	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.40 indet.	M	40	69	90	632	N27 326266 -7691041 (6.v.2006)
ww03954	BIH632-08	KF227184	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.40 indet.	M	40	69	90	627	N27 326266 -7691041 (6.v.2006)
ww03955	BIH633-08	KF227178	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.40 indet.	M	40	69	90	548	N27 326266 -7691041 (6.v.2006)
ww03956	BIH634-08	KF227172	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.40 indet.	M	40	69	90	570	N27 326266 -7691041 (6.v.2006)
ww03978	BIH656-08	KF227180	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.40 indet.	F	40	69	90	633	N27 326266 -7691041 (6.v.2006)
ww03979	BIH657-08	KF227182	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.40 indet.	M	40	69	90	611	N27 326266 -7691041 (6.v.2006)
ww03980	BIH658-08	KF227171	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.40 indet.	M	40	69	90	622	N27 326266 -7691041 (6.v.2006)
ww03887	BIH565-08	KF227201	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.41 indet.	F	41	68	89	608	N22 335631 -7695646 (6.v.2006)
ww05157	BIH668-09	KF227349	05-Jan-2007	Cicadellidae	Ulopinae	Ulopini	?*Kahavalu* sp.42 indet.	F	42	14	17	624	NO6 336875 -7699467 (6.v.2006)
ww03364	BIH360-08	KF227166	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius argentatus*	M	43	73	91	567	NO6 336875 -7699467 (6.v.2006)
ww03365	BIH361-08	KF227167	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius argentatus*	M	43	72	91	587	NO6 336875 -7699467 (6.v.2006)
ww03934	BIH612-08	KF227165	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius argentatus*	M	43	72	91	630	N26 337148 -7697314 (6.v.2006)
ww03936	BIH614-08	KF227164	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius argentatus*	M	43	72	91	618	N26 337148 -7697314 (6.v.2006)
ww03958	BIH636-08	KF227163	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius* sp.44 indet.	F	44	74	91	534	N27 326266 -7691041 (6.v.2006)
ww02897	BIH226-08	KF227193	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius orientalis*	M	45	76	94	657	NO1 339118 -7796272 (06.v.2006)
ww02900	BIH229-08	KF227197	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius orientalis*	F	45	76	96	608	NO1 339118 -7796272 (06.v.2006)
ww02940	BIH269-08	KF227189	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius orientalis*	F	45	76	96	570	NO2 328302 -7699494 (06.v.2006)
ww02942	BIH271-08	KF227198	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius orientalis*	F	45	76	95	587	NO2 328302 -7699494 (06.v.2006)
ww02943	BIH272-08	KF227200	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius orientalis*	M	45	75	92	581	NO2 328302 -7699494 (06.v.2006)
ww03419	BIH415-08	KF227188	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius orientalis*	M	45	75	92	581	N11 330953 -7697537 (6.v.2006)
ww03610	BIH505-08	KF227187	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius orientalis*	M	45	76	93	507	N16 328564 -7699486 (6.v.2006)
ww03611	BIH506-08	KF227196	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius orientalis*	M	45	76	93	319	N16 328564 -7699486 (6.v.2006)
ww03612	BIH507-08	KF227195	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius orientalis*	F	45	76	96	548	N16 328564 -7699486 (6.v.2006)
ww03614	BIH509-08	KF227190	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius orientalis*	M	45	76	96	319	N16 328564 -7699486 (6.v.2006)
ww03615	BIH510-08	KF227199	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius orientalis*	F	45	76	96	594	N16 328564 -7699486 (6.v.2006)
ww03917	BIH595-08	KF227191	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius orientalis*	M	45	76	95	646	N26 337148 -7697314 (6.v.2006)
ww03926	BIH604-08	KF227194	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius orientalis*	F	45	76	96	614	N26 337148 -7697314 (6.v.2006)
ww03932	BIH610-08	KF227192	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Orosius orientalis*	M	45	76	96	628	N26 337148 -7697314 (6.v.2006)
ww03310	BIH306-08	KF226854	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	M	46	36	51	657	NO5 334264 -7691974 (6.v.2006)

Sample ID	BOLD process ID	GenBank accession #	Collection date	Family	Subfamily	Tribe	Taxa ID	Sex	Morpho sp. #	Genetic sp. # (single threshold)	Genetic sp. # (multple threshold)	DNA barcode length (bp)	Field ID
ww03311	BIH307-08	KF226853	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	M	46	36	45	644	NO5 334264 -7691974 (6.v.2006)
ww03313	BIH309-08	KF226852	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	F	46	36	45	644	NO5 334264 -7691974 (6.v.2006)
ww03314	BIH310-08	KF226851	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	F	46	36	51	613	NO5 334264 -7691974 (6.v.2006)
ww03349	BIH345-08	KF226839	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	M	46	36	45	596	NO6 336875 -7699467 (6.v.2006)
ww03350	BIH346-08	KF226838	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	M	46	36	45	623	NO6 336875 -7699467 (6.v.2006)
ww03351	BIH347-08	KF226834	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	M	46	36	45	597	NO6 336875 -7699467 (6.v.2006)
ww03352	BIH348-08	KF226833	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	F	46	36	50	651	NO6 336875 -7699467 (6.v.2006)
ww03353	BIH349-08	KF226828	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	F	46	36	45	637	NO6 336875 -7699467 (6.v.2006)
ww03366	BIH362-08	KF226861	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	F	46	36	48	646	NO6 336875 -7699467 (6.v.2006)
ww03367	BIH363-08	KF226860	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	F	46	36	45	624	No1a 01.v.2007 BI
ww03407	BIH403-08	KF226844	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	M	46	36	45	636	N10 330643 -7696589 (6.v.2006)
ww03408	BIH404-08	KF226843	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	M	46	36	49	626	N10 330643 -7696589 (6.v.2006)
ww03409	BIH405-08	KF226842	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	M	46	36	47	640	N10 330643 -7696589 (6.v.2006)
ww03410	BIH406-08	KF226841	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	F	46	36	46	628	N10 330643 -7696589 (6.v.2006)
ww03429	BIH425-08	KF226858	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	M	46	36	45	637	N11 330953 -7697537 (6.v.2006)
ww03472	BIH468-08	KF226832	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	F	46	36	45	643	N14 336303 -7698063 (6.v.2006)
ww03636	BIH531-08	KF226849	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	F	46	36	48	522	N18 332462 -7694562 (6.v.2006)
ww03655	BIH550-08	KF226837	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	F	46	36	45	640	N19 327609 -7691950 (6.v.2006)
ww03656	BIH551-08	KF226840	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	F	46	36	45	635	N19 327609 -7691950 (6.v.2006)
ww03657	BIH552-08	KF226859	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	F	46	36	48	576	N19 327609 -7691950 (6.v.2006)
ww03658	BIH553-08	KF226848	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	F	46	36	48	545	N19 327609 -7691950 (6.v.2006)
ww03923	BIH601-08	KF226831	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.46 indet.	M	46	36	48	646	N26 337148 -7697314 (6.v.2006)
ww02952	BIH281-08	KF226830	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	sp.47 indet.	F	47	37	52	542	NO4 340913 -7707558 (06.v.2006)
ww02580	BIH025-08	KF227050	15-Mar-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Horouta* sp.48 indet.	M	48	63	84	646	CC2 337659 -7697280 (15.iii.2006)
ww03315	BIH311-08	KF227049	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Horouta* sp.48 indet.	F	48	63	84	626	NO5 334264 -7691974 (6.v.2006)
ww03888	BIH566-08	KF227051	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Horouta austrina*	M	49	60	83	613	N22 335631 -7695646 (6.v.2006)
ww03396	BIH392-08	KF227322	06-May-2006	Cicadellidae	Deltocephalinae	Paralimnini	*Soractellus* sp.50 indet.	F	50	61	83	640	NO9 332830 -7700852 (6.v.2006)
ww02927	BIH256-08	KF227127	06-May-2006	Cicadellidae	Deltocephalinae	Deltocephalini	*Maiestas* sp.51 indet.	F	51	62	84	601	NO2 328302 -7699494 (06.v.2006)
ww03903	BIH581-08	KF226959	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Goniagnathus* sp.52 indet.	F	52	52	73	631	N23 332912 -7697030 (6.v.2006)
ww03453	BIH449-08	KF226777	06-May-2006	Cicadellidae	Deltocephalinae	Macrostelini	*Balclutha incisa*	M	53	49	71	514	N13 332808 -7694467 (6.v.2006)
ww03583	BIH478-08	KF226776	06-May-2006	Cicadellidae	Deltocephalinae	Macrostelini	*Balclutha incisa*	M	53	49	71	316	N14 336303 -7698063 (6.v.2006)
ww03601	BIH496-08	KF226778	06-May-2006	Cicadellidae	Deltocephalinae	Macrostelini	*Balclutha incisa*	M	53	49	71	593	N15 336732 -7698579 (6.v.2006)
ww02565	BIH010-08	KF226779	15-Mar-2006	Cicadellidae	Deltocephalinae	Macrostelini	*Balclutha rosea*	M	54	50	71	319	CC1 337391 -7697313 (15.iii.2006)
ww03441	BIH437-08	KF226781	06-May-2006	Cicadellidae	Deltocephalinae	Macrostelini	*Balclutha rosea*	F	54	50	71	632	N12 336746 -7695664 (6.v.2006)
ww03631	BIH526-08	KF226783	06-May-2006	Cicadellidae	Deltocephalinae	Macrostelini	*Balclutha rosea*	F	54	50	71	628	N17 328860 -7699341 (6.v.2006)
ww03664	BIH559-08	KF226780	06-May-2006	Cicadellidae	Deltocephalinae	Macrostelini	*Balclutha rosea*	F	54	50	71	641	N20 338368 -7704749 (6.v.2006)
ww03938	BIH616-08	KF226782	06-May-2006	Cicadellidae	Deltocephalinae	Macrostelini	*Balclutha rosea*	F	54	50	71	601	N27 326266 -7691041 (6.v.2006)

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ww03654	BIH549-08	KF226775	06-May-2006	Cicadellidae	Typhlocybinae	Empoascini	*Austroasca viridigrisea*	F	55	23	27	646	N19 327609 -7691950 (6.v.2006)
ww03913	BIH591-08	KF226773	06-May-2006	Cicadellidae	Typhlocybinae	Empoascini	*Austroasca viridigrisea*	F	55	23	27	319	N26 337148 -7697314 (6.v.2006)
ww03914	BIH592-08	KF226774	06-May-2006	Cicadellidae	Typhlocybinae	Empoascini	*Austroasca viridigrisea*	F	55	23	27	312	N26 337148 -7697314 (6.v.2006)
ww03928	BIH606-08	KF226772	06-May-2006	Cicadellidae	Typhlocybinae	Empoascini	*Austroasca viridigrisea*	M	55	23	27	645	N26 337148 -7697314 (6.v.2006)
ww02905	BIH234-08	KF226771	06-May-2006	Cicadellidae	Typhlocybinae	Empoascini	*Austroasca histrionicula*	M	56	22	27	437	NO1 339118 -7796272 (06.v.2006)
ww02906	BIH235-08	KF226767	06-May-2006	Cicadellidae	Typhlocybinae	Empoascini	*Austroasca histrionicula*	M	56	22	27	556	NO1 339118 -7796272 (06.v.2006)
ww02907	BIH236-08	KF226769	06-May-2006	Cicadellidae	Typhlocybinae	Empoascini	*Austroasca histrionicula*	F	56	22	27	537	NO1 339118 -7796272 (06.v.2006)
ww02908	BIH237-08	KF226770	06-May-2006	Cicadellidae	Typhlocybinae	Empoascini	*Austroasca histrionicula*	M	56	22	27	506	NO1 339118 -7796272 (06.v.2006)
ww02909	BIH238-08	KF226768	06-May-2006	Cicadellidae	Typhlocybinae	Empoascini	*Austroasca histrionicula*	F	56	22	27	507	NO1 339118 -7796272 (06.v.2006)
ww02928	BIH257-08	KF227084	06-May-2006	Cicadellidae	Ulopinae	Cephalelini	*Linacephalus foveolatus*	F	58	34	41	585	NO2 328302 -7699494 (06.v.2006)
ww02929	BIH258-08	KF227086	06-May-2006	Cicadellidae	Ulopinae	Cephalelini	*Linacephalus foveolatus*	M	58	34	41	530	NO2 328302 -7699494 (06.v.2006)
ww03450	BIH446-08	KF227085	06-May-2006	Cicadellidae	Ulopinae	Cephalelini	*Linacephalus foveolatus*	F	58	34	41	618	N13 332808 -7694467 (6.v.2006)
ww02593	BIH038-08	KF226753	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	F	59	28	34	664	CC2 337659 -7697280 (25.ix.2006)
ww02594	BIH039-08	KF226752	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	F	59	28	34	621	CC2 337659 -7697280 (25.ix.2006)
ww02595	BIH040-08	KF226751	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	F	59	28	34	630	CC2 337659 -7697280 (25.ix.2006)
ww02618	BIH063-08	KF226748	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	F	59	28	34	621	CC2 SUC2 337659 -7697280
ww02619	BIH064-08	KF226747	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	F	59	28	34	642	CC2 SUC2 337659 -7697280
ww02620	BIH065-08	KF226746	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	F	59	28	34	621	CC2 SUC2 337659 -7697280
ww02621	BIH066-08	KF226745	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	F	59	28	34	590	CMP BZP 338118 -7696272
ww02622	BIH067-08	KF226744	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	F	59	28	34	594	CMP BZP 338118 -7696272
ww02623	BIH068-08	KF226743	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	M	59	28	34	600	CMP BZP 338118 -7696272
ww02624	BIH069-08	KF226742	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	M	59	28	34	612	CMP BZP 338118 -7696272
ww02625	BIH070-08	KF226741	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	M	59	28	34	594	CMP BZP 338118 -7696272
ww02628	BIH073-08	KF226739	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	M	59	28	34	621	CMP BZP 338118 -7696272
ww02629	BIH074-08	KF226738	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	M	59	28	34	316	CMP BZP 338118 -7696272
ww02630	BIH075-08	KF226737	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	M	59	28	34	620	CMP BZP 338118 -7696272
ww02790	BIH119-08	KF226756	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	F	59	28	34	507	GP3 339424 -7700784 (25.xi.2006)
ww02836	BIH165-08	KF226764	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* sp.59 indet.	F	59	28	34	630	GPX 338920 -7699669 (25.xi.2006)
ww03319	BIH315-08	KF226866	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara* n.spZ06	M	60	29	34	535	NO5 334264 -7691974 (6.v.2006)
ww03326	BIH322-08	KF226867	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara* n.spZ06	M	60	29	34	646	NO5 334264 -7691974 (6.v.2006)
ww02575	BIH020-08	KF226880	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	F	61	30	34	607	CC1 337391 -7697313 (25.ix.2006)
ww02576	BIH021-08	KF226882	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	F	61	30	34	618	CC1 337391 -7697313 (25.ix.2006)
ww02617	BIH062-08	KF226871	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	F	61	30	34	625	CC2 SUC2 337659 -7697280
ww02627	BIH072-08	KF226873	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	M	61	30	34	630	CMP BZP 338118 -7696272
ww02646	BIH091-08	KF226881	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	F	61	30	34	599	GP1 339434 -7700088 (25.xi.2006)
ww02647	BIH092-08	KF226869	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	M	61	30	34	599	GP1 339434 -7700088 (25.xi.2006)
ww02648	BIH093-08	KF226875	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	M	61	30	34	644	GP1 339434 -7700088 (25.xi.2006)

Sample ID	BOLD process ID	GenBank accession #	Collection date	Family	Subfamily	Tribe	Taxa ID	Sex	Morpho sp. #	Genetic sp. # (single threshold)	Genetic sp. # (multple threshold)	DNA barcode length (bp)	Field ID
ww03318	BIH314-08	KF226876	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	M	61	30	34	659	NO5 334264 -7691974 (6.v.2006)
ww03325	BIH321-08	KF226870	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	M	61	30	34	507	NO5 334264 -7691974 (6.v.2006)
ww03436	BIH432-08	KF226872	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	F	61	30	34	609	N12 336746 -7695664 (6.v.2006)
ww03438	BIH434-08	KF226877	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	M	61	30	34	572	N12 336746 -7695664 (6.v.2006)
ww03439	BIH435-08	KF226878	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	M	61	30	34	565	N12 336746 -7695664 (6.v.2006)
ww03922	BIH600-08	KF226874	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	F	61	30	34	626	N26 337148 -7697314 (6.v.2006)
ww03929	BIH607-08	KF226868	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	M	61	30	34	618	N26 337148 -7697314 (6.v.2006)
ww03930	BIH608-08	KF226883	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	M	61	30	34	319	N26 337148 -7697314 (6.v.2006)
ww03931	BIH609-08	KF226879	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Empoascanara peregrina*	M	61	30	34	319	N26 337148 -7697314 (6.v.2006)
ww02641	BIH086-08	KF227366	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02	M	62	32	37	619	GP1 339434 -7700088 (25.xi.2006)
ww02649	BIH094-08	KF227370	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02	M	62	32	37	621	GP1 339434 -7700088 (25.xi.2006)
ww02774	BIH103-08	KF227361	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02	F	62	32	36	646	GP2 339462 -7699882 (25.xi.2006)
ww02775	BIH104-08	KF227360	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02	F	62	32	36	646	GP2 339462 -7699882 (25.xi.2006)
ww02776	BIH105-08	KF227375	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02	M	62	32	36	645	GP2 339462 -7699882 (25.xi.2006)
ww02777	BIH106-08	KF227374	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02	M	62	32	36	646	GP2 339462 -7699882 (25.xi.2006)
ww02778	BIH107-08	KF227372	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02	M	62	32	37	630	GP2 339462 -7699882 (25.xi.2006)
ww02779	BIH108-08	KF227368	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02	M	62	32	37	646	GP2 339462 -7699882 (25.xi.2006)
ww02780	BIH109-08	KF227363	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02	M	62	32	36	646	GP2 339462 -7699882 (25.xi.2006)
ww02781	BIH110-08	KF227362	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02	M	62	32	36	606	GP2 339462 -7699882 (25.xi.2006)
ww02783	BIH112-08	KF227359	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02	F	62	32	37	646	GP2 339462 -7699882 (25.xi.2006)
ww02785	BIH114-08	KF227358	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02	M	62	32	36	646	GP2 339462 -7699882 (25.xi.2006)
ww03290	BIH286-08	KF227364	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02	M	62	32	38	632	NO4 340913 -7707558 (6.v.2006)
ww03291	BIH287-08	KF227365	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02	M	62	32	38	631	NO4 340913 -7707558 (6.v.2006)
ww05167	BIH678-09	KF227348	05-Jan-2007	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02	F	62	32	38	594	No1a 01.v.2007 BI
ww03957	BIH635-08	KF227048	06-May-2006	Cicadellidae	Deltocephalinae	Opsiini	*Hishimonus* sp. 63 indet.	F	63	51	72	575	N27 326266 -7691041 (6.v.2006)
ww02820	BIH149-08	KF226750	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* n.sp23A	M	65	33	40	627	GP7 337722 -7699467 (25.xi.2006)
ww02821	BIH150-08	KF226760	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* n.sp23A	M	65	33	40	611	GP7 337722 -7699467 (25.xi.2006)
ww02822	BIH151-08	KF226757	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* n.sp23A	M	65	33	40	575	GP7 337722 -7699467 (25.xi.2006)
ww02823	BIH152-08	KF226758	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* n.sp23A	M	65	33	40	640	GP7 337722 -7699467 (25.xi.2006)
ww02828	BIH157-08	KF226759	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* n.sp23A	M	65	33	40	613	GP8 337670 -7699230 (25.xi.2006)
ww02830	BIH159-08	KF226761	25-Sep-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* n.sp23A	M	65	33	40	640	GP8 337670 -7699230 (25.xi.2006)
ww02931	BIH260-08	KF227377	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* n.sp23A	M	65	33	40	505	NO2 328302 -7699494 (06.v.2006)
ww02932	BIH261-08	KF227376	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* n.sp23A	F	65	33	40	319	NO2 328302 -7699494 (06.v.2006)
ww02933	BIH262-08	KF226762	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* n.sp23A	M	65	33	40	613	NO2 328302 -7699494 (06.v.2006)
ww03383	BIH379-08	KF226754	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* n.sp23A	F	65	33	40	618	NO7 331945 – 7697180 (6.v.2006)
ww03385	BIH381-08	KF226755	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* n.sp23A	M	65	33	40	629	NO7 331945 – 7697180 (6.v.2006)
ww03432	BIH428-08	KF226740	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* n.sp23A	M	65	33	40	496	N11 330953 -7697537 (6.v.2006)

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ww03433	BIH429-08	KF226749	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* n.sp23A	M	65	33	40	488	N11 330953 -7697537 (6.v.2006)
ww03627	BIH522-08	KF226763	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	*Anzygina* n.sp23A	M	65	33	40	315	N17 328860 -7699341 (6.v.2006)
ww02930	BIH259-08	KF226766	06-May-2006	Cicadellidae	Megophthalminae	Agalliini	*Austroagallia torrida*	M	68	27	33	493	NO2 328302 -7699494 (06.v.2006)
ww03397	BIH393-08	KF226765	06-May-2006	Cicadellidae	Megophthalminae	Agalliini	*Austroagallia torrida*	F	68	27	33	629	NO9 332830 -7700852 (6.v.2006)
ww03584	BIH479-08	KF227371	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02A	M	69	31	35	295	N14 336303 -7698063 (6.v.2006)
ww03590	BIH485-08	KF227373	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02A	M	69	31	35	280	N15 336732 -7698579 (6.v.2006)
ww03907	BIH585-08	KF227369	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02A	M	69	31	35	636	N26 337148 -7697314 (6.v.2006)
ww03908	BIH586-08	KF227367	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02A	M	69	31	35	646	N26 337148 -7697314 (6.v.2006)
ww03909	BIH587-08	KF227357	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02A	F	69	31	35	646	N26 337148 -7697314 (6.v.2006)
ww03910	BIH588-08	KF227356	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02A	F	69	31	35	646	N26 337148 -7697314 (6.v.2006)
ww03911	BIH589-08	KF227378	06-May-2006	Cicadellidae	Typhlocybinae	Erythroneurini	New genus ZA, sp02A	F	69	31	35	636	N26 337148 -7697314 (6.v.2006)
ww03961	BIH639-08	KF227330	06-May-2006	Cicadellidae	Deltocephalinae	Stenometopiini	*Stirellus* sp.70 indet.	M	70	48	70	513	N27 326266 -7691041 (6.v.2006)
ww03962	BIH640-08	KF227334	06-May-2006	Cicadellidae	Deltocephalinae	Stenometopiini	*Stirellus* sp.70 indet.	F	70	48	70	550	N27 326266 -7691041 (6.v.2006)
ww03963	BIH641-08	KF227329	06-May-2006	Cicadellidae	Deltocephalinae	Stenometopiini	*Stirellus* sp.70 indet.	M	70	48	70	600	N27 326266 -7691041 (6.v.2006)
ww03965	BIH643-08	KF227328	06-May-2006	Cicadellidae	Deltocephalinae	Stenometopiini	*Stirellus* sp.70 indet.	M	70	48	70	556	N27 326266 -7691041 (6.v.2006)
ww03966	BIH644-08	KF227327	06-May-2006	Cicadellidae	Deltocephalinae	Stenometopiini	*Stirellus* sp.70 indet.	M	70	48	70	293	N27 326266 -7691041 (6.v.2006)
ww03969	BIH647-08	KF227325	06-May-2006	Cicadellidae	Deltocephalinae	Stenometopiini	*Stirellus* sp.70 indet.	F	70	48	70	615	N27 326266 -7691041 (6.v.2006)
ww03970	BIH648-08	KF227336	06-May-2006	Cicadellidae	Deltocephalinae	Stenometopiini	*Stirellus* sp.70 indet.	F	70	48	70	621	N27 326266 -7691041 (6.v.2006)
ww03971	BIH649-08	KF227326	06-May-2006	Cicadellidae	Deltocephalinae	Stenometopiini	*Stirellus* sp.70 indet.	M	70	48	70	623	N27 326266 -7691041 (6.v.2006)
ww03972	BIH650-08	KF227332	06-May-2006	Cicadellidae	Deltocephalinae	Stenometopiini	*Stirellus* sp.70 indet.	M	70	48	70	529	N27 326266 -7691041 (6.v.2006)
ww03973	BIH651-08	KF227333	06-May-2006	Cicadellidae	Deltocephalinae	Stenometopiini	*Stirellus* sp.70 indet.	F	70	48	70	626	N27 326266 -7691041 (6.v.2006)
ww03974	BIH652-08	KF227335	06-May-2006	Cicadellidae	Deltocephalinae	Stenometopiini	*Stirellus* sp.70 indet.	F	70	48	70	597	N27 326266 -7691041 (6.v.2006)
ww03976	BIH654-08	KF227324	06-May-2006	Cicadellidae	Deltocephalinae	Stenometopiini	*Stirellus* sp.70 indet.	M	70	48	70	518	N27 326266 -7691041 (6.v.2006)
ww02833	BIH162-08	KF226863	25-Sep-2006	Cicadellidae	Deltocephalinae	Stenometopiini	sp.71 indet.	F	71	38	53	646	GP9 338695 -7699237 (25.xi.2006)
ww02803	BIH132-08	KF227296	25-Sep-2006	Membracidae	Centrotinae	Terentiini	*Rigula* sp.72 indet.	M	72	24	28	640	GP4 339635 -7700983 (25.xi.2006)
ww03327	BIH323-08	KF227297	06-May-2006	Membracidae	Centrotinae	Terentiini	*Rigula* sp.72 indet.	F	72	24	28	648	NO5 334264 -7691974 (6.v.2006)
ww03328	BIH324-08	KF227295	06-May-2006	Membracidae	Centrotinae	Terentiini	*Rigula* sp.72 indet.	F	72	24	28	645	NO5 334264 -7691974 (6.v.2006)
ww02863	BIH192-08	KF227083	25-Mar-2006	Cicadellidae	Deltocephalinae	Athysanini	*Limotettix incertus*	F	73	43	59	398	LTR1 337551 -7699293 (15.iii.2006)
ww02867	BIH196-08	KF227079	25-Mar-2006	Cicadellidae	Deltocephalinae	Athysanini	*Limotettix incertus*	F	73	43	59	224	LTR1 337551 -7699293 (15.iii.2006)
ww02888	BIH217-08	KF227080	15-Mar-2006	Cicadellidae	Deltocephalinae	Athysanini	*Limotettix incertus*	F	73	43	59	668	LTR2 339522 -7701069 (15.iii.2006)
ww02894	BIH223-08	KF227082	06-May-2006	Cicadellidae	Deltocephalinae	Athysanini	*Limotettix incertus*	M	73	43	59	668	NO1 339118 -7796272 (06.v.2006)
ww03604	BIH499-08	KF227081	06-May-2006	Cicadellidae	Deltocephalinae	Athysanini	*Limotettix incertus*	F	73	43	59	649	N15 336732 -7698579 (6.v.2006)
ww02592	BIH037-08	KF226902	25-Sep-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 74 indet	F	74	40	54	664	CC2 337659 -7697280 (25.ix.2006)
ww02614	BIH059-08	KF226884	25-Sep-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	F	75	39	54	593	CC2 SUC2 337659 -7697280
ww02615	BIH060-08	KF226904	25-Sep-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	665	CC2 SUC2 337659 -7697280

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ww02643	BIH088-08	KF226912	25-Sep-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	654	GP1 339434 -7700088 (25.xi.2006)
ww02814	BIH143-08	KF226908	25-Sep-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	319	GP6 337733 -7700903 (25.xi.2006)
ww03339	BIH335-08	KF226900	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	F	75	39	54	551	NO6 336875 -7699467 (6.v.2006)
ww03340	BIH336-08	KF226899	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	F	75	39	54	598	NO6 336875 -7699467 (6.v.2006)
ww03341	BIH337-08	KF226896	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	574	NO6 336875 -7699467 (6.v.2006)
ww03342	BIH338-08	KF226895	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	319	NO6 336875 -7699467 (6.v.2006)
ww03343	BIH339-08	KF226894	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	556	NO6 336875 -7699467 (6.v.2006)
ww03374	BIH370-08	KF226889	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	607	NO7 331945 – 7697180 (6.v.2006)
ww03399	BIH395-08	KF226888	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	579	NO9 332830 -7700852 (6.v.2006)
ww03400	BIH396-08	KF226887	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	319	NO9 332830 -7700852 (6.v.2006)
ww03411	BIH407-08	KF226886	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	619	N10 330643 -7696589 (6.v.2006)
ww03412	BIH408-08	KF226885	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	581	N10 330643 -7696589 (6.v.2006)
ww03413	BIH409-08	KF226903	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	F	75	39	54	589	N10 330643 -7696589 (6.v.2006)
ww03414	BIH410-08	KF226913	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	F	75	39	54	384	N10 330643 -7696589 (6.v.2006)
ww03425	BIH421-08	KF226909	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	F	75	39	54	528	N11 330953 -7697537 (6.v.2006)
ww03426	BIH422-08	KF226910	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	499	N11 330953 -7697537 (6.v.2006)
ww03427	BIH423-08	KF226911	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	280	N11 330953 -7697537 (6.v.2006)
ww03587	BIH482-08	KF226897	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	319	N14 336303 -7698063 (6.v.2006)
ww03641	BIH536-08	KF226907	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	214	N18 332462 -7694562 (6.v.2006)
ww03891	BIH569-08	KF226892	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	527	N22 335631 -7695646 (6.v.2006)
ww03920	BIH598-08	KF226901	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	646	N26 337148 -7697314 (6.v.2006)
ww05153	BIH664-09	KF226857	05-Jan-2007	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	M	75	39	54	645	No7b 01.v.2007 BI
ww05154	BIH665-09	KF226827	05-Jan-2007	Cicadellidae	Deltocephalinae	Eupelicini	sp. 75 indet.	F	75	39	54	590	No7b 01.v.2007 BI
ww03309	BIH305-08	KF226906	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 76 indet.	M	76	41	56	608	NO5 334264 -7691974 (6.v.2006)
ww03588	BIH483-08	KF226898	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 76 indet.	M	76	41	56	501	N14 336303 -7698063 (6.v.2006)
ww03639	BIH534-08	KF226905	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 76 indet.	F	76	41	56	319	N18 332462 -7694562 (6.v.2006)
ww03921	BIH599-08	KF226893	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	sp. 76 indet.	F	76	41	55	646	N26 337148 -7697314 (6.v.2006)
ww02562	BIH007-08	KF227144	15-Mar-2006	Cicadellidae	Deltocephalinae	Eupelicini	*Mapochiella* sp.77 indet.	M	77	42	58	588	CC1 337391 -7697313 (15.iii.2006)
ww02587	BIH032-08	KF227147	15-Mar-2006	Cicadellidae	Deltocephalinae	Eupelicini	*Mapochiella* sp.77 indet.	F	77	42	57	534	CC2 337659 -7697280 (15.iii.2006)
ww02588	BIH033-08	KF227148	15-Mar-2006	Cicadellidae	Deltocephalinae	Eupelicini	*Mapochiella* sp.77 indet.	M	77	42	58	554	CC2 337659 -7697280 (15.iii.2006)
ww02589	BIH034-08	KF227149	15-Mar-2006	Cicadellidae	Deltocephalinae	Eupelicini	*Mapochiella* sp.77 indet.	M	77	42	58	591	CC2 337659 -7697280 (15.iii.2006)
ww03308	BIH304-08	KF227145	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	*Mapochiella* sp.77 indet.	F	77	42	57	642	NO5 334264 -7691974 (6.v.2006)
ww03373	BIH369-08	KF227146	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	*Mapochiella* sp.77 indet.	F	77	42	58	662	NO7 331945 – 7697180 (6.v.2006)
ww03640	BIH535-08	KF227151	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	*Mapochiella* sp.77 indet.	F	77	42	58	319	N18 332462 -7694562 (6.v.2006)
ww03644	BIH539-08	KF227150	06-May-2006	Cicadellidae	Deltocephalinae	Eupelicini	*Mapochiella* sp.77 indet.	M	77	42	57	565	N19 327609 -7691950 (6.v.2006)

APPENDIX 1

Taxonomic inventory of genetically identified Barrow Island Auchenorrhyncha nymphs. Specimens sorted according to genetic affiliation within adult morphospecies. Genetic identifications to adult morphospecies determined using Neighbor Joining tree analysis. Nymphs not identified to adults are labelled to 10 unidentified genetic clades (A – J). Associated specimen, process and field ID's as indicated and used in the project "Barrow Island Hemiptera", publically available at Barcoding of life data system (BOLD) (Ratnasingham and Hebert 2007) (www.boldsystems.org). Associated GenBank accession numbers as indicated.

Sample ID	BOLD process ID	GenBank accession #	Genetic identification	DNA barcode length (bp)	Field ID	Collection date
ww01066	BIH713-09	KF226730	*Alleloplasis* sp13	646	CC2 337659 -7697280 (15.iii.2006)	15-Mar-2006
ww01555	BIH724-09	KF227024	*Alleloplasis* sp14	285	3 (WGS84: 338920 -7699669) GPX	15-Mar-2006
ww00770	BIH686-09	KF226835	Athysanini sp29	632	NO5 334264 -7691974 (6.v.2006)	06-May-2006
ww00775	BIH691-09	KF226836	Athysanini sp29	539	N15 336732 -7698579 (6.v.2006)	06-May-2006
ww00776	BIH692-09	KF226856	Athysanini sp29	644	N15 336732 -7698579 (6.v.2006)	06-May-2006
ww00777	BIH693-09	KF226864	Athysanini sp29	646	N15 336732 -7698579 (6.v.2006)	06-May-2006
ww03240	BIH783-09	KF226982	*Batracomorphus adventitiosus*	390	(WGS84: 337733 -7700903) GP6	25-Sep-2006
ww03198	BIH799-09	KF227032	Deltocephalini sp46 indet.	406	(WGS84: 336875 -7699467) N06	06-May-2006
ww03207	BIH750-09	KF227013	Deltocephalini sp46 indet.	391	(WGS84: 337670 -7699230) GP8	15-Mar-2006
ww03208	BIH751-09	KF227012	Deltocephalini sp46 indet.	391	(WGS84: 337670 -7699230) GP8	15-Mar-2006
ww00779	BIH695-09	KF226891	Eupelicini sp75	610	N11 330953 -7697537 (6.v.2006)	06-May-2006
ww00781	BIH697-09	KF226890	Eupelicini sp75	487	NO6 336875 -7699467 (6.v.2006)	06-May-2006
ww03872	BIH809-09	KF226970	Eupelicini sp75	406	(WGS84: 335631 -7695646) N22 94	06-May-2006
ww03199	BIH742-09	KF227022	Eurybrachidae sp8	406	(WGS84: 337670 -7699230) GP8	15-Mar-2006
ww01552	BIH718-09	KF226958	*Falcophantis westcotti*	645	GP7 337722 -7699467 (25.xi.2006)	25-Sep-2006
ww03234	BIH777-09	KF226987	*Falcophantis westcotti*	406	(WGS84: 336303 -7698063) N14	06-May-2006
ww03235	BIH778-09	KF226986	*Falcophantis westcotti*	406	(WGS84: 336303 -7698063) N14	06-May-2006
ww03238	BIH781-09	KF226984	*Falcophantis westcotti*	391	(WGS84: 336303 -7698063) N14	06-May-2006
ww03178	BIH788-09	KF226977	*Horouta austrina*	518	(WGS84: 338920 -7699669) GPX	15-Mar-2006
ww03233	BIH776-09	KF226990	*Horouta austrina*	391	(WGS84: 336303 -7698063) N14	06-May-2006
ww03863	BIH802-09	KF227036	*Horouta austrina*	304	(WGS84: 337722 -7699467) GP7 85	15-Mar-2006
ww00785	BIH701-09	KF227041	*Ipoides hackeri*	304	NO9 332830 -7700852 (6.v.2006)	06-May-2006
ww01551	BIH717-09	KF227071	*Ipoides hackeri*	636	GP4 339635 -7700983 (25.xi.2006)	25-Sep-2006
ww03239	BIH782-09	KF226983	*Ipoides hackeri*	406	(WGS84: 337733 -7700903) GP6	25-Sep-2006

Sample ID	BOLD process ID	GenBank accession #	Genetic identification	DNA barcode length (bp)	Field ID	Collection date
ww00765	BIH681-09	KF227076	Issidae sp9	641	NO7 331945 – 7697180 (6.v.2006)	06-May-2006
ww00766	BIH682-09	KF227078	Issidae sp9	635	NO7 331945 – 7697180 (6.v.2006)	06-May-2006
ww01556	BIH725-09	KF227023	*Lipocallia* sp16	304	4 (WGS84: 338920 -7699669) GPX	15-Mar-2006
ww02672	BIH719-09	KF227028	*Lipocallia* sp16	304	5 (WGS84: 338920 -7699669) GPX	15-Mar-2006
ww02673	BIH720-09	KF227027	*Lipocallia* sp16	291	6 (WGS84: 338920 -7699669) GPX	15-Mar-2006
ww03194	BIH796-09	KF227018	*Lipocallia* sp16	406	(WGS84: 336875 -7699467) N06	06-May-2006
ww03200	BIH743-09	KF227021	*Lipocallia* sp16	384	(WGS84: 337670 -7699230) GP8	15-Mar-2006
ww03201	BIH744-09	KF227020	*Lipocallia* sp19	392	(WGS84: 337670 -7699230) GP8	15-Mar-2006
ww02674	BIH721-09	KF227026	*Mapochiella* sp77	304	7 (WGS84: 338920 -7699669) GPX	15-Mar-2006
ww02675	BIH722-09	KF227025	*Mapochiella* sp77	515	8 (WGS84: 338920 -7699669) GPX	15-Mar-2006
ww03170	BIH784-09	KF226981	*Mapochiella* sp77	303	(WGS84: 338920 -7699669) GPX	15-Mar-2006
ww03171	BIH785-09	KF226980	*Mapochiella* sp77	303	(WGS84: 338920 -7699669) GPX	15-Mar-2006
ww03172	BIH786-09	KF226979	*Mapochiella* sp77	470	(WGS84: 338920 -7699669) GPX	15-Mar-2006
ww03211	BIH754-09	KF227011	*Mapochiella* sp77	304	(WGS84: 337670 -7699230) GP8	15-Mar-2006
ww00767	BIH683-09	KF226963	*Mayawa* sp34	304	N18 332462 -7694562 (6.v.2006)	06-May-2006
ww00778	BIH694-09	KF227045	*Mayawa* sp34	304	N15 336732 -7698579 (6.v.2006)	06-May-2006
ww00780	BIH696-09	KF227044	*Mayawa* sp34	304	N11 330953 -7697537 (6.v.2006)	06-May-2006
ww00784	BIH700-09	KF227042	*Mayawa* sp34	304	NO9 332830 -7700852 (6.v.2006)	06-May-2006
ww00789	BIH705-09	KF227039	*Mayawa* sp34	646	N10 330643 -7696589 (6.v.2006)	06-May-2006
ww03177	BIH787-09	KF226978	*Mayawa* sp34	269	(WGS84: 338920 -7699669) GPX	15-Mar-2006
ww03212	BIH755-09	KF227010	*Mayawa* sp34	385	(WGS84: 340913 -7707558) NO4	06-May-2006
ww03213	BIH756-09	KF227009	*Mayawa* sp34	304	(WGS84: 340913 -7707558) NO4	06-May-2006
ww03214	BIH757-09	KF227008	*Mayawa* sp34	406	(WGS84: 340913 -7707558) NO4	06-May-2006
ww03864	BIH803-09	KF227037	*Mayawa* sp34	304	(WGS84: 337722 -7699467) GP7 86	15-Mar-2006
ww00764	BIH680-09	KF227162	*Oligaethus* sp15	646	NO2 328302 -7699494 (06.v.2006)	06-May-2006
ww03203	BIH746-09	KF227015	*Oligaethus* sp15	249	(WGS84: 337670 -7699230) GP8	15-Mar-2006
ww03873	BIH810-09	KF226969	*Oligaethus* sp15	406	(WGS84: 337148 -7697314) N26 95	06-May-2006

Sample ID	BOLD process ID	GenBank accession #	Genetic identification	DNA barcode length (bp)	Field ID	Collection date
ww03216	BIH759-09	KF227007	*Orosius orientalis*	391	(WGS84: 340913 -7707558) NO4	06-May-2006
ww03217	BIH760-09	KF227006	*Orosius orientalis*	285	(WGS84: 340913 -7707558) NO4	06-May-2006
ww03218	BIH761-09	KF227005	*Orosius orientalis*	304	(WGS84: 340913 -7707558) NO4	06-May-2006
ww03867	BIH806-09	KF226974	*Orosius orientalis*	402	(WGS84: 335631 -7695646) N22 89	06-May-2006
ww00788	BIH704-09	KF227291	*Protartessus spinosus*	631	N26 337148 -7697314 (6.v.2006)	06-May-2006
ww03182	BIH789-09	KF226976	*Protartessus spinosus*	363	(WGS84: 336875 -7699467) N06	06-May-2006
ww03183	BIH790-09	KF226960	*Protartessus spinosus*	382	(WGS84: 336875 -7699467) N06	06-May-2006
ww03184	BIH791-09	KF226975	*Protartessus spinosus*	234	(WGS84: 336875 -7699467) N06	06-May-2006
ww03185	BIH792-09	KF226988	*Protartessus spinosus*	362	(WGS84: 336875 -7699467) N06	06-May-2006
ww03186	BIH793-09	KF226989	*Protartessus spinosus*	382	(WGS84: 336875 -7699467) N06	06-May-2006
ww03187	BIH794-09	KF227016	*Protartessus spinosus*	406	(WGS84: 336875 -7699467) N06	06-May-2006
ww03188	BIH795-09	KF227017	*Protartessus spinosus*	383	(WGS84: 336875 -7699467) N06	06-May-2006
ww03189	BIH-817-11	KF226968	*Protartessus spinosus*	610	(WGS84: 336875 -7699467) N06	06-May-2006
ww03223	BIH766-09	KF227000	*Protartessus spinosus*	402	(WGS84: 336303 -7698063) N14	06-May-2006
ww03224	BIH767-09	KF226999	*Protartessus spinosus*	404	(WGS84: 336303 -7698063) N14	06-May-2006
ww03225	BIH768-09	KF226998	*Protartessus spinosus*	382	(WGS84: 336303 -7698063) N14	06-May-2006
ww03226	BIH769-09	KF226997	*Protartessus spinosus*	379	(WGS84: 336303 -7698063) N14	06-May-2006
ww03227	BIH770-09	KF226996	*Protartessus spinosus*	393	(WGS84: 336303 -7698063) N14	06-May-2006
ww03228	BIH771-09	KF226995	*Protartessus spinosus*	379	(WGS84: 336303 -7698063) N14	06-May-2006
ww03229	BIH772-09	KF226994	*Protartessus spinosus*	380	(WGS84: 336303 -7698063) N14	06-May-2006
ww00768	BIH684-09	KF227294	*Rigula* sp72	646	NO5 334264 -7691974 (6.v.2006)	06-May-2006
ww03196	BIH797-09	KF227019	*Siphanta patruelis*	391	(WGS84: 336875 -7699467) N06	06-May-2006
ww03220	BIH763-09	KF227003	*Siphanta patruelis*	406	(WGS84: 340913 -7707558) NO4	06-May-2006
ww03221	BIH764-09	KF227002	*Siphanta patruelis*	391	(WGS84: 340913 -7707558) NO4	06-May-2006
ww03222	BIH765-09	KF227001	*Siphanta patruelis*	406	(WGS84: 340913 -7707558) NO4	06-May-2006
ww00763	BIH679-09	KF227323	*Soractellus* sp50	643	NO2 328302 -7699494 (06.v.2006)	06-May-2006
ww03205	BIH748-09	KF227014	*Soractellus* sp50	315	(WGS84: 337670 -7699230) GP8	15-Mar-2006

Sample ID	BOLD process ID	GenBank accession #	Genetic identification	DNA barcode length (bp)	Field ID	Collection date
ww00783	BIH699-09	KF226845	Stenometopiini sp71	646	N26 337148 -7697314 (6.v.2006)	06-May-2006
ww01550	BIH716-09	KF226862	Stenometopiini sp71	636	GP9 338695 -7699237 (25.xi.2006)	25-Sep-2006
ww00773	BIH689-09	KF227337	*Stirellus* sp70	646	N27 326266 -7691041 (6.v.2006)	06-May-2006
ww00774	BIH690-09	KF227331	*Stirellus* sp70	646	N27 326266 -7691041 (6.v.2006)	06-May-2006
ww01063	BIH710-09	KF227350	*Zaletta webbi*	646	CC2 SUC2 337659 -7697280	25-Sep-2006
ww03197	BIH798-09	KF227029	?*Kahavalu* sp42	406	(WGS84: 336875 -7699467) N06	06-May-2006
ww03230	BIH773-09	KF226993	unidentified spA	406	(WGS84: 336303 -7698063) N14	06-May-2006
ww03231	BIH774-09	KF226992	unidentified spA	374	(WGS84: 336303 -7698063) N14	06-May-2006
ww03232	BIH775-09	KF226991	unidentified spA	379	(WGS84: 336303 -7698063) N14	06-May-2006
ww03236	BIH779-09	KF226985	unidentified spA	405	(WGS84: 336303 -7698063) N14	06-May-2006
ww03869	BIH807-09	KF226972	unidentified spA	406	(WGS84: 335631 -7695646) N22 91	06-May-2006
ww03219	BIH762-09	KF227004	unidentified spB	643	(WGS84: 340913 -7707558) NO4	06-May-2006
ww03866	BIH805-09	KF226973	unidentified spC	646	(WGS84: 335631 -7695646) N22 88	06-May-2006
ww00772	BIH688-09	KF227046	unidentified spD	646	N27 326266 -7691041 (6.v.2006)	06-May-2006
ww00791	BIH707-09	KF227034	unidentified spD	634	NO4 340913 -7707558 (06.v.2006)	06-May-2006
ww00792	BIH708-09	KF227033	unidentified spD	595	NO4 340913 -7707558 (06.v.2006)	06-May-2006
ww00793	BIH709-09	KF227031	unidentified spD	645	NO4 340913 -7707558 (06.v.2006)	06-May-2006
ww03317	BIH313-08	KF227347	unidentified spE	482	NO5 334264 -7691974 (6.v.2006)	06-May-2006
ww05165	BIH676-09	KF226965	unidentified spF	607	No1a 01.v.2007 BI	05-Jan-2007
ww05166	BIH677-09	KF226964	unidentified spF	607	No1a 01.v.2007 BI	05-Jan-2007
ww00769	BIH685-09	KF226962	unidentified spG	646	NO5 334264 -7691974 (6.v.2006)	06-May-2006
ww00771	BIH687-09	KF226961	unidentified spG	625	N27 326266 -7691041 (6.v.2006)	06-May-2006
ww00787	BIH703-09	KF227040	unidentified spG	646	N19 327609 -7691950 (6.v.2006)	06-May-2006
ww01067	BIH714-09	KF227030	unidentified spH	557	GP8 337670 -7699230 (25.xi.2006)	25-Sep-2006
ww00782	BIH698-09	KF227043	unidentified spI	646	NO6 336875 -7699467 (6.v.2006)	06-May-2006
ww00790	BIH706-09	KF227038	unidentified spI	557	NO4 340913 -7707558 (06.v.2006)	06-May-2006
ww03865	BIH804-09	KF227047	unidentified spJ	646	(WGS84: 335631 -7695646) N22 87	06-May-2006
ww03871	BIH808-09	KF226971	unidentified spJ	557	(WGS84: 335631 -7695646) N22 93	06-May-2006