

# The contribution of mitochondrial metagenomics to large-scale data mining and phylogenetic analysis of Coleoptera

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## Neuropterida outgroups

A set of 8 complete Neuropterida mitochondrial genomes, from 8 different families were used as outgroups.

<b>Loci and Taxonomic code</b>	<b>Species</b>	<b>GenBank identifier</b>
XXXXXXXXXXXXXXXXXXXX---_NO4Th7lan	Thyridosmylus langii	NC_021415
XXXXXXXXXXXXXXXXXXXX---_NMa4Di7bis	Ditaxis biseriata	NC_013257
XXXXXXXXXXXXXXXXXXXX---_NCh4Chr7nip	Chrysoperla nipponensis	NC_015093
XXXXXXXXXXXXXXXXXXXX---_NPo4Po7pun	Polystoechotes punctatus	NC_011278
XXXXXXXXXXXXXXXXXXXX---_NR4Ra7xiz	Rapisma xizangense	NC_023362
XXXXXXXXXXXXXXXXXXXX---_NNy4Ny7myr	Nymphes myrmeleonoides	NC_024825
XXXXXXXXXXXXXXXXXXXX---_NMy4My7imm	Myrmeleon immanis	NC_024826
XXXXXXXXXXXXXXXXXXXX---_NA4As7app	Ascaloptynx appendiculatus	NC_011277

## GenBank accessions related to MMG contigs

Dataset Identifier	GenBank codes (# per subset)	Publication
<b>B480</b>	Submitted to NCBI	Crampton-Platt et al., 2015
<b>BIUK</b>	Submitted to NCBI	Crampton-Platt, PhD UCL 2015
<b>MT1</b>	HM486073 HQ232800-HQ232827 (27)	Timmermans et al., 2010
<b>MT2</b>	JX220988-JX221000 (13) JX313663-JX313692 (29) JX412724-JX412859 (127) JN039360 JN163945-JN163970 (25) JQ034414 JQ034416 JQ034419	Timmermans et al., 2016
<b>Curc</b>	Submitted to NCBI	Gillett et al., 2014
<b>Germany Barcode-of-Life</b>	KX087231 - KX087368 (139)	Present study
<b>Chryso</b>	KX943331-KX943509 (179)	Gómez-Rodríguez, et al., 2015
<b>Staphylinidae</b>	KT780620-KT780701 (82)	Present study
<b>Soil</b>	Submitted to NCBI	Andújar et al., 2015
<b>Ethanol</b>	KT876876-KT876915 (42)	Linard et al., 2016
<b>M2015</b>	KX035130-KX035162 (33)	Present study
<b>Scarabaeidae</b>	KU39447-KU739446 (80)	Breeschoten et al., 2016
<b>ChrysoT</b>	KX943331-KX943509 (179)	Rui et al., submitted
<b>French Guyana</b>	KT696173-KT696273 (101)	Present study
<b>Panama</b>	MG193322-MG193541 (220)	Present study
<b>Scolytinae</b>	KX035130-KX035226 (64)	Miller et al., unpublished
<b>Cocci</b>	KJ778881-KJ77883 (3) KJ778886 KJ778888-KJ778889 (2)	Paula et al., 2014

## Illumina reads QC and mitochondrial loci selection:

1. Trimmomatic was used to discard eventual Illumina adapter left in the metagenomes:  

```
java -jar trimmomatic-0.33.jar PE -threads 4 -phred33 -trimlog MyLibraryTrimlog  
MyLibrary_R1.fq MyLibrary_R2.fq MyLibrary_R1.paired.fq MyLibrary_R1.unpaired.fq  
MyLibrary_R2.paired.fq MyLibrary_R2.unpaired.fq  
ILLUMINACLIP:MyLibrary_Truseq_trimseqs.fa:2:30:10
```
2. Prinseq was used to trim reads of low quality with:  

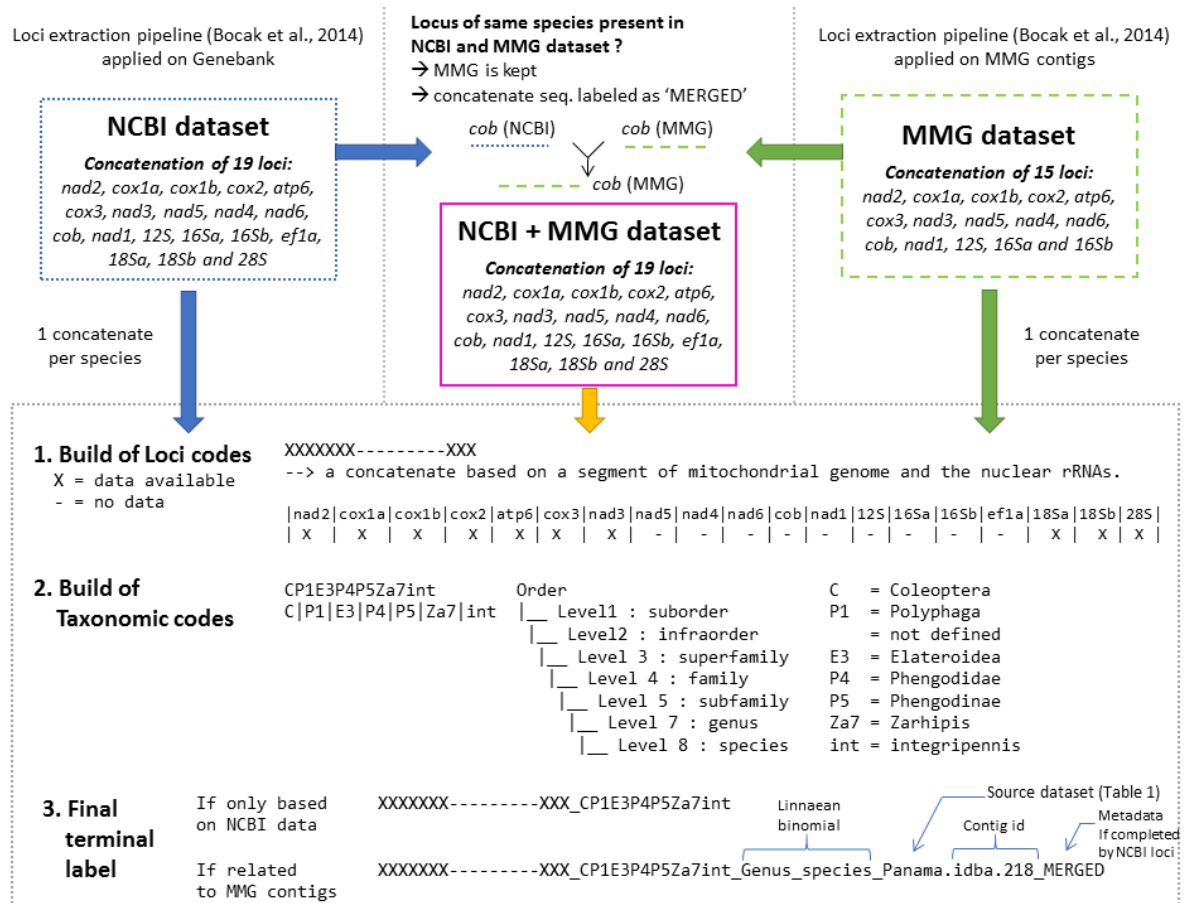
```
perl prinseq-lite.pl -verbose -fastq MyLibrary.fq -log -out_format 3 -out_good  
MyLibrary.QC -min_len 150 -min_qual_mean 25 -ns_max_n 0 -trim_qual_right 20
```
3. Mitochondrial reads were filtered with the help of blastn. First the quality controlled metagenomes were blasted to a custom database of a hundred of Coleopteran mitochondrial genomes with this command:  

```
blastn -db MitogenomeReferences.fa -query MyLibrary.paired.fq -out  
MyLibrary.paired.blastn -task blastn -evalue 1e-5 -max_target_seqs 1 -outfmt 6 -dust no
```
4. All reads matching this database at a Evalue inferior to  $1e-3$  and with at least 70% of identity were filtered out with a custom script to form a putative mitochondrial reads subset.
5. Following these quality control and filtering, the read subset was submitted to IDBA assembly with:  

```
idba_ub --mink 80 --maxk 250or300 --min_contig 1000 --similar 0.98
```
6. All contigs <5kb were discarded (short contigs cannot be identified because they don't hold the cox1 or cytb regions)
7. All remaining contigs were submitted to the pipeline of Bocak et al., 2014.

# Labelling of the tree tips

The tips labels contain 3 groups (see figure below), the locus code, the taxonomic code, the Linnaean binomial and metadata related to the mitochondrial contig if the tip is partially or fully based on loci extracted from the MMG dataset.



- **Locus code:** The ordered X/- symbols help the reader to determine which locus supports a particular tip. Typically, a X on the first 15 positions means a full mitochondria, while the 4 last positions represent the nuclear loci used in the analysis. The example in the figure below describe a species supported by a first half of mitochondrial genome ( loci nad2 to nad3) and 3 nuclear loci.
- **Taxonomic code:** This code is similar to the one used in Bocak et al, 2014. Eight taxonomic orders are associated to combinations of 1 to 3 letters and a number. The numbers represent 8 taxonomical levels: 1=suborder, 2=infraorder, 3=superfamily, 4=family, 5=subfamily, 7=genus, 8=species. A tip may or may not be associated to each of these levels: see the example below where the infraorder of Zarhipis integripennis is undefined (level 3 absent). A tip may also be associated to only high taxonomic ranks if the sequence was extracted from poorly identified specimens. Example: a taxonomic code limited to "CP1E3" correspond to an Elateroidea sp. (specimen identified at superfamily level).
- **Linnaean binomial:** The genus and species in plain letter in most cases. When the sequence correspond to a specimen identified at higher taxonomic levels, this higher level is used

instead. Example: Elateroidea sp.

- Finally, if the tip is related to MMG sequences, the study and the contig from which were built at least 1 locus are reported as **supplementary keywords**. These metadata are labelled using the following set of keywords :
  - o **NCBI**: indicates that the tip is fully based on NCBI loci.
  - o **MMG**: indicates that the tip is fully based on a MMG contig.
  - o **MERGED**: indicates that at least one locus supporting the tip was from available both from the NCBI and MMG datasets. In such case the MMG locus was kept (ensuring coherence of the full mitochondrial contig).
  - o **ANNOT\_FROM\_BARCODE**: is related to MMG contigs for which study-related, NCBI or BOLD barcodes allowed DNA-based identification of the genus or species (match >99.8%, sequenced assigned to species, match >99% identity, sequenced assigned to genus level).
  - o **ANNOT\_FROM\_TREE**; is related to MMG contigs for which no matching barcodes or other reference sequences could be discovered. In such case, the superfamily to which was placed the sequence (through tree reconstruction) was used as a high-level taxonomic identification.

## Taxonomic codes: detailed key file

All taxonomic codes and their detailed description can be found in Suppl. File S2 (excel table).

# Terminals based on both NCBI and MMG loci (“MERGED” keyword)

(Ordered taxonomically via the column “NCBI original taxonomic code)

(Use Suppl. File S2 to get taxonomic code details)

NCBI original loci code	NCBI original taxonomic code	MMG original loci code	MMG original taxonomic code	MERGED loci code	MERGED label
-XX-----	CA1C3C4B6Br7cre	XXXXXXXXXXXXXX	CA1C3C4B6Br7cre_Brachinus_crepitans_JX412826	XXXXXXXXXXXXXX	CA1C3C4B6Br7cre_Brachinus_crepitans_JX412826_MERGED
--X-----X-XX--XX-	CA1C3C4C5C6Hab7cap	XXXXXXXXXXXXXX	CA1C3C4C5C6Hab7cap_Habrodera_capensis_JX412824	XXXXXXXXXXXXXX-XX-	CA1C3C4C5C6Hab7cap_Habrodera_capensis_JX412824_MERGED
-XX---X--X-XXX-XXX	CA1C3C4Ca6Ca7n7em	-XXXXXXXXXXXXXX	CA1C3C4Ca6Ca7n7em_Carabus_nemoralis_BIUK.idba.47	-XXXXXXXXXXXXXX-XXX	CA1C3C4Ca6Ca7n7em_Carabus_nemoralis_BIUK.idba.47_MERGED
-XX---X--X-XXX-X-X	CA1C3C4Ca6Ca7prob	XXXXX-----	CA1C3C4Ca6Ca7prob_Carabus_problematicus_BIUK.idba.82	XXXXX--X--X-XXX-X-X	CA1C3C4Ca6Ca7prob_Carabus_problematicus_BIUK.idba.82_MERGED
-X-----X-XXX-XXX	CA1C3C4Cy6Cy7car	XXXXXXXXXXXXXX	CA1C3C4Cy6Cy7car_Cychrus_caraboides_BIUK.idba.13	XXXXXXXXXXXXXX-XXX	CA1C3C4Cy6Cy7car_Cychrus_caraboides_BIUK.idba.13_MERGED
-X-----XX-	CA1C3C4E5E6B17mul	XXXXXXXXXX	CA1C3C4E5E6B17mul_Blethisa_multipunctata_ameie.idba.101	XXXXXXXXXX-----XX-	CA1C3C4E5E6B17mul_Blethisa_multipunctata_ameie.idba.101_MERGED
-XX-----X--XX-	CA1C3C4E5E6E17cup	XXXXXXXXXXXXXX	CA1C3C4E5E6E17cup_Elaphrus_cupreus_ameie.idba.30	XXXXXXXXXXXXXX--XX-	CA1C3C4E5E6E17cup_Elaphrus_cupreus_ameie.idba.30_MERGED
-XXX--X-----	CA1C3C4H5H6An7poe	XXXXXX-----	CA1C3C4H5H6An7poe_Anisodactylus_poeciloides_ameie.idba.172	XXXXXX-X-----	CA1C3C4H5H6An7poe_Anisodactylus_poeciloides_ameie.idba.172_MERGED
-XX-----	CA1C3C4H5H6Br7ruf	XXXXXXXXXX	CA1C3C4H5H6Br7ruf_Bradycellus_ruficollis_ameie.idba.124	XXXXXXXXXX-----	CA1C3C4H5H6Br7ruf_Bradycellus_ruficollis_ameie.idba.124_MERGED
-XX-----	CA1C3C4H5H6Cry7ten	XX-----	CA1C3C4H5H6Cry7ten_Cryptophonus_tenebrosus_ameie.idba.193	XX-----	CA1C3C4H5H6Cry7ten_Cryptophonus_tenebrosus_ameie.idba.193_MERGED
-XX-----	CA1C3C4H5H6Op7ard	-XXXXXXXXXXXX	CA1C3C4H5H6Op7ard_Ophonus_ardosiacus_Soil.idba.8a	-XXXXXXXXXXXX-----	CA1C3C4H5H6Op7ard_Ophonus_ardosiacus_Soil.idba.8a_MERGED
-X-----	CA1C3C4H5L6Le7chl	XXXXXXXXXXXXXX	CA1C3C4H5L6Le7chl_Lebia_chlorocephala_ameie.idba.39	XXXXXXXXXXXXXX-----	CA1C3C4H5L6Le7chl_Lebia_chlorocephala_ameie.idba.39_MERGED
-XX-----X-	CA1C3C4H5L6Mic7min	XXXXXXXXXXXXXX	CA1C3C4H5L6Mic7min_Microlestes_minutulus_ameie.idba.19	XXXXXXXXXXXXXX-----X-	CA1C3C4H5L6Mic7min_Microlestes_minutulus_ameie.idba.19_MERGED
-XX-----	CA1C3C4H5L6Sy7fov	XXXXXXXXXX	CA1C3C4H5L6Sy7fov_Syntomus_foveatus_Soil.idba.104	XXXXXXXXXX-----	CA1C3C4H5L6Sy7fov_Syntomus_foveatus_Soil.idba.104_MERGED
-XXX--X-----XX-XX-	CA1C3C4H5P6Ab7par	XXXXXXXXXXXXXX	CA1C3C4H5P6Ab7par_Abax_parallelepipedus_2VGB.idba.3	XXXXXXXXXXXXXX-XX-	CA1C3C4H5P6Ab7par_Abax_parallelepipedus_2VGB.idba.3_MERGED
-X-----XX-	CA1C3C4H5P6Ab7para	-XXXXXX-----	CA1C3C4H5P6Ab7para_Abax_parallelus_ameie.idba.169	-XXXXXX----XX----	CA1C3C4H5P6Ab7para_Abax_parallelus_ameie.idba.169_MERGED
-XX-----	CA1C3C4H5P6Pt7mad	-XXXXXXXXXXXX	CA1C3C4H5P6Pt7mad_Pterostichus_madidus_BIUK.idba.54	-XXXXXXXXXXXX-----	CA1C3C4H5P6Pt7mad_Pterostichus_madidus_BIUK.idba.54_MERGED
-XX-----XX-	CA1C3C4H5P6Pt7nig	XXXXXXXXXXXXXX	CA1C3C4H5P6Pt7nig_Pterostichus_niger_2VGB.idba.5	XXXXXXXXXXXXXX-XX-	CA1C3C4H5P6Pt7nig_Pterostichus_niger_2VGB.idba.5_MERGED
-XXX-----XX-	CA1C3C4H5P6St7pum	XXXXXXXXXXXXXX	CA1C3C4H5P6St7pum_Stomis_pumicatus_2VGB.idba.4	XXXXXXXXXXXXXX-XX-	CA1C3C4H5P6St7pum_Stomis_pumicatus_2VGB.idba.4_MERGED
-XX-----	CA1C3C4H5Z6Am7com	XXXXXXXXXXXXXX	CA1C3C4H5Z6Am7com_Amara_communis_677553_idba_contig.5	XXXXXXXXXXXXXX-----	CA1C3C4H5Z6Am7com_Amara_communis_677553_idba_contig.5_MERGED
-XX-----X--XX-	CA1C3C4L5L6Lo7pil	XXXXXXXXXXXXXX	CA1C3C4L5L6Lo7pil_Loricera_pilicornis_BIUK.idba.49	XXXXXXXXXXXXX-X--XX-	CA1C3C4L5L6Lo7pil_Loricera_pilicornis_BIUK.idba.49_MERGED
-XX-----XX-XX-	CA1C3C4Ne6Ne7bre	XXXXXXXXXXXXXX	CA1C3C4Ne6Ne7bre_Nebria_brevicollis_2VGB.idba.0	XXXXXXXXXXXXXX-XX-	CA1C3C4Ne6Ne7bre_Nebria_brevicollis_2VGB.idba.0_MERGED
-XXX-----XXX-	CA1C3C4P15P6Ag7mue	-XXXXXXXXXXXX	CA1C3C4P15P6Ag7mue_Agonum_muelleri_JX412835	-XXXXXXXXXXXX--XXX-	CA1C3C4P15P6Ag7mue_Agonum_muelleri_JX412835_MERGED
-XX-----	CA1C3C4P15P6Ox7obs	XXXXXXXXXXXXXX	CA1C3C4P15P6Ox7obs_Oxypselaphus_obscurus_BIUK.idba.26	XXXXXXXXXXXXXX-----	CA1C3C4P15P6Ox7obs_Oxypselaphus_obscurus_BIUK.idba.26_MERGED
-XXX-----X--	CA1C3C4P15S6Ca7me1	XXXX--XXXX	CA1C3C4P15S6Ca7me1_Calathus_melanocephalus_2VGB.idba.15	XXXX-----XXXX--	CA1C3C4P15S6Ca7me1_Calathus_melanocephalus_2VGB.idba.15_MERGED
-XXXX-----XX-	CA1C3C4Pr5P6Pr7cra	XXXXXXXXXXXXXX	CA1C3C4Pr5P6Pr7cra_Promecognathus_crassus_JX313665	XXXXXXXXXXXXXX--XX-	CA1C3C4Pr5P6Pr7cra_Promecognathus_crassus_JX313665_MERGED
-X-----XX-	CA1C3C4T5B6Be7lae	XXXXXXXXXXXXXX	CA1C3C4T5B6Be7lae_Bembidion_laetum_Soil.idba.40	XXXXXXXXXXXXXX-XX-	CA1C3C4T5B6Be7lae_Bembidion_laetum_Soil.idba.40_MERGED
-X-----XX-	CA1C3C4T5B6Be7var	XXXXXXXXXXXXXX	CA1C3C4T5B6Be7var_Bembidion_varium_ameie.idba.56	XXXXXXXXXXXXXX--XX-	CA1C3C4T5B6Be7var_Bembidion_varium_ameie.idba.56_MERGED
-X-----XX-	CA1C3C4T5B6Ta7nan	XXXXXXXXXXXXXX	CA1C3C4T5B6Ta7nan_Tachyta_nana_832958_idba_contig.6	XXXXXXXXXXXXXX-XX-	CA1C3C4T5B6Ta7nan_Tachyta_nana_832958_idba_contig.6_MERGED
-X-----	CA1C3C4T5Po6Po7iri	XXXXXXXXXXXXXX	CA1C3C4T5Po6Po7iri_Pogonus_iridipennis_ameie.idba.48	XXXXXXXXXXXXXX-----	CA1C3C4T5Po6Po7iri_Pogonus_iridipennis_ameie.idba.48_MERGED
-XXX-----XX-X-	CA1C3C4T5Tr7obt	XXXXXXXXXXXXXX	CA1C3C4T5Tr7obt_Trechus_obtusus_Soil.idba.42	XXXXXXXXXXXXXX-X-	CA1C3C4T5Tr7obt_Trechus_obtusus_Soil.idba.42_MERGED
XXXXXXXXXX-XXX-XX-	CA1C3T4Tr7hol	XXXXXXXXXXXXXX	CA1C3T4Tr7hol_Trachypachus_holmbergi_NC_011329	XXXXXXXXXXXXXX-XX-	CA1C3T4Tr7hol_Trachypachus_holmbergi_NC_011329_MERGED
-X-----X-XXX-XX-	CA1D3A4Am7ins	XX-----	CA1D3A4Am7ins_Amphizoa_insolens_799022_idba_contig.85	XX-----X-XXX-XX-	CA1D3A4Am7ins_Amphizoa_insolens_799022_idba_contig.85_MERGED
XXXXXXXXXXXXXX-XX-	CA1D3As4As7nio	XXXXXXXXXXXXXX	CA1D3As4As7nio_Aspidytes_niobe_NC_012139	XXXXXXXXXXXXXX-XX-	CA1D3As4As7nio_Aspidytes_niobe_NC_012139_MERGED
-XX-----XX-	CA1D3D4A5A6Ag7uli	XXXXXXXXXXXXXX	CA1D3D4A5A6Ag7uli_Agabus_uliginosus_ameie.idba.68	XXXXXXXXXXXXXX-----	CA1D3D4A5A6Ag7uli_Agabus_uliginosus_ameie.idba.68_MERGED
-XXX-----X-XXXX-	CA1D3D4C5C6Co7fus	XXXXXXXXXXXXXX-X----	CA1D3D4C5C6Co7fus_Colymbetes_fuscus_1VWB.idba.16	XXXXXXXXXXXXXX-----	CA1D3D4C5C6Co7fus_Colymbetes_fuscus_1VWB.idba.16_MERGED
--X-----X-----XX-	CA1D3D4Co5C6L17hae	XXXXXXXXXXXXXX	CA1D3D4Co5C6L17hae_Liopterus_haemorrhoidalis_1VWB.idba.11	XXXXXXXXXXXXXX-XX-	CA1D3D4Co5C6L17hae_Liopterus_haemorrhoidalis_1VWB.idba.11_MERGED
-XXX-----X--XX-	CA1D3D4D5Ac6Ac7sul	XXXXXXXXXXXXXX	CA1D3D4D5Ac6Ac7sul_Acilius_sulcatus_1VWB.idba.3	XXXXXXXXXXXXXX-XX-	CA1D3D4D5Ac6Ac7sul_Acilius_sulcatus_1VWB.idba.3_MERGED
-XX-----XX-XX-	CA1D3D4D5C6Cy7lat	XXXXXXXXXX	CA1D3D4D5C6Cy7lat_Cybister_lateralimarginalis_ameie.idba.131	XXXXXXXXXX--XX-XX-	CA1D3D4D5C6Cy7lat_Cybister_lateralimarginalis_ameie.idba.131_MERGED
-X-----XX----	CA1D3D4H5H6Hy7dis	XXXXXXXXXX	CA1D3D4H5H6Hy7dis_Hydroporus_discretus_1VWB.idba.14	XXXXXXXXXX--XX----	CA1D3D4H5H6Hy7dis_Hydroporus_discretus_1VWB.idba.14_MERGED
-XX-----X--XX-	CA1D3D4H5H6Hy7ery	-----XXXXXXXXXX	CA1D3D4H5H6Hy7ery_Hydroporus_erythrocephalus_1VWB.idba.20	-XX-----XXXXXXXXXX-	CA1D3D4H5H6Hy7ery_Hydroporus_erythrocephalus_1VWB.idba.20_MERGED
-XX-----XX----	CA1D3D4H5H6Hy7gyl	XXXXXXXXXXXXXX	CA1D3D4H5H6Hy7gyl_Hydroporus_gyllenhalii_1VWB.idba.4	XXXXXXXXXXXXXX--XX----	CA1D3D4H5H6Hy7gyl_Hydroporus_gyllenhalii_1VWB.idba.4_MERGED
-XXX-----XX-X-	CA1D3D4H5H6Hy7obs	XXXXXXXXXXXXXX	CA1D3D4H5H6Hy7obs_Hydroporus_obscurus_1VWB.idba.1	XXXXXXXXXXXXXX-X-	CA1D3D4H5H6Hy7obs_Hydroporus_obscurus_1VWB.idba.1_MERGED

-XX-----XX-XX-	CA1D3D4H5H6Hy7pa1	-----XXXXXX-XXXX	CA1D3D4H5H6Hy7pa1_Hydropsorus_palustris_JX313670	-XX-XXXXXXXXXX-XX-	CA1D3D4H5H6Hy7pa1_Hydropsorus_palustris_JX313670_MERGED
-XX-----XX-XX-	CA1D3D4H5H6Hy7pla	XXXXXXXXXXXXXXXXXXXX	CA1D3D4H5H6Hy7pla_Hydropsorus_planus_1VWB.idba.2	XXXXXXXXXXXXXXXXXXXX	CA1D3D4H5H6Hy7pla_Hydropsorus_planus_1VWB.idba.2_MERGED
-XX-----X--XX-	CA1D3D4H5Hyg6Hy7con	XXXXXXXXXXXXXXXXXXXX	CA1D3D4H5Hyg6Hy7con_Hygrotylus_confluens_1VWB.idba.7	XXXXXXXXXXXXXXXXXXXX-XX-	CA1D3D4H5Hyg6Hy7con_Hygrotylus_confluens_1VWB.idba.7_MERGED
-XX-----XX-XX-	CA1D3D4H5Hyg6Hy7ina	XXXXXXXXXXXXXXXXXXXX	CA1D3D4H5Hyg6Hy7ina_Hygrotylus_inaequalis_1VWB.idba.10	XXXXXXXXXXXXXXXXXXXX-XX-	CA1D3D4H5Hyg6Hy7ina_Hygrotylus_inaequalis_1VWB.idba.10_MERGED
--X-----XX----	CA1D3D4H5Hyg6Hy7nig	XXXXXXXXXXXXXXXXXXXX	CA1D3D4H5Hyg6Hy7nig_Hygrotylus_nigrolineatus_ameie.idba.11	XXXXXXXXXXXXXXXXXXXX	CA1D3D4H5Hyg6Hy7nig_Hygrotylus_nigrolineatus_ameie.idba.11_MERGED
-XX-----X-XX-XX-	CA1D3D4L5L6La7poe	XXXXXXXXXXXXXXXXXXXX	CA1D3D4L5L6La7poe_Laccophilus_poecilus_ameie.idba.8	XXXXXXXXXXXXXXXXXXXX-XX-	CA1D3D4L5L6La7poe_Laccophilus_poecilus_ameie.idba.8_MERGED
-XX-----X-X-X-XX-	CA1D3H4Hy7her	XXXXXXXXXXXXXXXXXXXX	CA1D3H4Hy7her_Hygrobia_hermanni_1VWB.idba.13	XXXXXXXXXXXXXXXXXXXX-XX-	CA1D3H4Hy7her_Hygrobia_hermanni_1VWB.idba.13_MERGED
--X-----X-XXX-XX-	CA1D3M4Me7phy	--XXXXXXXXXXXX-XXXX	CA1D3M4Me7phy_Meru_phyllisae_JX313691	--XXXXXXXXXXXX-XX-XX-	CA1D3M4Me7phy_Meru_phyllisae_JX313691_MERGED
-XXX-----X-XXX-XX-	CA1D3N4Not7cla	XXXXXXXXXXXXXXXXXXXX	CA1D3N4Not7cla_Noterus_clavicornis_1VWB.idba.5	XXXXXXXXXXXXXXXXXXXX-XX-	CA1D3N4Not7cla_Noterus_clavicornis_1VWB.idba.5_MERGED
XXXXXXXXXXXXX-X-X-XX-	CA1G3G4Ma7obl	XXXXXXXXXXXXXXXXXXXX	CA1G3G4Ma7obl_Macrogyrus_oblongus_NC_013249	XXXXXXXXXXXXXXXXXXXX	CA1G3G4Ma7obl_Macrogyrus_oblongus_NC_013249_MERGED
-X-----X-----XX-	CA1H3H4Ha7fla	XXXXXXXXXXXX-XXXX	CA1H3H4Ha7fla_Haliplus_flavicollis_JX313677	XXXXXXXXXXXXXXXXXXXX	CA1H3H4Ha7fla_Haliplus_flavicollis_JX313677_MERGED
-XX-----X-----XX-	CA1H3H4Ha7imm	-XXXXXXXXXX-XXXX	CA1H3H4Ha7imm_Haliplus_immaculatus_1VWB.idba.22	-XXXXXXXXXX-XXXX	CA1H3H4Ha7imm_Haliplus_immaculatus_1VWB.idba.22_MERGED
-XX-----X-X-X-XX-	CA1H3H4Ha7lin	XXXXXXXXXXXXXXXXXXXX	CA1H3H4Ha7lin_Haliplus_lineatocollis_1VWB.idba.6	XXXXXXXXXXXXXXXXXXXX-XX-	CA1H3H4Ha7lin_Haliplus_lineatocollis_1VWB.idba.6_MERGED
-X-----X-----XX-	CA1H3H4Ha7sib	XXXXXXXXXXXX-XXXX	CA1H3H4Ha7sib_Haliplus_sibiricus_ameie.idba.110	XXXXXXXXXXXX-XXXX	CA1H3H4Ha7sib_Haliplus_sibiricus_ameie.idba.110_MERGED
--X-----X-----XX-	CA1H3H4Pe7qua	--XXXXXXXXXX-XXXX	CA1H3H4Pe7qua_Peltodytes_quadratius_JX313685	--XXXXXXXXXX-XXXX	CA1H3H4Pe7qua_Peltodytes_quadratius_JX313685_MERGED
-X-----XX-XX-	CAr1C4Pr7ser	--XXXXXXXXXX-XXXX	CAr1C4Pr7ser_Priacma_serrata_JX412806	-X-XXXXXXXXXX-XX-	CAr1C4Pr7ser_Priacma_serrata_JX412806_MERGED
XXXXXXXXXXXXX-X-XX-	CAr1O4Te7bru	XXXXXXXXXXXXXXXXXXXX	CAr1O4Te7bru_Tetraperus_bruchi_NC_011328	XXXXXXXXXXXXXXXXXXXX	CAr1O4Te7bru_Tetraperus_bruchi_NC_011328_MERGED
XXXXXXXXXXXXX-XX-	CM1H4Hy7gra	XXXXXXXXXXXXXXXXXXXX	CM1H4Hy7gra_Hydroscapha_granulum_NC_012144	XXXXXXXXXXXXXXXXXXXX	CM1H4Hy7gra_Hydroscapha_granulum_NC_012144_MERGED
-X-----XX-XX-	CM1T4In7mad	XXXXXXXXXXXXXXXXXXXX	CM1T4In7mad_Incoltorrida_madagassica_670733_idba_contig_2	XXXXXXXXXXXXXXXXXXXX	CM1T4In7mad_Incoltorrida_madagassica_670733_idba_contig_2_MERGED
-X-----X-----XX-	CP1B3B4A5Ag7big	--XXXXXXXXXX-XXXX	CP1B3B4A5Ag7big_Agrilus_biguttatus_JX412786	-X-XXXXXXXXXX-XX-	CP1B3B4A5Ag7big_Agrilus_biguttatus_JX412786_MERGED
-X-----X-XX-	CP1B3B4A5Tr7tro	XXXXXXXXXXXX-XXXX	CP1B3B4A5Tr7tro_Trachys_trogodytiformis_ameie.idba.40	XXXXXXXXXXXX-XX-XX-	CP1B3B4A5Tr7tro_Trachys_trogodytiformis_ameie.idba.40_MERGED
XXXX-XXXXXXXX-X-XX-	CP1B3B4C5Ch7ful	XXXXXXXXXXXXXXXXXXXX	CP1B3B4C5Ch7ful_Chrysochroa_fulgidissima_NC_012765	XXXXXXXXXXXXXXXXXXXX	CP1B3B4C5Ch7ful_Chrysochroa_fulgidissima_NC_012765_MERGED
-X-----X-----XX-	CP1B3B4Ch5Pe7lug	--XXXXXXXXXX-XXXX	CP1B3B4Ch5Pe7lug_Perotis_lugubris_JX412762	-X-XXXXXXXXXX-XXXX	CP1B3B4Ch5Pe7lug_Perotis_lugubris_JX412762_MERGED
-X-----X-----XX-	CP1Bo3A4Ga7lae	XXXXXXXXXXXX-XXXX	CP1Bo3A4Ga7lae_Gastrallus_laevigatus_ameie.idba.78	XXXXXXXXXXXX-XXXX	CP1Bo3A4Ga7lae_Gastrallus_laevigatus_ameie.idba.78_MERGED
-X-----X-----XX-	CP1Bo3A4La7red	XXXXXXXXXXXXXXXXXXXX	CP1Bo3A4La7red_Lasioderma_redtenbacheri_ameie.idba.91	XXXXXXXXXXXXXXXXXXXX	CP1Bo3A4La7red_Lasioderma_redtenbacheri_ameie.idba.91_MERGED
XXXXXXXXXXXXX-X-X-XX-	CP1Bo3B4B5Ap7for	XXXXXXXXXXXXXXXXXXXX	CP1Bo3B4B5Ap7for_Apatides_fortis_NC_013582	XXXXXXXXXXXXXXXXXXXX	CP1Bo3B4B5Ap7for_Apatides_fortis_NC_013582_MERGED
-X-----X-----XX-	CP1Bo3B4D5D17min	XXXXXXXXXXXX-XXXX	CP1Bo3B4D5D17min_Dinoderus_minutus_ameie.idba.76	XXXXXXXXXXXX-XXXX	CP1Bo3B4D5D17min_Dinoderus_minutus_ameie.idba.76_MERGED
-XX-----X-----XX-	CP1Bo3D4An7ver	XXXXXXXXXXXX-XXXX	CP1Bo3D4An7ver_Anthrenus_verbasci_ameie.idba.111	XXXXXXXXXX-X-XX-	CP1Bo3D4An7ver_Anthrenus_verbasci_ameie.idba.111_MERGED
-XX-----XX-XXX	CP1Bo3D4De7per	--XXXXXXXXXX-XXXX	CP1Bo3D4De7per_Dermestes_peruvianus_JX313683	-XXXXXXXXXXXX-XXX	CP1Bo3D4De7per_Dermestes_peruvianus_JX313683_MERGED
-----XX-XX-	CP1Bo3D4Tr7hir	--XXXXXXXXXX-XXXX	CP1Bo3D4Tr7hir_Trinodes_hirtus_JX313664	--XXXXXXXXXX-XX-	CP1Bo3D4Tr7hir_Trinodes_hirtus_JX313664_MERGED
-X-----XX-XX-	CP1Bo3N4No7fas	XXXXXXXXXXXXXXXXXXXX	CP1Bo3N4No7fas_Nosodendron_fasciculare_ameie.idba.85	XXXXXXXXXXXXXXXXXXXX	CP1Bo3N4No7fas_Nosodendron_fasciculare_ameie.idba.85_MERGED
-X-----X-----XX-	CP1Bo3P4Nip7hol	XXXXXX-XXXX	CP1Bo3P4Nip7hol_Niptus_hololeucus_ameie.idba.138	XXXXXX-XXXX	CP1Bo3P4Nip7hol_Niptus_hololeucus_ameie.idba.138_MERGED
-X-----X-----XX-	CP1Bo3P4Pt7ruf	--XXXXXXXXXX-XXXX	CP1Bo3P4Pt7ruf_Ptinus_rufipes_HQ232819	--XXXXXXXXXX-XXXX	CP1Bo3P4Pt7ruf_Ptinus_rufipes_HQ232819_MERGED
-X-----X-----XX-	CP1By3D4Dr7ern	XXXXXXXXXXXXXXXXXXXX	CP1By3D4Dr7ern_Dryops_ernesti_833433_idba_contig_9	XXXXXXXXXXXXXXXXXXXX	CP1By3D4Dr7ern_Dryops_ernesti_833433_idba_contig_9_MERGED
-XX-----XX-XX-	CP1By3D4Dr7lur	XXXXXXXXXXXXXXXXXXXX	CP1By3D4Dr7lur_Dryops_luridus_1VWB.idba.12	XXXXXXXXXXXXXXXXXXXX	CP1By3D4Dr7lur_Dryops_luridus_1VWB.idba.12_MERGED
-X-----XX-XXX	CP1By3E4E5L17per	--XXXXXXXXXX-XXXX	CP1By3E4E5L17per_Limnius_perrisi_JX412747	--XXXXXXXXXXXX-XXX	CP1By3E4E5L17per_Limnius_perrisi_JX412747_MERGED
-X-----XX-X-XX-	CP1By3H4He7fen	--XXXXXXXXXX-XXXX	CP1By3H4He7fen_Heterocerus_fenestratus_HQ232811	-XXXXXXXXXXXXX-X-XX-	CP1By3H4He7fen_Heterocerus_fenestratus_HQ232811_MERGED
-X-----X-----XX-	CP1By3H4He7par	XXXXXXXXXXXXXXXXXXXX	CP1By3H4He7par_Heterocerus_parallelus_ameie.idba.47	XXXXXXXXXXXXXXXXXXXX	CP1By3H4He7par_Heterocerus_parallelus_ameie.idba.47_MERGED
-XX-----XX-XXX	CP1C3C4Tr7leu	XXXXXX-XXXX	CP1C3C4Tr7leu_Trichodes_leucopsidens_ameie.idba.184	XXXXXX-XXXX-XX-XXX	CP1C3C4Tr7leu_Trichodes_leucopsidens_ameie.idba.184_MERGED
XXXXXXXXXXXXX-XX-	CP1C3M4C5Ch7sca	XXXXXXXXXXXXXXXXXXXX	CP1C3M4C5Ch7sca_Chaetosoma_scaritides_NC_011324	XXXXXXXXXXXXXXXXXXXX	CP1C3M4C5Ch7sca_Chaetosoma_scaritides_NC_011324_MERGED
-X-----XX-XXX	CP1C3P4Ph7edw	XXXXXXXXXXXXXXXXXXXX	CP1C3P4Ph7edw_Phloiophilus_edwardsi_JX412815	XXXXXXXXXXXXXXXXXXXX-XXX	CP1C3P4Ph7edw_Phloiophilus_edwardsi_JX412815_MERGED
-----XX-XX-	CP1C3T4T5Tem7vir	XXXXXXXXXXXXXXXXXXXX	CP1C3T4T5Tem7vir_Temnoscheila_virescens_JX412752	XXXXXXXXXXXXXXXXXXXX-XXX	CP1C3T4T5Tem7vir_Temnoscheila_virescens_JX412752_MERGED
-X-----XXX-XX-	CP1Ch3C4C5C6Ch7ame	-----XXXXXXXXXX-XXXX	CP1Ch3C4C5C6Ch7ame_Chrysolina_americanus_Chryso.idba.155	-X-XXXXXX-XX-	CP1Ch3C4C5C6Ch7ame_Chrysolina_americanus_Chryso.idba.155_MERGED
-XX-----XXX-X-	CP1Ch3C4C5C6Ch7ban	XXXXXXXXXXXXXXXXXXXX	CP1Ch3C4C5C6Ch7ban_Chrysolina_bankii_Chryso.idba.17	XXXXXXXXXXXXXXXXXXXX-XX-	CP1Ch3C4C5C6Ch7ban_Chrysolina_bankii_Chryso.idba.17_MERGED
-XX-----XXX-XX-	CP1Ch3C4C5C6Ch7hae	XXXXXXXXXXXXXXXXXXXX	CP1Ch3C4C5C6Ch7hae_Chrysolina_haemoptera_Chryso.idba.38	XXXXXXXXXXXXXXXXXXXX-XX-	CP1Ch3C4C5C6Ch7hae_Chrysolina_haemoptera_Chryso.idba.38_MERGED
-XX-----XXX-XX-	CP1Ch3C4C5C6Ch7her	XXXXXXXXXXXXXXXXXXXX	CP1Ch3C4C5C6Ch7her_Chrysolina_herbaea_Chryso.idba.10	XXXXXXXXXXXXXXXXXXXX	CP1Ch3C4C5C6Ch7her_Chrysolina_herbaea_Chryso.idba.10_MERGED
-XX-----XXX-XX-	CP1Ch3C4C5C6Ch7hyp	--XXXXXXXXXX-XXXX	CP1Ch3C4C5C6Ch7hyp_Chrysolina_hyperici_Chryso.idba.134	--XXXXXXXXXXXX-XX-	CP1Ch3C4C5C6Ch7hyp_Chrysolina_hyperici_Chryso.idba.134_MERGED
-----XXX-XX-	CP1Ch3C4C5C6Ch7lep	XXXXXX-XXXX	CP1Ch3C4C5C6Ch7lep_Chrysolina_lepida_Chryso.idba.151	XXXXXX-XXXX-XX-XX-	CP1Ch3C4C5C6Ch7lep_Chrysolina_lepida_Chryso.idba.151_MERGED
-XX-----XXX-XX-	CP1Ch3C4C5C6Ch7pol	XXXXXXXXXXXXXXXXXXXX	CP1Ch3C4C5C6Ch7pol_Chrysolina_polita_Chryso.idba.123	XXXXXXXXXXXXXXXXXXXX	CP1Ch3C4C5C6Ch7pol_Chrysolina_polita_Chryso.idba.123_MERGED
-X-----X-----XX-	CP1Ch3C4C5C6Ch7ruf	XXXXXXXXXXXXXXXXXXXX	CP1Ch3C4C5C6Ch7ruf_Chrysolina_rufoaeana_Chryso.idba.131	XXXXXXXXXXXX-XX-	CP1Ch3C4C5C6Ch7ruf_Chrysolina_rufoaeana_Chryso.idba.131_MERGED
-X-----XX-XX-	CP1Ch3C4C5C6Ch7ver	XXXXXXXXXXXXXXXXXXXX	CP1Ch3C4C5C6Ch7ver_Chrysolina_vernalis_Chryso.idba.25	XXXXXXXXXXXXXXXXXXXX-XX-	CP1Ch3C4C5C6Ch7ver_Chrysolina_vernalis_Chryso.idba.25_MERGED
-XXX-----X-XXX-XX-	CP1Ch3C4C5C6Ch7pop	XXXXXXXXXXXXXXXXXXXX	CP1Ch3C4C5C6Ch7pop_Chrysomela_populi_ameie.idba.70	XXXXXXXXXXXXXXXXXXXX	CP1Ch3C4C5C6Ch7pop_Chrysomela_populi_ameie.idba.70_MERGED
-X-----X-----XX-	CP1Ch3C4C5C6Col7bar	XXXXXXXXXXXXXXXXXXXX	CP1Ch3C4C5C6Col7bar_Colaspidea_barbarum_Chryso.idba.24	XXXXXXXXXXXXXXXXXXXX-XX-	CP1Ch3C4C5C6Col7bar_Colaspidea_barbarum_Chryso.idba.24_MERGED
-X-----X-----XX-	CP1Ch3C4C5C6Go7aeg	XXXXXXXXXXXXXXXXXXXX	CP1Ch3C4C5C6Go7aeg_Gonioctena_aegrotata_Chryso.idba.29	XXXXXXXXXXXXXXXXXXXX-XX-	CP1Ch3C4C5C6Go7aeg_Gonioctena_aegrotata_Chryso.idba.29_MERGED
-X-----X-----XX-	CP1Ch3C4C5C6Go7lep	XXXXXXXXXXXXXXXXXXXX	CP1Ch3C4C5C6Go7lep_Gonioctena_lepraeuri_Chryso.idba.15	XXXXXXXXXXXXXXXXXXXX-XX-	CP1Ch3C4C5C6Go7lep_Gonioctena_lepraeuri_Chryso.idba.15_MERGED



-XX-XXXX-XXX-XXX	CP1Ch3C4C5C6Go7o1i	XXXXXXXXXXXXX----	CP1Ch3C4C5C6Go7o1i_Gonioctena_olivacea_Chryso.idba.3	XXXXXXXXXXXXX-XX	CP1Ch3C4C5C6Go7o1i_Gonioctena_olivacea_Chryso.idba.3_MERGED
--X-XXXX-XXX-XX	CP1Ch3C4C5C6Hy7fai	XXXXXXXXXXXXX----	CP1Ch3C4C5C6Hy7fai_Hydrothassa_fairmairei_Chryso.idba.12	XXXXXXXXXXXXX-XX	CP1Ch3C4C5C6Hy7fai_Hydrothassa_fairmairei_Chryso.idba.12_MERGED
--X-XXXX-XX--XX	CP1Ch3C4C5C6Hy7gla	XXXXXXXXXXXXX----	CP1Ch3C4C5C6Hy7gla_Hydrothassa_glabra_Chryso.idba.9	XXXXXXXXXXXXX-XX	CP1Ch3C4C5C6Hy7gla_Hydrothassa_glabra_Chryso.idba.9_MERGED
-XXX-XXXX-XXXXXXX	CP1Ch3C4C5C6Li7aen	XXXXXXXXXXXXX----	CP1Ch3C4C5C6Li7aen_Plagiosterna_aenea_Chryso.idba.2	XXXXXXXXXXXXX-XX	CP1Ch3C4C5C6Li7aen_Plagiosterna_aenea_Chryso.idba.2_MERGED
-XX-XXXX-XX--XXX	CP1Ch3C4C5C6Ph7arm	--XXXXXXXXXXXX-XXXX	CP1Ch3C4C5C6Ph7arm_Phaedon_armoraciae_JX220992	-XXXXXXXXXXXX-XXX	CP1Ch3C4C5C6Ph7arm_Phaedon_armoraciae_JX220992_MERGED
-X-XXXX-XX--XX	CP1Ch3C4C5C6Ph7tum	XXXXXXXXXXXXX----	CP1Ch3C4C5C6Ph7tum_Phaedon_tumidulus_Chryso.idba.4	XXXXXXXXXXXXX-XX	CP1Ch3C4C5C6Ph7tum_Phaedon_tumidulus_Chryso.idba.4_MERGED
-XXX-XXXX-XXXX---	CP1Ch3C4C5C6Phr7vit	XXXXXXXXXXXXX----	CP1Ch3C4C5C6Phr7vit_Phratora_vitellinae_Chryso.idba.79	XXXXXXXXXXXXX-XX	CP1Ch3C4C5C6Phr7vit_Phratora_vitellinae_Chryso.idba.79_MERGED
-XX-XXXX-X--XX-	CP1Ch3C4C5C6Phr7vul	XXXXXXXXXXXX-XXXX	CP1Ch3C4C5C6Phr7vul_Phratora_vulgatissima_amie.idba.119	XXXXXXXXXXXX-X--XX-	CP1Ch3C4C5C6Phr7vul_Phratora_vulgatissima_amie.idba.119_MERGED
-----XX-XXXX	CP1Ch3C4C5E6En7ado	XXXXXXXXXXXXX----	CP1Ch3C4C5E6En7ado_Entomoscelis_adonidis_Chryso.idba.57	XXXXXXXXXXXXX-XX	CP1Ch3C4C5E6En7ado_Entomoscelis_adonidis_Chryso.idba.57_MERGED
XXX-XXXX-XX----	CP1Ch3C4C5T6Ti7goe	-XXXXXXXXXXXX-XXXX	CP1Ch3C4C5T6Ti7goe_Timarcha_goettingensis_JX412789	-XXXXXXXXXXXX-XX----	CP1Ch3C4C5T6Ti7goe_Timarcha_goettingensis_JX412789_MERGED
-X-XXXX-XX--XXX	CP1Ch3C4Ca5Ar7lab	--XXXXXXXXXXXX-XXXX	CP1Ch3C4Ca5Ar7lab_Arescus_labiatus_JX220988	--XXXXXXXXXXXX-XXX	CP1Ch3C4Ca5Ar7lab_Arescus_labiatus_JX220988_MERGED
-XX-XXXX-X--XX-	CP1Ch3C4Ca5Ca7den	XXXXXXXXXXXXX----	CP1Ch3C4Ca5Ca7den_Cassida_denticollis_Chryso.idba.59	XXXXXXXXXXXXX-XX-	CP1Ch3C4Ca5Ca7den_Cassida_denticollis_Chryso.idba.59_MERGED
-XX-XXXX-XX--XXX	CP1Ch3C4Ca5Ca7rub	XXXXXXXXXXXXX----	CP1Ch3C4Ca5Ca7rub_Cassida_rubiginosa_Chryso.idba.121	XXXXXXXXXXXXX-XXX	CP1Ch3C4Ca5Ca7rub_Cassida_rubiginosa_Chryso.idba.121_MERGED
-XX-XXXX-X--XX-	CP1Ch3C4Ca5Ca7vib	--XXXXXXXXXXXX-XXXX	CP1Ch3C4Ca5Ca7vib_Cassida_vibex_Chryso.idba.154	-XXXXXXXXXXXX-X--XX-	CP1Ch3C4Ca5Ca7vib_Cassida_vibex_Chryso.idba.154_MERGED
-XX-XXXX-X--XX-	CP1Ch3C4Ca5Ca7vir	XXXXXXXXXXXXX----	CP1Ch3C4Ca5Ca7vir_Cassida_viridis_Chryso.idba.6	XXXXXXXXXXXXX-XX-	CP1Ch3C4Ca5Ca7vir_Cassida_viridis_Chryso.idba.6_MERGED
--X-XXXX-XX--XXX	CP1Ch3C4Ca5Im7cap	--XXXXXXXXXXXX-XXXX	CP1Ch3C4Ca5Im7cap_Imatidium_capense_JX220993	--XXXXXXXXXXXX-XXX	CP1Ch3C4Ca5Im7cap_Imatidium_capense_JX220993_MERGED
--X-XXXX-X--XX-	CP1Ch3C4C15Ch7obe	XXXXXXXXXXXXX----	CP1Ch3C4C15Ch7obe_Chilotomina_oberthuri_Chryso.idba.32	XXXXXXXXXXXXX-XX-	CP1Ch3C4C15Ch7obe_Chilotomina_oberthuri_Chryso.idba.32_MERGED
-X-XXXX-X--XX-	CP1Ch3C4C15La7gal	XXXXXXXXXXXXX----	CP1Ch3C4C15La7gal_Lachnaia_gallaeca_Chryso.idba.66	XXXXXXXXXXXXX-XX-	CP1Ch3C4C15La7gal_Lachnaia_gallaeca_Chryso.idba.66_MERGED
-X-XXXX-X--XX-	CP1Ch3C4C15La7hir	XXXXXXXXXXXXX----	CP1Ch3C4C15La7hir_Lachnaia_hirta_Chryso.idba.55	XXXXXXXXXXXXX-XX-	CP1Ch3C4C15La7hir_Lachnaia_hirta_Chryso.idba.55_MERGED
-X-XXXX-X--XX-	CP1Ch3C4C15La7pub	XXXXXXXXXXXXX----	CP1Ch3C4C15La7pub_Lachnaia_pubescens_Chryso.idba.36	XXXXXXXXXXXXX-XX-	CP1Ch3C4C15La7pub_Lachnaia_pubescens_Chryso.idba.36_MERGED
--X-XXXX-XX--XXX	CP1Ch3C4C15La7tri	XXXXXXXXXXXXX----	CP1Ch3C4C15La7tri_Lachnaia_tristigma_Chryso.idba.68	XXXXXXXXXXXXX-XXX	CP1Ch3C4C15La7tri_Lachnaia_tristigma_Chryso.idba.68_MERGED
-----XX--XXX	CP1Ch3C4C15Lab7ghi	XXXXXXXXXXXXX----	CP1Ch3C4C15Lab7ghi_Labidostomis_ghiliani_Chryso.idba.91	XXXXXXXXXXXXX-XX-	CP1Ch3C4C15Lab7ghi_Labidostomis_ghiliani_Chryso.idba.91_MERGED
-X-XXXX-X--XX-	CP1Ch3C4C15Lab7luc	XXXXXXXXXXXXX----	CP1Ch3C4C15Lab7luc_Labidostomis_lucida_Chryso.idba.90	XXXXXXXXXXXXX-XX-	CP1Ch3C4C15Lab7luc_Labidostomis_lucida_Chryso.idba.90_MERGED
-----XX--XXX	CP1Ch3C4C15Lab7lus	XXXXXXXXXXXXX----	CP1Ch3C4C15Lab7lus_Labidostomis_lusitanica_Chryso.idba.65	XXXXXXXXXXXXX-XXX	CP1Ch3C4C15Lab7lus_Labidostomis_lusitanica_Chryso.idba.65_MERGED
-----XX--XXX	CP1Ch3C4C15Lab7tax	XXXXXXXXXXXXX----	CP1Ch3C4C15Lab7tax_Labidostomis_taxicornis_Chryso.idba.92	XXXXXXXXXXXXX-XX-	CP1Ch3C4C15Lab7tax_Labidostomis_taxicornis_Chryso.idba.92_MERGED
-X-XXXX-XX--XXX	CP1Ch3C4C15Sm7con	XXXXXXXXXXXXX----	CP1Ch3C4C15Sm7con_Smaragdina_concolor_Chryso.idba.37	XXXXXXXXXXXXX-XXX	CP1Ch3C4C15Sm7con_Smaragdina_concolor_Chryso.idba.37_MERGED
-X-XXXX-XX--XXX	CP1Ch3C4C15Sm7rey	XXXXXXXXXXXXX----	CP1Ch3C4C15Sm7rey_Smaragdina_reyi_Chryso.idba.52	XXXXXXXXXXXXX-XXX	CP1Ch3C4C15Sm7rey_Smaragdina_reyi_Chryso.idba.52_MERGED
-X-XXXX-X--XX-	CP1Ch3C4C15Sm7ruf	XXXXXXXXXXXXX----	CP1Ch3C4C15Sm7ruf_Smaragdina_rufimana_Chryso.idba.20	XXXXXXXXXXXXX-XX-	CP1Ch3C4C15Sm7ruf_Smaragdina_rufimana_Chryso.idba.20_MERGED
XXXXXXXXXXXXX-X-	CP1Ch3C4Cr5Cr7duo	XXXXXXXXXXXXX----	CP1Ch3C4Cr5Cr7duo_Crioceris_duodecimpunctata_NC_003372	XXXXXXXXXXXXX-X-	CP1Ch3C4Cr5Cr7duo_Crioceris_duodecimpunctata_NC_003372_MERGED
-X-XXXX-XX--XXX	CP1Ch3C4Cr5Ou7gal	XXXXXXXXXXXXX----	CP1Ch3C4Cr5Ou7gal_Oulema_gallaeciana_Chryso.idba.130	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cr5Ou7gal_Oulema_gallaeciana_Chryso.idba.130_MERGED
-XX-XXXX-X--XXX	CP1Ch3C4Cr5Ou7mel	XXXXXXXXXXXXX----	CP1Ch3C4Cr5Ou7mel_Oulema_melanopus_Chryso.idba.13	XXXXXXXXXXXXX-XXX	CP1Ch3C4Cr5Ou7mel_Oulema_melanopus_Chryso.idba.13_MERGED
-XX-XXXX-X--XXX	CP1Ch3C4Cry5Cr7and	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7and_Cryptocephalus_androgyne_Chryso.idba.100	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7and_Cryptocephalus_androgyne_Chryso.idba.100_MERGED
-XX-XXXX-X--XXX	CP1Ch3C4Cry5Cr7aur	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7aur_Cryptocephalus_aureolus_Chryso.idba.54	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7aur_Cryptocephalus_aureolus_Chryso.idba.54_MERGED
-XX-XXXX-X-XXX-	CP1Ch3C4Cry5Cr7bip	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7bip_Cryptocephalus_bipunctatus_Chryso.idba.99	XXXXXXXXXXXXX-XXX	CP1Ch3C4Cry5Cr7bip_Cryptocephalus_bipunctatus_Chryso.idba.99_MERGED
-X-XXXX-X-X-XX-	CP1Ch3C4Cry5Cr7can	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7can_Cryptocephalus_cantabricus_Chryso.idba.87	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7can_Cryptocephalus_cantabricus_Chryso.idba.87_MERGED
-X-XXXX-XX--XXX	CP1Ch3C4Cry5Cr7cel	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7cel_Cryptocephalus_celtibericus_Chryso.idba.56	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7cel_Cryptocephalus_celtibericus_Chryso.idba.56_MERGED
-X-XXXX-X-X-XX-	CP1Ch3C4Cry5Cr7cyn	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7cyn_Cryptocephalus_cynarae_Chryso.idba.63	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7cyn_Cryptocephalus_cynarae_Chryso.idba.63_MERGED
-X-XXXX-X--XX-	CP1Ch3C4Cry5Cr7liv	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7liv_Cryptocephalus_lividimanus_Chryso.idba.85	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7liv_Cryptocephalus_lividimanus_Chryso.idba.85_MERGED
-XX-XXXX-XXXX-	CP1Ch3C4Cry5Cr7mor	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7mor_Cryptocephalus_moraei_Chryso.idba.107	XXXXXXXXXXXXX-XXX	CP1Ch3C4Cry5Cr7mor_Cryptocephalus_moraei_Chryso.idba.107_MERGED
--X-XXXX-X--XX-	CP1Ch3C4Cry5Cr7mys	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7mys_Cryptocephalus_mystacatus_Chryso.idba.41	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7mys_Cryptocephalus_mystacatus_Chryso.idba.41_MERGED
-X-XXXX-X--XX-	CP1Ch3C4Cry5Cr7obl	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7obl_Cryptocephalus_obliteratifer_Chryso.idba.104	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7obl_Cryptocephalus_obliteratifer_Chryso.idba.104_MERGED
-XX-XXXX-X-X-XX-	CP1Ch3C4Cry5Cr7oct	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7oct_Cryptocephalus_octoguttatus_Chryso.idba.124	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7oct_Cryptocephalus_octoguttatus_Chryso.idba.124_MERGED
-X-XXXX-X-X-XX-	CP1Ch3C4Cry5Cr7pom	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7pom_Cryptocephalus_pominorum_Chryso.idba.94	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7pom_Cryptocephalus_pominorum_Chryso.idba.94_MERGED
-XX-XXXX-XXXX-	CP1Ch3C4Cry5Cr7pus	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7pus_Cryptocephalus_pusillus_Chryso.idba.53	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7pus_Cryptocephalus_pusillus_Chryso.idba.53_MERGED
-X-XXXX-X--XXX	CP1Ch3C4Cry5Cr7qua	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7qua_Cryptocephalus_quadripunctatus_Chryso.idba.83	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7qua_Cryptocephalus_quadripunctatus_Chryso.idba.83_MERGED
-X-XXXX-X-X-XX-	CP1Ch3C4Cry5Cr7ram	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7ram_Cryptocephalus_ramburii_Chryso.idba.88	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7ram_Cryptocephalus_ramburii_Chryso.idba.88_MERGED
-X-XXXX-XXXX-	CP1Ch3C4Cry5Cr7ruf	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7ruf_Cryptocephalus_rufipes_Chryso.idba.77	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7ruf_Cryptocephalus_rufipes_Chryso.idba.77_MERGED
-X-XXXX-X-X-XX-	CP1Ch3C4Cry5Cr7rug	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7rug_Cryptocephalus_rugicollis_Chryso.idba.95	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7rug_Cryptocephalus_rugicollis_Chryso.idba.95_MERGED
-X-XXXX-X--XX-	CP1Ch3C4Cry5Cr7sau	XXXXXXXXXXXX-XX-XXXX	CP1Ch3C4Cry5Cr7sau_Cryptocephalus_saucius_Chryso.idba.143	XXXXXXXXXXXX-X-X-XX-	CP1Ch3C4Cry5Cr7sau_Cryptocephalus_saucius_Chryso.idba.143_MERGED
-X-XXXX-XXXX-	CP1Ch3C4Cry5Cr7sch	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7sch_Cryptocephalus_schaefferi_Chryso.idba.49	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7sch_Cryptocephalus_schaefferi_Chryso.idba.49_MERGED
-X-XXXX-X-X-XX-	CP1Ch3C4Cry5Cr7tib	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7tib_Cryptocephalus_tibialis_Chryso.idba.101	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7tib_Cryptocephalus_tibialis_Chryso.idba.101_MERGED
-XX-XXXX-X--XX-	CP1Ch3C4Cry5Cr7vit	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Cr7vit_Cryptocephalus_vittatus_Chryso.idba.81	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Cr7vit_Cryptocephalus_vittatus_Chryso.idba.81_MERGED
-XX-XXXX-X--XX-	CP1Ch3C4Cry5Pa7reg	XXXXXXXXXXXX-XXXX	CP1Ch3C4Cry5Pa7reg_Pachybrachis_regius_Chryso.idba.138	XXXXXXXXXXXX-X--XX-	CP1Ch3C4Cry5Pa7reg_Pachybrachis_regius_Chryso.idba.138_MERGED
-X-XXXX-X--XX-	CP1Ch3C4Cry5Pa7suf	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Pa7suf_Pachybrachis_suffriani_Chryso.idba.98	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Pa7suf_Pachybrachis_suffriani_Chryso.idba.98_MERGED
-X-XXXX-XXXX-	CP1Ch3C4Cry5Pa7ter	XXXXXXXXXXXXX----	CP1Ch3C4Cry5Pa7ter_Pachybrachis_terminalis_Chryso.idba.96	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5Pa7ter_Pachybrachis_terminalis_Chryso.idba.96_MERGED

--X-----X--XX-	CP1Ch3C4Cry5St7ili	XXXXXXXXXXXXX----	CP1Ch3C4Cry5St7ili_Stylosomus_illicicola_Soil.idba.48	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5St7ili_Stylosomus_illicicola_Soil.idba.48_MERGED
--X-----X--XX-	CP1Ch3C4Cry5St7rug	XXXXXXXXXXXXX----	CP1Ch3C4Cry5St7rug_Stylosomus_rugithorax_Chryso.idba.39	XXXXXXXXXXXXX-XX-	CP1Ch3C4Cry5St7rug_Stylosomus_rugithorax_Chryso.idba.39_MERGED
--X-----XX-XXX-	CP1Ch3C4Do7dis	---XXXXXXXXXX----	CP1Ch3C4Do7dis_Donacia_distincta_JX220999	--XXXXXXXXXXXXX-XXX-	CP1Ch3C4Do7dis_Donacia_distincta_JX220999_MERGED
--X-----X---	CP1Ch3C4Do7ful	XXXXXXXXXXXXX----	CP1Ch3C4Do7ful_Doryidomorpha_fulva_CS.idba.19	XXXXXXXXXXXXX-XX-	CP1Ch3C4Do7ful_Doryidomorpha_fulva_CS.idba.19_MERGED
-X-----X--XXX	CP1Ch3C4E5Br7obs	XXXXXXXXXXXXX----	CP1Ch3C4E5Br7obs_Bromius_obscurus_ame.idba.82	XXXXXXXXXXXXX--XXX	CP1Ch3C4E5Br7obs_Bromius_obscurus_ame.idba.82_MERGED
--X-----X--XX-	CP1Ch3C4E5Colas7glo	XXXXXXXXXXXXX----	CP1Ch3C4E5Colas7glo_Colaspdea_globosa_Chryso.idba.110	XXXXXXXXXXXXX-XX-	CP1Ch3C4E5Colas7glo_Colaspdea_globosa_Chryso.idba.110_MERGED
--X-----XX-XXX	CP1Ch3C4E5Phy7dil	-----XXXXXXXXXX----	CP1Ch3C4E5Phy7dil_Phytorus_dilatatus_B480tru.idba.116	--X-----XXXXXXX-XXX	CP1Ch3C4E5Phy7dil_Phytorus_dilatatus_B480tru.idba.116_MERGED
--X-----X--XXX	CP1Ch3C4Ex7can	--XXXXXXXXXXXXX----	CP1Ch3C4Ex7can_Exema_canadensis_JX220990	--XXXXXXXXXXXXX--XXX	CP1Ch3C4Ex7can_Exema_canadensis_JX220990_MERGED
-----XXX	CP1Ch3C4G5A6Ac7ass	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Ac7ass_Acrocrypta_assamensis_CS.idba.43	XXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Ac7ass_Acrocrypta_assamensis_CS.idba.43_MERGED
XXX-----X--XX-	CP1Ch3C4G5A6Alt7amp	XXXXXXX-----	CP1Ch3C4G5A6Alt7amp_Altica_ampelophaga_Chryso.idba.149	XXXXXXXXXX--X--XX-	CP1Ch3C4G5A6Alt7amp_Altica_ampelophaga_Chryso.idba.149_MERGED
-XX-----X--XX-	CP1Ch3C4G5A6Alt7eri	XXXXXXXX-----	CP1Ch3C4G5A6Alt7eri_Altica_ericeti_Chryso.idba.163	XXXXXXXXXX--X--XX-	CP1Ch3C4G5A6Alt7eri_Altica_ericeti_Chryso.idba.163_MERGED
-XXX-----	CP1Ch3C4G5A6Alt7ole	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Alt7ole_Altica_oleracea_Chryso.idba.51	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Alt7ole_Altica_oleracea_Chryso.idba.51_MERGED
-XX-----X--XXX	CP1Ch3C4G5A6Ap7orb	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Ap7orb_Apteropeda_orbiculata_Chryso.idba.18	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Ap7orb_Apteropeda_orbiculata_Chryso.idba.18_MERGED
-XX-----X--XX-	CP1Ch3C4G5A6Ap7ovu	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Ap7ovu_Apteropeda_ovulum_Chryso.idba.23	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Ap7ovu_Apteropeda_ovulum_Chryso.idba.23_MERGED
-----XX--XXX	CP1Ch3C4G5A6Aph7col	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Aph7col_Aphthonomorpha_collaris_ChrysoT.idba.34	XXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Aph7col_Aphthonomorpha_collaris_ChrysoT.idba.34_MERGED
-----X--XX-	CP1Ch3C4G5A6Aph7alb	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Aph7alb_Aphthona_albertinae_Chryso.idba.48	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Aph7alb_Aphthona_albertinae_Chryso.idba.48_MERGED
-XX-----X--XX-	CP1Ch3C4G5A6Aph7eup	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Aph7eup_Aphthona_euphorbiae_Chryso.idba.42	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Aph7eup_Aphthona_euphorbiae_Chryso.idba.42_MERGED
-XX-----X-XX--	CP1Ch3C4G5A6Aph7lut	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Aph7lut_Aphthona_lutescens_Chryso.idba.103	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Aph7lut_Aphthona_lutescens_Chryso.idba.103_MERGED
-X-----X--XX-	CP1Ch3C4G5A6Aph7mel	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Aph7mel_Aphthona_melancholica_Chryso.idba.71	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Aph7mel_Aphthona_melancholica_Chryso.idba.71_MERGED
-X-----XX-XXX	CP1Ch3C4G5A6As17tra	XXXXXXXXXXXXX----	CP1Ch3C4G5A6As17tra_Asiorestia_transversa_ChrysoT.idba.7	XXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6As17tra_Asiorestia_transversa_ChrysoT.idba.7_MERGED
-X-----X--XX-	CP1Ch3C4G5A6Ba7aer	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Ba7aer_Batophila_aerata_Chryso.idba.47	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Ba7aer_Batophila_aerata_Chryso.idba.47_MERGED
-X-----XXX	CP1Ch3C4G5A6Ch7ang	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Ch7ang_Chabria_nr_angulicollis_ChrysoT.idba.36	XXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Ch7ang_Chabria_nr_angulicollis_ChrysoT.idba.36_MERGED
-----X--XX-	CP1Ch3C4G5A6Chae7ari	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Chae7ari_Chaetocnema_arida_Chryso.idba.82	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Chae7ari_Chaetocnema_arida_Chryso.idba.82_MERGED
-X-----X--XX-	CP1Ch3C4G5A6Chae7dep	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Chae7dep_Chaetocnema_depressa_Chryso.idba.43	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Chae7dep_Chaetocnema_depressa_Chryso.idba.43_MERGED
-XX-----XX-	CP1Ch3C4G5A6Chae7hor	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Chae7hor_Chaetocnema_hortensis_Chryso.idba.125	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Chae7hor_Chaetocnema_hortensis_Chryso.idba.125_MERGED
-X-----XX-	CP1Ch3C4G5A6Chae7obe	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Chae7obe_Chaetocnema_obesa_Chryso.idba.93	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Chae7obe_Chaetocnema_obesa_Chryso.idba.93_MERGED
-X-----X--XX-	CP1Ch3C4G5A6Chae7pag	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Chae7pag_Chaetocnema_paganettii_Chryso.idba.78	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Chae7pag_Chaetocnema_paganettii_Chryso.idba.78_MERGED
-X-----XX-	CP1Ch3C4G5A6Chae7pel	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Chae7pel_Chaetocnema_pelagica_Chryso.idba.21	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Chae7pel_Chaetocnema_pelagica_Chryso.idba.21_MERGED
-----X--XX-	CP1Ch3C4G5A6Chae7sch	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Chae7sch_Chaetocnema_scheffleri_Chryso.idba.69	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Chae7sch_Chaetocnema_scheffleri_Chryso.idba.69_MERGED
-XX-----X--XX-	CP1Ch3C4G5A6Chae7tib	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Chae7tib_Chaetocnema_tibialis_Chryso.idba.75	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Chae7tib_Chaetocnema_tibialis_Chryso.idba.75_MERGED
-X-----XX-XXX	CP1Ch3C4G5A6Chal7ful	-----XXXXXXXXXX----	CP1Ch3C4G5A6Chal7ful_Chalcoides_fulvicornis_Chryso.idba.153	--X---XXXXXXXXXX-XXX	CP1Ch3C4G5A6Chal7ful_Chalcoides_fulvicornis_Chryso.idba.153_MERGED
-X-----X--XXX	CP1Ch3C4G5A6Cre7p1u	-XXXXXXXXXXXXX----	CP1Ch3C4G5A6Cre7p1u_Crepidodera_pluta_ame.idba.98	-XXXXXXXXXXXXX--XXX	CP1Ch3C4G5A6Cre7p1u_Crepidodera_pluta_ame.idba.98_MERGED
-X-----X--XX-	CP1Ch3C4G5A6Dib7occ	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Dib7occ_Dibolia_occultans_Chryso.idba.132	XXXXXXXXXXXXX--XX-	CP1Ch3C4G5A6Dib7occ_Dibolia_occultans_Chryso.idba.132_MERGED
-X-----	CP1Ch3C4G5A6Dib7rug	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Dib7rug_Dibolia_rugulosa_ame.idba.94	XXXXXXXXXXXXX-----	CP1Ch3C4G5A6Dib7rug_Dibolia_rugulosa_ame.idba.94_MERGED
-X-----XXX	CP1Ch3C4G5A6Ep7abe	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Ep7abe_Epitrix_abeillei_CS.idba.39	XXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Ep7abe_Epitrix_abeillei_CS.idba.39_MERGED
-XX-----XX-XXXX	CP1Ch3C4G5A6He7p1a	XXXXXXXXXXXXX----	CP1Ch3C4G5A6He7p1a_Hemipyxis_plagioderoides_ChrysoT.idba.5	XXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6He7p1a_Hemipyxis_plagioderoides_ChrysoT.idba.5_MERGED
-X-----X--XX-	CP1Ch3C4G5A6Her7cic	XXXXXXXXXX-----	CP1Ch3C4G5A6Her7cic_Hermaeophaga_cicatrix_CS.idba.66	XXXXXXXXXX--X--XX-	CP1Ch3C4G5A6Her7cic_Hermaeophaga_cicatrix_CS.idba.66_MERGED
-----XX--XXX	CP1Ch3C4G5A6Lan7ram	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lan7ram_Lanka_ramakrishnai_ChrysoT.idba.39	XXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Lan7ram_Lanka_ramakrishnai_ChrysoT.idba.39_MERGED
-X-----X--XX-	CP1Ch3C4G5A6Lo7aen	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lo7aen_Longitarsus_aeneus_Chryso.idba.115	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Lo7aen_Longitarsus_aeneus_Chryso.idba.115_MERGED
-XX-----X--XX-	CP1Ch3C4G5A6Lo7atr	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lo7atr_Longitarsus_atricillus_Chryso.idba.40	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Lo7atr_Longitarsus_atricillus_Chryso.idba.40_MERGED
-X-----X--XX-	CP1Ch3C4G5A6Lo7cer	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lo7cer_Longitarsus_cerinthos_Chryso.idba.50	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Lo7cer_Longitarsus_cerinthos_Chryso.idba.50_MERGED
-XX-----X--XX-	CP1Ch3C4G5A6Lo7dor	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lo7dor_Longitarsus_dorsalis_Chryso.idba.108	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Lo7dor_Longitarsus_dorsalis_Chryso.idba.108_MERGED
-XX-----XX-XXX	CP1Ch3C4G5A6Lo7exs	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lo7exs_Longitarsus_exsoletus_Chryso.idba.102	XXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Lo7exs_Longitarsus_exsoletus_Chryso.idba.102_MERGED
-X-----	CP1Ch3C4G5A6Lo7ibe	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lo7ibe_Longitarsus_ibericus_Chryso.idba.67	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Lo7ibe_Longitarsus_ibericus_Chryso.idba.67_MERGED
-XX-----X--XX-	CP1Ch3C4G5A6Lo7lur	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lo7lur_Longitarsus_luridus_Chryso.idba.72	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Lo7lur_Longitarsus_luridus_Chryso.idba.72_MERGED
-X-----X--XX-	CP1Ch3C4G5A6Lo7me1	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lo7me1_Longitarsus_melanocephalus_Chryso.idba.26	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Lo7me1_Longitarsus_melanocephalus_Chryso.idba.26_MERGED
-X-----XX-XXX-	CP1Ch3C4G5A6Lo7mem	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lo7mem_Longitarsus_membranaceus_Chryso.idba.45	XXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Lo7mem_Longitarsus_membranaceus_Chryso.idba.45_MERGED
-X-----	CP1Ch3C4G5A6Lo7nig	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lo7nig_Longitarsus_nigrofasciatus_Chryso.idba.89	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Lo7nig_Longitarsus_nigrofasciatus_Chryso.idba.89_MERGED
-XX-----X--XX-	CP1Ch3C4G5A6Lo7ord	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lo7ord_Longitarsus_ordinatus_Chryso.idba.106	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Lo7ord_Longitarsus_ordinatus_Chryso.idba.106_MERGED
-XX-----X--XX-	CP1Ch3C4G5A6Lo7par	XXXXXXXXXX-----	CP1Ch3C4G5A6Lo7par_Longitarsus_parvulus_Chryso.idba.145	XXXXXXXXXX--X--XX-	CP1Ch3C4G5A6Lo7par_Longitarsus_parvulus_Chryso.idba.145_MERGED
-X-----X--XX-	CP1Ch3C4G5A6Lo7pra	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lo7pra_Longitarsus_pratensis_Chryso.idba.127	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Lo7pra_Longitarsus_pratensis_Chryso.idba.127_MERGED
-X-----X--XX-	CP1Ch3C4G5A6Lo7rut	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lo7rut_Longitarsus_rutilus_Chryso.idba.61	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Lo7rut_Longitarsus_rutilus_Chryso.idba.61_MERGED
-XX-----X--XX-	CP1Ch3C4G5A6Lo7tab	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lo7tab_Longitarsus_tabidus_Chryso.idba.86	XXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Lo7tab_Longitarsus_tabidus_Chryso.idba.86_MERGED
-XX-----XX-XXX	CP1Ch3C4G5A6Lup7xan	XXXXXXXX-----	CP1Ch3C4G5A6Lup7xan_Luperomorpha_xanthodera_ame.idba.160	XXXXXXX--X--XXX	CP1Ch3C4G5A6Lup7xan_Luperomorpha_xanthodera_ame.idba.160_MERGED
-X-----X--XXX	CP1Ch3C4G5A6Lyp7pub	XXXXXXXXXXXXX----	CP1Ch3C4G5A6Lyp7pub_Lypnea_pubipennis_CS.idba.34	XXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Lyp7pub_Lypnea_pubipennis_CS.idba.34_MERGED

--X-----XX--XXX	CP1Ch3C4G5A6Mac7sub	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Mac7sub_Macrohaltica_subplicata_ChrysoT.idba.16	XXXXXXXXXXXXXXXX-XX	CP1Ch3C4G5A6Mac7sub_Macrohaltica_subplicata_ChrysoT.idba.16_MERGED
-XX-----X--XX-	CP1Ch3C4G5A6Mant7chr	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Mant7chr_Mantura_chrysanthem1_Chryso.idba.58	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Mant7chr_Mantura_chrysanthem1_Chryso.idba.58_MERGED
-X-----X--XX-	CP1Ch3C4G5A6Ne7bre	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Ne7bre_Neocrepidodera_brevicollis_Chryso.idba.35	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Ne7bre_Neocrepidodera_brevicollis_Chryso.idba.35_MERGED
-XX-----X--XX-	CP1Ch3C4G5A6Ne7fer	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Ne7fer_Neocrepidodera_ferruginea_Chryso.idba.112	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Ne7fer_Neocrepidodera_ferruginea_Chryso.idba.112_MERGED
-XX-----X--XX-	CP1Ch3C4G5A6Ne7tra	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Ne7tra_Neocrepidodera_transversa_Chryso.idba.16	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Ne7tra_Neocrepidodera_transversa_Chryso.idba.16_MERGED
-XX-----X--XXX	CP1Ch3C4G5A6Oe7cin	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Oe7cin_Oedionychus_cinctus_ChrysoT.idba.19	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Oe7cin_Oedionychus_cinctus_ChrysoT.idba.19_MERGED
--X-----XX-	CP1Ch3C4G5A6Ore7pun	-XXXXXXXXXX-	CP1Ch3C4G5A6Ore7pun_Orestia_punctipennis_CS.idba.63	--XXXXXXXXXX----	CP1Ch3C4G5A6Ore7pun_Orestia_punctipennis_CS.idba.63_MERGED
-X-----XX-	CP1Ch3C4G5A6Phi7vib	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Phi7vib_Philopona_vibex_ChrysoT.idba.38	XXXXXXXXXXXXXXXX----	CP1Ch3C4G5A6Phi7vib_Philopona_vibex_ChrysoT.idba.38_MERGED
-XXX-----XX-	CP1Ch3C4G5A6Phy7cru	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Phy7cru_Phyllotreta_cruciferae_Chryso.idba.105	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Phy7cru_Phyllotreta_cruciferae_Chryso.idba.105_MERGED
-XX-----XX-	CP1Ch3C4G5A6Phy7fou	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Phy7fou_Phyllotreta_foudrasi_Chryso.idba.113	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Phy7fou_Phyllotreta_foudrasi_Chryso.idba.113_MERGED
-X-----XX-	CP1Ch3C4G5A6Phy7hem	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Phy7hem_Phyllotreta_hemipoda_Chryso.idba.109	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Phy7hem_Phyllotreta_hemipoda_Chryso.idba.109_MERGED
-XX-----XX-	CP1Ch3C4G5A6Phy7nig	XXXXXXXXXX-	CP1Ch3C4G5A6Phy7nig_Phyllotreta_nigripes_ChrysoT.idba.54	XXXXXXXXXX-	CP1Ch3C4G5A6Phy7nig_Phyllotreta_nigripes_ChrysoT.idba.54_MERGED
-XX-----XX-	CP1Ch3C4G5A6Phy7tet	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Phy7tet_Phyllotreta_tetrastigma_Chryso.idba.80	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Phy7tet_Phyllotreta_tetrastigma_Chryso.idba.80_MERGED
-XX-----XX-	CP1Ch3C4G5A6Phy7und	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Phy7und_Phyllotreta_undulata_Chryso.idba.114	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Phy7und_Phyllotreta_undulata_Chryso.idba.114_MERGED
-X-----XX-	CP1Ch3C4G5A6Phy7var	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Phy7var_Phyllotreta_variipennis_Chryso.idba.119	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Phy7var_Phyllotreta_variipennis_Chryso.idba.119_MERGED
--X-----XXX	CP1Ch3C4G5A6Po7lut	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Po7lut_Podontia_lutea_ChrysoT.idba.3	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Po7lut_Podontia_lutea_ChrysoT.idba.3_MERGED
-XX-----X--XX-	CP1Ch3C4G5A6Pod7fus	-XXXXXXXXXXXX-	CP1Ch3C4G5A6Pod7fus_Podagricola_fuscipes_Chryso.idba.135	-XXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Pod7fus_Podagricola_fuscipes_Chryso.idba.135_MERGED
-XX-----X--XXX	CP1Ch3C4G5A6Psy7chr	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Psy7chr_Psylliodes_chrysocephalus_Chryso.idba.76	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Psy7chr_Psylliodes_chrysocephalus_Chryso.idba.76_MERGED
-X-----X--XXX-	CP1Ch3C4G5A6Psy7cup	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Psy7cup_Psylliodes_cupreatus_Chryso.idba.117	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Psy7cup_Psylliodes_cupreatus_Chryso.idba.117_MERGED
-X-----X--XXX-	CP1Ch3C4G5A6Psy7fus	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Psy7fus_Psylliodes_fusiformis_Chryso.idba.0	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Psy7fus_Psylliodes_fusiformis_Chryso.idba.0_MERGED
-X-----X--XXX-	CP1Ch3C4G5A6Psy7gou	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Psy7gou_Psylliodes_gougeleti_Chryso.idba.128	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Psy7gou_Psylliodes_gougeleti_Chryso.idba.128_MERGED
-X-----X--XXX-	CP1Ch3C4G5A6Psy7his	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Psy7his_Psylliodes_hispnus_Chryso.idba.1	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Psy7his_Psylliodes_hispnus_Chryso.idba.1_MERGED
-X-----X--XX-	CP1Ch3C4G5A6Psy7lae	-XXXXXXXXXXXX-	CP1Ch3C4G5A6Psy7lae_Psylliodes_laevicollis_Chryso.idba.129	-XXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Psy7lae_Psylliodes_laevicollis_Chryso.idba.129_MERGED
-XX-----X--XX-	CP1Ch3C4G5A6Psy7thl	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Psy7thl_Psylliodes_thlasps_Chryso.idba.120	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5A6Psy7thl_Psylliodes_thlasps_Chryso.idba.120_MERGED
-X-----XXX	CP1Ch3C4G5A6Si7ful	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Si7ful_Sinocrepis_fulva_ChrysoT.idba.14	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Si7ful_Sinocrepis_fulva_ChrysoT.idba.14_MERGED
-XX-----X--XXX	CP1Ch3C4G5A6Te7ker	XXXXXXXXXXXXXXXX	CP1Ch3C4G5A6Te7ker_Tegyrius_keralaensis_ChrysoT.idba.32	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5A6Te7ker_Tegyrius_keralaensis_ChrysoT.idba.32_MERGED
-XX-----X--XX-	CP1Ch3C4G5G6Gal7int	XXXXXXXXXXXXXXXX	CP1Ch3C4G5G6Gal7int_Galeruca_interrupta_Chryso.idba.33	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5G6Gal7int_Galeruca_interrupta_Chryso.idba.33_MERGED
-X-----XX-	CP1Ch3C4G5G6Gal7mac	XXXXXXXXXXXXXXXX	CP1Ch3C4G5G6Gal7mac_Galeruca_macchoi_Chryso.idba.28	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5G6Gal7mac_Galeruca_macchoi_Chryso.idba.28_MERGED
-XX-----X--X----	CP1Ch3C4G5G6Gal7nig	XXXXXXXXXXXXXXXX	CP1Ch3C4G5G6Gal7nig_Galeruca_nigrolineata_ChrysoT.idba.33	XXXXXXXXXXXXXXXX----	CP1Ch3C4G5G6Gal7nig_Galeruca_nigrolineata_ChrysoT.idba.33_MERGED
-X-----XXX	CP1Ch3C4G5G6Is7dim	XXXXXXXXXXXXXXXX	CP1Ch3C4G5G6Is7dim_Isshikia_dimidiaticornis_ChrysoT.idba.28	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5G6Is7dim_Isshikia_dimidiaticornis_ChrysoT.idba.28_MERGED
-X-----X--XXX	CP1Ch3C4G5G6Pe7vig	XXXXXXXXXX-	CP1Ch3C4G5G6Pe7vig_Periclitena_vigorsi_ChrysoT.idba.66	XXXXXXXXXX-XXX	CP1Ch3C4G5G6Pe7vig_Periclitena_vigorsi_ChrysoT.idba.66_MERGED
-XX-----XX-	CP1Ch3C4G5G6Py7aen	XXXXXXXXXXXXXXXX	CP1Ch3C4G5G6Py7aen_Pyrrhalta_aenescens_ChrysoT.idba.17	XXXXXXXXXXXXXXXX----	CP1Ch3C4G5G6Py7aen_Pyrrhalta_aenescens_ChrysoT.idba.17_MERGED
-X-----XXX-XXX	CP1Ch3C4G5G6Tr7vir	XXXXXXXXXX-	CP1Ch3C4G5G6Tr7vir_Trirhabda_virgata_ChrysoT.idba.57	XXXXXXXXXX-XXX-XXX	CP1Ch3C4G5G6Tr7vir_Trirhabda_virgata_ChrysoT.idba.57_MERGED
-X-----X--XXX	CP1Ch3C4G5L6Ag7mir	XXXXXXXXXXXXXXXX	CP1Ch3C4G5L6Ag7mir_Agetocera_mirabilis_CS.idba.48	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5L6Ag7mir_Agetocera_mirabilis_CS.idba.48_MERGED
-XX-----XX-XXX	CP1Ch3C4G5L6Ca7cir	XXXXXXXXXX-	CP1Ch3C4G5L6Ca7cir_Calomacrus_circumfusus_Chryso.idba.139	XXXXXXXXXX-XX-XXX	CP1Ch3C4G5L6Ca7cir_Calomacrus_circumfusus_Chryso.idba.139_MERGED
-X-----XX-XXX	CP1Ch3C4G5L6Ca7pin	XXXXXXXXXXXX-	CP1Ch3C4G5L6Ca7pin_Calomacrus_pinicola_amie.idba.64	XXXXXXXXXXXX----	CP1Ch3C4G5L6Ca7pin_Calomacrus_pinicola_amie.idba.64_MERGED
-XX-----XX-	CP1Ch3C4G5L6Ca7sut	XXXXXXXXXXXXXXXX	CP1Ch3C4G5L6Ca7sut_Calomacrus_suturalis_Chryso.idba.22	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5L6Ca7sut_Calomacrus_suturalis_Chryso.idba.22_MERGED
XXXXXXXXXXXXXXXX	CP1Ch3C4G5L6Dia7bar	XXXXXXXXXXXXXXXX	CP1Ch3C4G5L6Dia7bar_Diabrotica_barberi_NC_022935	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5L6Dia7bar_Diabrotica_barberi_NC_022935_MERGED
XXXXXXXXXXXXXXXX	CP1Ch3C4G5L6Dia7vir	XXXXXXXXXXXXXXXX	CP1Ch3C4G5L6Dia7vir_Diabrotica_virgifera_KF658070	XXXXXXXXXXXXXXXX----	CP1Ch3C4G5L6Dia7vir_Diabrotica_virgifera_KF658070_MERGED
-X-----XX-XXX	CP1Ch3C4G5L6Ex7lus	XXXXXXXXXXXXXXXX	CP1Ch3C4G5L6Ex7lus_Exosoma_lusitanicum_Chryso.idba.116	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5L6Ex7lus_Exosoma_lusitanicum_Chryso.idba.116_MERGED
-XX-----XX-XXX	CP1Ch3C4G5L6Ho7uni	XXXXXXXXXXXX-	CP1Ch3C4G5L6Ho7uni_Hoplasoma_unicolor_ChrysoT.idba.50	XXXXXXXXXXXX-XXX	CP1Ch3C4G5L6Ho7uni_Hoplasoma_unicolor_ChrysoT.idba.50_MERGED
-X-----X--XXX	CP1Ch3C4G5L6Hop7sub	XXXXXXXXXXXXXXXX	CP1Ch3C4G5L6Hop7sub_Hoplosaenidea_subcostata_ChrysoT.idba.41	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5L6Hop7sub_Hoplosaenidea_subcostata_ChrysoT.idba.41_MERGED
-X-----XX-	CP1Ch3C4G5L6Lep7ery	XXXXXXXXXXXXXXXX	CP1Ch3C4G5L6Lep7ery_Leptomoma_erythrocephala_Chryso.idba.46	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5L6Lep7ery_Leptomoma_erythrocephala_Chryso.idba.46_MERGED
-XX-----X--XX-	CP1Ch3C4G5L6Ph7qua	XXXXXXXXXXXX-	CP1Ch3C4G5L6Ph7qua_Phyllotreta_quadrimaculata_amie.idba.53	XXXXXXXXXXXX-XXX	CP1Ch3C4G5L6Ph7qua_Phyllotreta_quadrimaculata_amie.idba.53_MERGED
-X-----XX-	CP1Ch3C4G5L6St7nip	XXXXXXXXXXXXXXXX	CP1Ch3C4G5L6St7nip_Stenoluperus_nipponensis_ChrysoT.idba.29	XXXXXXXXXXXXXXXX----	CP1Ch3C4G5L6St7nip_Stenoluperus_nipponensis_ChrysoT.idba.29_MERGED
-X--X--X--	CP1Ch3C4G5O60i7mac	XXXXXXXXXXXXXXXX	CP1Ch3C4G5O60i7mac_Oides_maculatus_ChrysoT.idba.45	XXXXXXXXXXXXXXXX----	CP1Ch3C4G5O60i7mac_Oides_maculatus_ChrysoT.idba.45_MERGED
-X-----X--XXX	CP1Ch3C4G5Op7sca	XXXXXXXXXX-	CP1Ch3C4G5Op7sca_Ophrida_scapoides_CS.idba.69	XXXXXXXXXX-XXX	CP1Ch3C4G5Op7sca_Ophrida_scapoides_CS.idba.69_MERGED
-X-----X--XXX	CP1Ch3C4G5Par7fla	XXXXXXXXXXXXXXXX	CP1Ch3C4G5Par7fla_Paragetocera_favipes_ChrysoT.idba.24	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5Par7fla_Paragetocera_favipes_ChrysoT.idba.24_MERGED
-XX-----X--XXXX-	CP1Ch3C4G5S6Age7aln	XXXXXXXXXXXX-	CP1Ch3C4G5S6Age7aln_Agelastica_alni_CS.idba.57	XXXXXXXXXXXX-X-XXXX-	CP1Ch3C4G5S6Age7aln_Agelastica_alni_CS.idba.57_MERGED
-XX-----XX-	CP1Ch3C4G5S6Ar7chi	XXXXXXXXXXXXXXXX	CP1Ch3C4G5S6Ar7chi_Arthrotus_chinensis_CS.idba.16	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5S6Ar7chi_Arthrotus_chinensis_CS.idba.16_MERGED
-XX-----XXXXXX	CP1Ch3C4G5S6Se7hal	XXXXXXXXXXXXXXXX	CP1Ch3C4G5S6Se7hal_Sermylassa_halensis_ChrysoT.idba.11	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5S6Se7hal_Sermylassa_halensis_ChrysoT.idba.11_MERGED
-X-----X--XXX	CP1Ch3C4G5S17sub	XXXXXXXXXXXXXXXX	CP1Ch3C4G5S17sub_Sinoluperus_subcostatus_ChrysoT.idba.44	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4G5S17sub_Sinoluperus_subcostatus_ChrysoT.idba.44_MERGED
-XX-----X--XX-	CP1Ch3C4G5S7rub	XXXXXXXXXXXXXXXX	CP1Ch3C4G5S7rub_Sphaeroderma_rubidum_Chryso.idba.27	XXXXXXXXXXXXXXXX-XX-	CP1Ch3C4G5S7rub_Sphaeroderma_rubidum_Chryso.idba.27_MERGED
-XX-----XXXXXX	CP1Ch3C4P17ser	XXXXXXXXXXXXXXXX	CP1Ch3C4P17ser_Plateumaris_sericea_Chryso.idba.118	XXXXXXXXXXXXXXXX-XXX	CP1Ch3C4P17ser_Plateumaris_sericea_Chryso.idba.118_MERGED
-X-----XX-XXX	CP1Ch3C4S5Sp7sum	-XXXXXXXXXXXX-	CP1Ch3C4S5Sp7sum_Spilopyra_sumptuosa_JX220997	-XXXXXXXXXXXX-XXX	CP1Ch3C4S5Sp7sum_Spilopyra_sumptuosa_JX220997_MERGED

-X-----	CP1Ch3Ce4C5Ca6Py7san	XXXXXXXXXX	CP1Ch3Ce4C5Ca6Py7san_Pyrrhidium_sanguineum_amei.idba.43	XXXXXXXXXX	CP1Ch3Ce4C5Ca6Py7san_Pyrrhidium_sanguineum_amei.idba.43_MERGED
XXXXXXXXXX-XXXX	CP1Ch3Ce4C5Ce6Ma7rad	XXXXXXXXXX	CP1Ch3Ce4C5Ce6Ma7rad_Massicus_raddei_NC_023937	XXXXXXXXXX	CP1Ch3Ce4C5Ce6Ma7rad_Massicus_raddei_NC_023937_MERGED
-X-----	CP1Ch3Ce4L5L6Cort7hum	XXXXXXXXXX	CP1Ch3Ce4L5L6Cort7hum_Cortodera_humeralis_amei.idba.52	XXXXXXXXXX	CP1Ch3Ce4L5L6Cort7hum_Cortodera_humeralis_amei.idba.52_MERGED
-XX-----	CP1Ch3Ce4L5L6St7nig	XXXXXXXXXX	CP1Ch3Ce4L5L6St7nig_Stenurella_nigra_amei.idba.31	XXXXXXXXXX	CP1Ch3Ce4L5L6St7nig_Stenurella_nigra_amei.idba.31_MERGED
-X-----	CP1Ch3Ce4L5L6St7sep	XXXXXXXXXX	CP1Ch3Ce4L5L6St7sep_Stenurella_septempunctata_amei.idba.16	XXXXXXXXXX	CP1Ch3Ce4L5L6St7sep_Stenurella_septempunctata_amei.idba.16_MERGED
-X-----	CP1Ch3Ce4L5R6Br7int	XXXXXXXXXX	CP1Ch3Ce4L5R6Br7int_Brachyta_interrogationis_amei.idba.3	XXXXXXXXXX	CP1Ch3Ce4L5R6Br7int_Brachyta_interrogationis_amei.idba.3_MERGED
-XX-----	CP1Ch3Ce4L5R6Rh7mor	-XXXXXXXXXX	CP1Ch3Ce4L5R6Rh7mor_Rhagium_mordax_JX412743	-XXXXXXXXXX	CP1Ch3Ce4L5R6Rh7mor_Rhagium_mordax_JX412743_MERGED
XXXXXXXXXX	CP1Ch3Ce4La5Ag6Ps7hil	XXXXXXXXXX	CP1Ch3Ce4La5Ag6Ps7hil_Psacotha_hilaris_NC_013070	XXXXXXXXXX	CP1Ch3Ce4La5Ag6Ps7hil_Psacotha_hilaris_NC_013070_MERGED
XXXXXXXXXX	CP1Ch3Ce4La5B6Ba7lin	XXXXXXXXXX	CP1Ch3Ce4La5B6Ba7lin_Batocera_lineolata_NC_022671	XXXXXXXXXX	CP1Ch3Ce4La5B6Ba7lin_Batocera_lineolata_NC_022671_MERGED
XXXXXXXXXX	CP1Ch3Ce4La5L6An7gla	XXXXXXXXXX	CP1Ch3Ce4La5L6An7gla_Anoplophora_glabripennis_NC_008221	XXXXXXXXXX	CP1Ch3Ce4La5L6An7gla_Anoplophora_glabripennis_NC_008221_MERGED
XXXXXXXXXX-X-	CP1Ch3Ce4La5Mo6Ma7alt	XXXXXXXXXX	CP1Ch3Ce4La5Mo6Ma7alt_Monochamus_alternatus_NC_024652	XXXXXXXXXX-X-	CP1Ch3Ce4La5Mo6Ma7alt_Monochamus_alternatus_NC_024652_MERGED
-XX-----	CP1Ch3Ce4N5N6Ne7u1m	-XXXXXXXXXX	CP1Ch3Ce4N5N6Ne7u1m_Necydalis_ulmi_JX220989	-XXXXXXXXXX	CP1Ch3Ce4N5N6Ne7u1m_Necydalis_ulmi_JX220989_MERGED
-X-----	CP1Ch3040r7cer	XXXXXXXXXX	CP1Ch3040r7cer_Orsodacne_cerasi_amei.idba.18	XXXXXXXXXX	CP1Ch3040r7cer_Orsodacne_cerasi_amei.idba.18_MERGED
-X-----	CP1Ch3040r7lin	-XXXXXXXXXX	CP1Ch3040r7lin_Orsodacne_lineola_JX220994	-XXXXXXXXXX	CP1Ch3040r7lin_Orsodacne_lineola_JX220994_MERGED
-XX-----	CP1Cu3B4By7och	XXXXXXXXXX	CP1Cu3B4By7och_Byturus_ochraceus_677381_idba_contig_12	XXXXXXXXXX	CP1Cu3B4By7och_Byturus_ochraceus_677381_idba_contig_12_MERGED
-X-----	CP1Cu3Bot4An7duo	-XXXXXXXXXX	CP1Cu3Bot4An7duo_Anommatus_duodecimstriatus_Soil.idba.105	-XXXXXXXXXX	CP1Cu3Bot4An7duo_Anommatus_duodecimstriatus_Soil.idba.105_MERGED
XXXXXXXXXX	CP1Cu3Bot4Da7hel	XXXXXXXXXX	CP1Cu3Bot4Da7hel_Dastarcus_helophoroides_NC_024271	XXXXXXXXXX	CP1Cu3Bot4Da7hel_Dastarcus_helophoroides_NC_024271_MERGED
-XX-----	CP1Cu3Bot4Te7cyl	-XXXXXXXXXX	CP1Cu3Bot4Te7cyl_Teredus_cylindricus_amei.idba.176	-XXXXXXXXXX	CP1Cu3Bot4Te7cyl_Teredus_cylindricus_amei.idba.176_MERGED
-XXX-----	CP1Cu3C4C5Ad7dec	-XXXXXXXXXX	CP1Cu3C4C5Ad7dec_Adalia_decempunctata_BIUK.idba.56	-XXXXXXXXXX	CP1Cu3C4C5Ad7dec_Adalia_decempunctata_BIUK.idba.56_MERGED
-XX-----	CP1Cu3C4C5An7nov	XXXXXXXXXX	CP1Cu3C4C5An7nov_Anisosticta_novemdecimpunctata_2VGB.idba.9	XXXXXXXXXX	CP1Cu3C4C5An7nov_Anisosticta_novemdecimpunctata_2VGB.idba.9_MERGED
-X-----	CP1Cu3C4C5Ana7oce	XXXXXXXXXX	CP1Cu3C4C5Ana7oce_Anatis_ocellata_833044_idba_contig_22	XXXXXXXXXX	CP1Cu3C4C5Ana7oce_Anatis_ocellata_833044_idba_contig_22_MERGED
-X-----	CP1Cu3C4C5Ca7dec	XXXXXXXXXX	CP1Cu3C4C5Ca7dec_Calvia_decemguttata_amei.idba.50	XXXXXXXXXX	CP1Cu3C4C5Ca7dec_Calvia_decemguttata_amei.idba.50_MERGED
-XXXXXXXXXX	CP1Cu3C4C5Ch7sex	XXXXXXXXXX	CP1Cu3C4C5Ch7sex_Cheilomenes_sexmaculata_KM244706	XXXXXXXXXX	CP1Cu3C4C5Ch7sex_Cheilomenes_sexmaculata_KM244706_MERGED
-X-----	CP1Cu3C4C5Co7mag	XXXXXXXXXX	CP1Cu3C4C5Co7mag_Coccinella_magnifica_amei.idba.0	XXXXXXXXXX	CP1Cu3C4C5Co7mag_Coccinella_magnifica_amei.idba.0_MERGED
-XX-----	CP1Cu3C4C5Ha7qua	XXXXXXXXXX	CP1Cu3C4C5Ha7qua_Harmonia_quadripunctata_amei.idba.4	XXXXXXXXXX	CP1Cu3C4C5Ha7qua_Harmonia_quadripunctata_amei.idba.4_MERGED
-XX-----	CP1Cu3C4C5Hal7sed	-XXXXXXXXXX	CP1Cu3C4C5Hal7sed_Halyzia_sedecimguttata_Staph.idba.68	-XXXXXXXXXX	CP1Cu3C4C5Hal7sed_Halyzia_sedecimguttata_Staph.idba.68_MERGED
-X-----	CP1Cu3C4C5Hi7und	XXXXXXXXXX	CP1Cu3C4C5Hi7und_Hippodamia_undecimnotata_amei.idba.26	XXXXXXXXXX	CP1Cu3C4C5Hi7und_Hippodamia_undecimnotata_amei.idba.26_MERGED
-XXXXXXXXXX	CP1Cu3C4C5Pr7jap	XXXXXXXXXX	CP1Cu3C4C5Pr7jap_Propylea_japonica_KM244660	XXXXXXXXXX	CP1Cu3C4C5Pr7jap_Propylea_japonica_KM244660_MERGED
-XX-----	CP1Cu3C4Co5Co7ruf	-XXXXXXXXXX	CP1Cu3C4Co5Co7ruf_Coccidula_rufa_JX412767	-XXXXXXXXXX	CP1Cu3C4Co5Co7ruf_Coccidula_rufa_JX412767_MERGED
XXXXXXXXXX	CP1Cu3C4E5E6He7pusi	XXXXXXXXXX	CP1Cu3C4E5E6He7pusi_Henosepilachna_pusillanima_NC_023469	XXXXXXXXXX	CP1Cu3C4E5E6He7pusi_Henosepilachna_pusillanima_NC_023469_MERGED
-XX-----	CP1Cu3C4E5E6Su7vig	XXXXXXXXXX	CP1Cu3C4E5E6Su7vig_Suboccinella_vigintiquatuorpunctata_Staph.idba.64	XXXXXXXXXX	CP1Cu3C4E5E6Su7vig_Suboccinella_vigintiquatuorpunctata_Staph.idba.64_MERGED
-XX-----	CP1Cu3Ce4Ce7his	XXXXX-X-XXX	CP1Cu3Ce4Ce7his_Cerylon_histeroides_HQ232821	XXXXX-X-XXX	CP1Cu3Ce4Ce7his_Cerylon_histeroides_HQ232821_MERGED
-XX-----	CP1Cu3Cr4Cr7pil	XXXXXXXXXX	CP1Cu3Cr4Cr7pil_Cryptophagus_pilosus_Soil.idba.15	XXXXXXXXXX	CP1Cu3Cr4Cr7pil_Cryptophagus_pilosus_Soil.idba.15_MERGED
-X-----	CP1Cu3Cr4Mi7vil	XXXXXXXXXX	CP1Cu3Cr4Mi7vil_Micrambe_villosus_amei.idba.34	XXXXXXXXXX	CP1Cu3Cr4Mi7vil_Micrambe_villosus_amei.idba.34_MERGED
XXXXXXXXXX	CP1Cu3Cu4Cu7cla	XXXXXXXXXX	CP1Cu3Cu4Cu7cla_Cucujus_clavipes_NC_018350	XXXXXXXXXX	CP1Cu3Cu4Cu7cla_Cucujus_clavipes_NC_018350_MERGED
-X-----	CP1Cu3Cu4Cu7hae	XXXXXXXXXX	CP1Cu3Cu4Cu7hae_Cucujus_haematodes_amei.idba.42	XXXXXXXXXX	CP1Cu3Cu4Cu7hae_Cucujus_haematodes_amei.idba.42_MERGED
-XX-----	CP1Cu3E4Tr7bip	-XXXX-XXXX	CP1Cu3E4Tr7bip_Tritoma_bipustulata_HQ232822	-XXXX-XXXX	CP1Cu3E4Tr7bip_Tritoma_bipustulata_HQ232822_MERGED
-XX-----	CP1Cu3En4End7coc	-XXXXXXXXXX	CP1Cu3En4End7coc_Endomychus_coccineus_JX313667	-XXXXXXXXXX	CP1Cu3En4End7coc_Endomychus_coccineus_JX313667_MERGED
-X-----	CP1Cu3K4Bra7ves	-XXXXXXXXXX	CP1Cu3K4Bra7ves_Brachypterolus_vestitus_amei.idba.107	-XXXXXXXXXX	CP1Cu3K4Bra7ves_Brachypterolus_vestitus_amei.idba.107_MERGED
-XX-----	CP1Cu3K4Ka7ped	-XXXX-XXXX	CP1Cu3K4Ka7ped_Kateretes_pedicularius_amei.idba.175	-XX-----	CP1Cu3K4Ka7ped_Kateretes_pedicularius_amei.idba.175_MERGED
-XXX-----	CP1Cu3Lat4Ca7nod	XXXXXXXXXX	CP1Cu3Lat4Ca7nod_Cartodere_nodifer_BIUK.idba.51	XXXXXXXXXX	CP1Cu3Lat4Ca7nod_Cartodere_nodifer_BIUK.idba.51_MERGED
-XX-----	CP1Cu3Lat4Co7gib	XXXXXXXXXX	CP1Cu3Lat4Co7gib_Corticinara_gibbosa_BIUK.idba.27	XXXXXXXXXX	CP1Cu3Lat4Co7gib_Corticinara_gibbosa_BIUK.idba.27_MERGED
-XX-----	CP1Cu3Lat4Co7sim	XXXXXXXXXX	CP1Cu3Lat4Co7sim_Corticarina_similata_BIUK.idba.1a	XXXXXXXXXX	CP1Cu3Lat4Co7sim_Corticarina_similata_BIUK.idba.1a_MERGED
-X-----	CP1Cu3Lat4En7bre	-XXXXXXXXXX	CP1Cu3Lat4En7bre_Enicmus_brevicornis_JX313681	-XXXXXXXXXX	CP1Cu3Lat4En7bre_Enicmus_brevicornis_JX313681_MERGED
-X-----	CP1Cu3M4M5Mo7qua	XXXXXXXXXX	CP1Cu3M4M5Mo7qua_Monotoma_quadricollis_676892_idba_contig_27-86	XXXXXXXXXX	CP1Cu3M4M5Mo7qua_Monotoma_quadricollis_676892_idba_contig_27-86_MERGED
-X-----	CP1Cu3M4R5Rh7aen	XXXXXXXXXX	CP1Cu3M4R5Rh7aen_Rhizophagus_aeneus_amei.idba.45	XXXXXXXXXX	CP1Cu3M4R5Rh7aen_Rhizophagus_aeneus_amei.idba.45_MERGED
-XX-----	CP1Cu3M4R5Rh7dis	-XXXX-XXXX	CP1Cu3M4R5Rh7dis_Rhizophagus_dispr_676912_idba_contig_113	-XXXX-XXXX	CP1Cu3M4R5Rh7dis_Rhizophagus_dispr_676912_idba_contig_113_MERGED
-XX-----	CP1Cu3N4C5Ep7me1	XXXXXXXXXX	CP1Cu3N4C5Ep7me1_Epuraea_melanocephala_BIUK.idba.43	XXXXXXXXXX	CP1Cu3N4C5Ep7me1_Epuraea_melanocephala_BIUK.idba.43_MERGED
-XX-----	CP1Cu3N4Cr5G17hor	-XXXXXXXXXX	CP1Cu3N4Cr5G17hor_Glischrochilus_hortensis_JX412778	-XXXXXXXXXX	CP1Cu3N4Cr5G17hor_Glischrochilus_hortensis_JX412778_MERGED
-XX-----	CP1Cu3N4N5Po7adu	XXXXXXXXXX	CP1Cu3N4N5Po7adu_Pocadius_ajustus_BIUK.idba.12	XXXXXXXXXX	CP1Cu3N4N5Po7adu_Pocadius_ajustus_BIUK.idba.12_MERGED
-XX-----	CP1Cu3P4Er7syl	XXX-----	CP1Cu3P4Er7syl_Ericmodes_sylvaticus_697044_idba_contig_61	XXX-----	CP1Cu3P4Er7syl_Ericmodes_sylvaticus_697044_idba_contig_61_MERGED
XXXXXXXXXX	CP1Cu3Ph4Pr7obs	XXXXXXXXXX	CP1Cu3Ph4Pr7obs_Priasilpha_obscura_NC_011326	XXXXXXXXXX	CP1Cu3Ph4Pr7obs_Priasilpha_obscura_NC_011326_MERGED
-XX-----	CP1Cu3S4As7orb	XXXXXXXXXX	CP1Cu3S4As7orb_Aspidiphorus_orbiculatus_Staph.idba.13	XXXXXXXXXX	CP1Cu3S4As7orb_Aspidiphorus_orbiculatus_Staph.idba.13_MERGED
-XX-----	CP1Cu3S4Sp7dub	-XXXXXXXXXX	CP1Cu3S4Sp7dub_Sphindus_dubius_JX412803	-XXXXXXXXXX	CP1Cu3S4Sp7dub_Sphindus_dubius_JX412803_MERGED
-X-----	CP1Cu3S14S50r7sur	XXXXXXXXXX	CP1Cu3S14S50r7sur_Oryzaephilus_surinamensis_Soil.idba.57	XXXXXXXXXX	CP1Cu3S14S50r7sur_Oryzaephilus_surinamensis_Soil.idba.57_MERGED

-XX-----XX-XXX	CP1Cu3S14S5S17uni	-----XXXX-XXXX	CP1Cu3S14S5S17uni_Silvanus_unidentatus_JX313687	-XX---XXXXXX-XX	CP1Cu3S14S5S17uni_Silvanus_unidentatus_JX313687_MERGED
-XX-----X---XX-	CP1Cur3A4A5P6P17alb	-XXXXXXXXXX-XXXX	CP1Cur3A4A5P6P17alb_Platystomos_albinus_JN163968	-XXXXXXXXXX-XX-	CP1Cur3A4A5P6P17alb_Platystomos_albinus_JN163968_MERGED
-XX-----XX-XX-	CP1Cur3AT4A5AT7nit	XXXXXXXXXXXX-XXXX	CP1Cur3AT4A5AT7nit_AtteLABUS_nitens_ameie_idba.73	XXXXXXXXXXXX-XX-	CP1Cur3AT4A5AT7nit_AtteLABUS_nitens_ameie_idba.73_MERGED
-X-----X-----	CP1Cur3AT4A5P7cor	-XXXXXXXXXX-XXXX	CP1Cur3AT4A5P7cor_Apoderus_coryli_JN163966	-XXXXXXXXXX-XXXX	CP1Cur3AT4A5P7cor_Apoderus_coryli_JN163966_MERGED
-X-----XX-----	CP1Cur3AT4R5B7pop	--XXXXXXXXXX-XXXX	CP1Cur3AT4R5B7pop_Byctiscus_populi_NC_018760	-X-XXXXXXXXXX-XXXX	CP1Cur3AT4R5B7pop_Byctiscus_populi_NC_018760_MERGED
-XX-----XX-----	CP1Cur3AT4R5De7bet	--XXXXXXXXXX-XXXX	CP1Cur3AT4R5De7bet_Deporaus_betulae_JN163945	-XXXXXXXXXX-XX-	CP1Cur3AT4R5De7bet_Deporaus_betulae_JN163945_MERGED
-X-----XX-----	CP1Cur3AT4R5De7tri	XXXXXXXXXX-XXXX	CP1Cur3AT4R5De7tri_Deporaus_tristis_ameie_idba.109	XXXXXXXXXX-XXXX	CP1Cur3AT4R5De7tri_Deporaus_tristis_ameie_idba.109_MERGED
-XX-----X---XX-	CP1Cur3Br4A5Be7sim	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3Br4A5Be7sim_Betulapion_simile_BIUK_idba.36	XXXXXXXXXXXXXXXX-XX-	CP1Cur3Br4A5Be7sim_Betulapion_simile_BIUK_idba.36_MERGED
-X-----XX-----	CP1Cur3Br4A5Pr7int	XXXXXXXXXX-XXXX	CP1Cur3Br4A5Pr7int_Protapion_interjectum_Soil_idba.118	XXXXXXXXXX-XXXX	CP1Cur3Br4A5Pr7int_Protapion_interjectum_Soil_idba.118_MERGED
-XX-----XX-----	CP1Cur3Br4A5Pr7tri	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3Br4A5Pr7tri_Protapion_trifolii_Soil_idba.58	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3Br4A5Pr7tri_Protapion_trifolii_Soil_idba.58_MERGED
-X-----XX-----	CP1Cur3Br4A5Rh7lon	--XXXXXXXXXX-XXXX	CP1Cur3Br4A5Rh7lon_Rhopalation_longirostre_JN163967	-XXXXXXXXXX-XXXX	CP1Cur3Br4A5Rh7lon_Rhopalation_longirostre_JN163967_MERGED
-XX-----X---XX-	CP1Cur3Br4N5Na7mar	-----XXXXXXXXXX-XXXX	CP1Cur3Br4N5Na7mar_Nanophyes_marmoratus_Curc_idba.93	-XX-XXXXXXXXXX-XX-	CP1Cur3Br4N5Na7mar_Nanophyes_marmoratus_Curc_idba.93_MERGED
-----XX-----	CP1Cur3Bra4B5Br7mur	--XXXXXXXXXX-XXXX	CP1Cur3Bra4B5Br7mur_Brachycerus_muricatus_JN163970	--XXXXXXXXXX-XX-	CP1Cur3Bra4B5Br7mur_Brachycerus_muricatus_JN163970_MERGED
-X-----XX-----	CP1Cur3Bra4B5Ha7DDM2009	-----XXXXXXXXXX-XXXX	CP1Cur3Bra4B5Ha7DDM2009_Haplonyx_spDDM-2009_Curc_idba.98	-X-----XXXXXXXXXX-XXXX	CP1Cur3Bra4B5Ha7DDM2009_Haplonyx_spDDM-2009_Curc_idba.98_MERGED
-X-----XX-----	CP1Cur3Bra4E5D07tor	XXXXXXXXXX-XXXX	CP1Cur3Bra4E5D07tor_Dorytomus_tortrix_ameie_idba.139	XXXXXXXXXX-XXXX	CP1Cur3Bra4E5D07tor_Dorytomus_tortrix_ameie_idba.139_MERGED
-XX-----X---X-	CP1Cur3C4C5A6An7pom	--XXXXXXXXXX-XXXX	CP1Cur3C4C5A6An7pom_Anthonomus_pomorum_JN163951	-XXXXXXXXXX-XX-	CP1Cur3C4C5A6An7pom_Anthonomus_pomorum_JN163951_MERGED
-X-----X-----	CP1Cur3C4C5A6Br7ke1	XXXXXXXXXXXX-XXXX	CP1Cur3C4C5A6Br7ke1_Bradybatus_kellneri_ameie_idba.54	XXXXXXXXXXXX-XXXX	CP1Cur3C4C5A6Br7ke1_Bradybatus_kellneri_ameie_idba.54_MERGED
-XX-----X---X-	CP1Cur3C4C5C6Cu7ele	XXXXXXXXXXXX-XXXX	CP1Cur3C4C5C6Cu7ele_Curculio_elephas_ameie_idba.5	XXXXXXXXXXXX-XX-	CP1Cur3C4C5C6Cu7ele_Curculio_elephas_ameie_idba.5_MERGED
-XX-----X-X-XXX-	CP1Cur3C4C5C6Cu7gla	-----XXXXXXXXXX-XXXX	CP1Cur3C4C5C6Cu7gla_Curculio_glandium_BIUK_idba.52	-XX-XXXXXXXXXXXX-XX-	CP1Cur3C4C5C6Cu7gla_Curculio_glandium_BIUK_idba.52_MERGED
-----X-X-XX-	CP1Cur3C4C5E6An7tar	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4C5E6An7tar_Ancyttalia_tarsalis_Curc_idba.45	XXXXXXXXXXXXXXXX-XX	CP1Cur3C4C5E6An7tar_Ancyttalia_tarsalis_Curc_idba.45_MERGED
-X-X-----XX-----	CP1Cur3C4C5M6Me7jan	--XXXXXX-XXXX	CP1Cur3C4C5M6Me7jan_Mecinus_janthinus_ameie_idba.143	-XXXXXX-XXXX	CP1Cur3C4C5M6Me7jan_Mecinus_janthinus_ameie_idba.143_MERGED
-XXX-----X-----	CP1Cur3C4Ce5Ce7obs	--XXXXXXXXXX-XXXX	CP1Cur3C4Ce5Ce7obs_Ceutorhynchus_obstrictus_JN163956	-XXXXXXXXXX-XX-	CP1Cur3C4Ce5Ce7obs_Ceutorhynchus_obstrictus_JN163956_MERGED
-X-----XX-----	CP1Cur3C4Ce5Mon7pun	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4Ce5Mon7pun_Mononychus_punctumalbum_Curc_idba.3	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4Ce5Mon7pun_Mononychus_punctumalbum_Curc_idba.3_MERGED
-XX-----X-----	CP1Cur3C4Ce5Rh7per	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4Ce5Rh7per_Rhinoncus_pericarpus_Curc_idba.24	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4Ce5Rh7per_Rhinoncus_pericarpus_Curc_idba.24_MERGED
-X-----X---X-	CP1Cur3C4C15C17ole	--XXXXXXXXXX-XXXX	CP1Cur3C4C15C17ole_Cionus_olens_JN163958	-XXXXXXXXXX-XX-	CP1Cur3C4C15C17ole_Cionus_olens_JN163958_MERGED
-XX-----X-X-XX-	CP1Cur3C4C15La7tur	--XXXXXXXXXX-XXXX	CP1Cur3C4C15La7tur_Larinus_turbinatus_JN163952	-XXXXXXXXXX-XX-	CP1Cur3C4C15La7tur_Larinus_turbinatus_JN163952_MERGED
-X-----XX-----	CP1Cur3C4C5C6Co7cyc	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4C5C6Co7cyc_Coptonotus_cyclopus_Curc_idba.67	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4C5C6Co7cyc_Coptonotus_cyclopus_Curc_idba.67_MERGED
-XX-----XX-----	CP1Cur3C4Cr5Ac7mis	-----XXXXXXXXXX-XXXX	CP1Cur3C4Cr5Ac7mis_Acalles_misellus_BIUK_idba.57	-XX-XXXXXXXXXXXX-XX-	CP1Cur3C4Cr5Ac7mis_Acalles_misellus_BIUK_idba.57_MERGED
-XX-----XX-XX-	CP1Cur3C4Cr5Ac7pti	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4Cr5Ac7pti_Acalles_ptinoides_BIUK_idba.42	XXXXXXXXXXXXXXXX-XX-	CP1Cur3C4Cr5Ac7pti_Acalles_ptinoides_BIUK_idba.42_MERGED
-X-----XX-----	CP1Cur3C4Cr5Ec7and	XXXX-XXXX	CP1Cur3C4Cr5Ec7and_Echinodera_andalusiensis_Soil_idba.193	XXXX-XXXX-XX-----	CP1Cur3C4Cr5Ec7and_Echinodera_andalusiensis_Soil_idba.193_MERGED
-X-----XX-----	CP1Cur3C4Cr5Ky7aub	--XXXXXXXXXX-XXXX	CP1Cur3C4Cr5Ky7aub_Kyklioacalles_aubei_JN163957	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4Cr5Ky7aub_Kyklioacalles_aubei_JN163957_MERGED
-X-----XX-----	CP1Cur3C4Cr5Ky7rob	-----XXXXXX-XXXX	CP1Cur3C4Cr5Ky7rob_Kyklioacalles_roboris_BIUK_idba.79	-X-----XXXXXX-XXXX	CP1Cur3C4Cr5Ky7rob_Kyklioacalles_roboris_BIUK_idba.79_MERGED
-XX-----XXX-X-X	CP1Cur3C4Cr5Ou7squ	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4Cr5Ou7squ_Ouroperopterus_squamiventris_Curc_idba.5	XXXXXXXXXXXXXXXX-X-X	CP1Cur3C4Cr5Ou7squ_Ouroperopterus_squamiventris_Curc_idba.5_MERGED
-X-----XX-----	CP1Cur3C4Cy5D17man	XXXXXXXXXXXX-XXXX	CP1Cur3C4Cy5D17man_Dichotrachelus_manueli_Curc_idba.88	XXXXXXXXXXXX-XXXX	CP1Cur3C4Cy5D17man_Dichotrachelus_manueli_Curc_idba.88_MERGED
-XX-----XX-----	CP1Cur3C4D5Co7sor	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4D5Co7sor_Cosmopolites_sordidus_Curc_idba.8	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4D5Co7sor_Cosmopolites_sordidus_Curc_idba.8_MERGED
-XX-----XXX-	CP1Cur3C4D5Rhi7bar	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4D5Rhi7bar_Rhinostomus_barbirostris_Panama_idba.10	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4D5Rhi7bar_Rhinostomus_barbirostris_Panama_idba.10_MERGED
-X-X-----XXXX	CP1Cur3C4D5Si7gra	--XXXXXX-XX-----	CP1Cur3C4D5Si7gra_Sitophilus_granarius_JN163959	-XXXXXX-XX-----XXXX	CP1Cur3C4D5Si7gra_Sitophilus_granarius_JN163959_MERGED
-XXX-----X-X-XX-	CP1Cur3C4E5B6St7mel	--XXXXXXXXXX-XXXX	CP1Cur3C4E5B6St7mel_Strophosoma_melanogrammum_JN163949	-XXXXXXXXXXXX-XX-	CP1Cur3C4E5B6St7mel_Strophosoma_melanogrammum_JN163949_MERGED
-----XX-----	CP1Cur3C4E5G6Ba7obs	-XXXXXXXXXX-XXXX	CP1Cur3C4E5G6Ba7obs_Barynotus_obscurus_JN163950	-XXXXXXXXXX-XX-	CP1Cur3C4E5G6Ba7obs_Barynotus_obscurus_JN163950_MERGED
XXXXXXXXXXXX-XXXX	CP1Cur3C4E5N6Na7xan	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4E5N6Na7xan_Naupactus_xanthographus_NC_018354	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4E5N6Na7xan_Naupactus_xanthographus_NC_018354_MERGED
-X-X-----XX-----	CP1Cur3C4E5Ot60T7mor	XXXXXXXXXXXX-XXXX	CP1Cur3C4E5Ot60T7mor_Otiorhynchus_morio_ameie_idba.90	XXXXXXXXXXXX-XXXX	CP1Cur3C4E5Ot60T7mor_Otiorhynchus_morio_ameie_idba.90_MERGED
-XXX-----X-----	CP1Cur3C4E5Ot60T7rug	--XXXXXXXXXX-XXXX	CP1Cur3C4E5Ot60T7rug_Otiorhynchus_rugosostriatus_JN163969	-XXXXXXXXXXXX-XXXX	CP1Cur3C4E5Ot60T7rug_Otiorhynchus_rugosostriatus_JN163969_MERGED
-XXX-----X-XXXX-	CP1Cur3C4E5Ot60T7sul	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4E5Ot60T7sul_Otiorhynchus_sulcatus_Curc_idba.36	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4E5Ot60T7sul_Otiorhynchus_sulcatus_Curc_idba.36_MERGED
-X-----XX-----	CP1Cur3C4E5Po6Po7mar	--XXXXXXXXXX-XXXX	CP1Cur3C4E5Po6Po7mar_Polydrusus_marginatus_JN039360	-XXXXXXXXXXXX-XXXX	CP1Cur3C4E5Po6Po7mar_Polydrusus_marginatus_JN039360_MERGED
-XX-----XX-----	CP1Cur3C4E5S6Si7dis	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4E5S6Si7dis_Sitona_discoideus_Soil_idba.86	XXXXXXXXXXXXXXXX-XX	CP1Cur3C4E5S6Si7dis_Sitona_discoideus_Soil_idba.86_MERGED
-XX-----X---X-	CP1Cur3C4E5S6Si7lin	--XXXXXXXXXX-XXXX	CP1Cur3C4E5S6Si7lin_Sitona_lineatus_JN163948	-XXXXXXXXXXXX-XX-	CP1Cur3C4E5S6Si7lin_Sitona_lineatus_JN163948_MERGED
-X-----XX-----	CP1Cur3C4E5T6T77ele	XXXXXXXXXXXX-XXXX	CP1Cur3C4E5T6T77ele_Tropiphorus_elevatus_ameie_idba.114	XXXXXXXXXXXX-XXXX	CP1Cur3C4E5T6T77ele_Tropiphorus_elevatus_ameie_idba.114_MERGED
-----XXX----	CP1Cur3C4H5Hy7bru	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4H5Hy7bru_Hypera_brunneipennis_Soil_idba.79	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4H5Hy7bru_Hypera_brunneipennis_Soil_idba.79_MERGED
-XXX-----XXXX-	CP1Cur3C4H5Hy7pos	--XXXXXXXXXX-XXXX	CP1Cur3C4H5Hy7pos_Hypera_postica_JN163953	-XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4H5Hy7pos_Hypera_postica_JN163953_MERGED
-XX-----X-----	CP1Cur3C4M5H6Hy7abi	--XXXXXXXXXX-XXXX	CP1Cur3C4M5H6Hy7abi_Hylobius_abietis_JN163954	-XXXXXXXXXXXX-XXXX	CP1Cur3C4M5H6Hy7abi_Hylobius_abietis_JN163954_MERGED
XXXXXXXX-XXXX-	CP1Cur3C4M5H6Hy17xia	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4M5H6Hy17xia_Hylobitelus_xiaoi_NC_022680	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4M5H6Hy17xia_Hylobitelus_xiaoi_NC_022680_MERGED
-X-----X-----	CP1Cur3C4M5P6P17pin	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4M5P6P17pin_Pissodes_pini_Curc_idba.48	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4M5P6P17pin_Pissodes_pini_Curc_idba.48_MERGED
-X-----XX-----	CP1Cur3C4P6Dia7uni	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4P6Dia7uni_Diapus_unispneus_Curc_idba.33	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4P6Dia7uni_Diapus_unispneus_Curc_idba.33_MERGED
-XX-----XX-----	CP1Cur3C4P6Eu7par	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4P6Eu7par_Euplatypus_parallelus_Scoly_idba.25	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4P6Eu7par_Euplatypus_parallelus_Scoly_idba.25_MERGED
-XX-----XX-----	CP1Cur3C4P6P17cyl	XXXXXXXXXXXXXXXX-XXXX	CP1Cur3C4P6P17cyl_Platypus_cylindrus_Curc_idba.22	XXXXXXXXXXXXXXXX-XX-	CP1Cur3C4P6P17cyl_Platypus_cylindrus_Curc_idba.22_MERGED

-XX-----X--XX-	CP1Cur3C4Po5Li7tes	--XXXXXXXXX-----	CP1Cur3C4Po5Li7tes_Liophloeus_tessulatus_JN163947	-XXXXXXXXXX--XX-	CP1Cur3C4Po5Li7tes_Liophloeus_tessulatus_JN163947_MERGED
-XX-----X-----	CP1Cur3C4Rh5Rh7que	XXXXXXXXXXXXXXXXX----	CP1Cur3C4Rh5Rh7que_Rhynchaenus_quercus_BIUK_idba.11	XXXXXXXXXXXXXXXXX----	CP1Cur3C4Rh5Rh7que_Rhynchaenus_quercus_BIUK_idba.11_MERGED
-X-----X-----	CP1Cur3C4S5An7dis	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5An7dis_Anisandrus_dispr_Scoly_idba.47	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5An7dis_Anisandrus_dispr_Scoly_idba.47_MERGED
-XX-----XX---	CP1Cur3C4S5Co7cyp	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Co7cyp_Coccotrypes_cyper_i FG_idba.60	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Co7cyp_Coccotrypes_cyper_i FG_idba.60_MERGED
-X-----X-----	CP1Cur3C4S5Co7rub	XXXXXXXXX-----	CP1Cur3C4S5Co7rub_Corthylus_rubricollis_Curc_idba.99	XXXXXXXXX-----X---	CP1Cur3C4S5Co7rub_Corthylus_rubricollis_Curc_idba.99_MERGED
-X-----X-----	CP1Cur3C4S5Cr7sal	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Cr7sal_Cryphalus_saltuarius_Curc_idba.19	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Cr7sal_Cryphalus_saltuarius_Curc_idba.19_MERGED
-X-----X-----	CP1Cur3C4S5Cry7pus	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Cry7pus_Crypturgus_pusillus_Curc_idba.42	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Cry7pus_Crypturgus_pusillus_Curc_idba.42_MERGED
-X-----X-----	CP1Cur3C4S5Cyc7bod	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Cyc7bod_Cyclorhipidion_bodoanus_Scoly_idba.52	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Cyc7bod_Cyclorhipidion_bodoanus_Scoly_idba.52_MERGED
-X-----X-----	CP1Cur3C4S5D17ine	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5D17ine_Diamerus_inermis_Curc_idba.58	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5D17ine_Diamerus_inermis_Curc_idba.58_MERGED
-XX-----XXXX-	CP1Cur3C4S5Dry7aut	-----XXXX-----	CP1Cur3C4S5Dry7aut_Dryocoetes_autographus_Curc_idba.118	-XX-----XXXXXX-	CP1Cur3C4S5Dry7aut_Dryocoetes_autographus_Curc_idba.118_MERGED
-X-----X-----	CP1Cur3C4S5Dry7vil	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Dry7vil_Dryocoetes_villosus_Scoly_idba.38	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Dry7vil_Dryocoetes_villosus_Scoly_idba.38_MERGED
-X-----X-----	CP1Cur3C4S5Ern7fag	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Ern7fag_Ernoporicus_fagi_amie_idba.75	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Ern7fag_Ernoporicus_fagi_amie_idba.75_MERGED
-XX-----X---	CP1Cur3C4S5Gna7mat	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Gna7mat_Gnathotrichus_materiarius_Scoly_idba.22	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Gna7mat_Gnathotrichus_materiarius_Scoly_idba.22_MERGED
-X-----XXX-	CP1Cur3C4S5Hyla7ate	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Hyla7ate_Hylastes_ater_Scoly_idba.54	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Hyla7ate_Hylastes_ater_Scoly_idba.54_MERGED
-X-----X-----	CP1Cur3C4S5Hyla7att	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Hyla7att_Hylastes_attenuatus_Scoly_idba.12	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Hyla7att_Hylastes_attenuatus_Scoly_idba.12_MERGED
-X-----XXX-	CP1Cur3C4S5Hyla7bru	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Hyla7bru_Hylastes_brunneus_Scoly_idba.41	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Hyla7bru_Hylastes_brunneus_Scoly_idba.41_MERGED
-X-----XXX-	CP1Cur3C4S5Hyla7opa	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Hyla7opa_Hylastes_opacus_Curc_idba.62	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Hyla7opa_Hylastes_opacus_Curc_idba.62_MERGED
-X-----XXX-	CP1Cur3C4S5Hyle7var	--XXXXX-----	CP1Cur3C4S5Hyle7var_Hylesinus_varius_amie_idba.170	-XXXXXX-----XXX-	CP1Cur3C4S5Hyle7var_Hylesinus_varius_amie_idba.170_MERGED
-X-----X--XXX-	CP1Cur3C4S5Hylur7pal	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Hylur7pal_Hylurgops_palliatus_Scoly_idba.48	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Hylur7pal_Hylurgops_palliatus_Scoly_idba.48_MERGED
-X-----X-----	CP1Cur3C4S5Hypo7fic	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Hypo7fic_Hypoborus_ficus_Curc_idba.77	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Hypo7fic_Hypoborus_ficus_Curc_idba.77_MERGED
-XX-----X--XXX-	CP1Cur3C4S5Ip7acu	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Ip7acu_Ips_acuminatus_Curc_idba.2	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Ip7acu_Ips_acuminatus_Curc_idba.2_MERGED
-X-----X--XXX-	CP1Cur3C4S5Ip7cem	--XXX--XXX-----	CP1Cur3C4S5Ip7cem_Ips_cembrae_JN163961	-XXX--XXX--XXX-	CP1Cur3C4S5Ip7cem_Ips_cembrae_JN163961_MERGED
-XX-----X--XXX-	CP1Cur3C4S5Ip7sex	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Ip7sex_Ips_sexdentatus_Scoly_idba.4	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Ip7sex_Ips_sexdentatus_Scoly_idba.4_MERGED
-XX-----X--XX-	CP1Cur3C4S5Or7lar	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Or7lar_Orthotomicus_laricis_Scoly_idba.3	XXXXXXXXXXXXXXXXX--X-	CP1Cur3C4S5Or7lar_Orthotomicus_laricis_Scoly_idba.3_MERGED
-X-----X--X---	CP1Cur3C4S5P17qua	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5P17qua_Pityogenes_quadridens_Scoly_idba.23	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5P17qua_Pityogenes_quadridens_Scoly_idba.23_MERGED
-XX-----XXXX-	CP1Cur3C4S5P17tre	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5P17tre_Pityogenes_trepanatus_Scoly_idba.5	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5P17tre_Pityogenes_trepanatus_Scoly_idba.5_MERGED
-X-----X-----	CP1Cur3C4S5Pity7mic	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Pity7mic_Pityophthorus_micrographus_Curc_idba.39	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Pity7mic_Pityophthorus_micrographus_Curc_idba.39_MERGED
-X-----X-----	CP1Cur3C4S5Pity7pub	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Pity7pub_Pityophthorus_pubescens_Scoly_idba.14	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Pity7pub_Pityophthorus_pubescens_Scoly_idba.14_MERGED
-XX-----X---	CP1Cur3C4S5Po7pol	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Po7pol_Polygraphus_poligraphus_Curc_idba.16	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Po7pol_Polygraphus_poligraphus_Curc_idba.16_MERGED
-XX-----X--XX--X	CP1Cur3C4S5Pr7cav	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Pr7cav_Premnobius_cavipennis_Curc_idba.4	XXXXXXXXXXXXXXXXX--X	CP1Cur3C4S5Pr7cav_Premnobius_cavipennis_Curc_idba.4_MERGED
-XX-----XX---	CP1Cur3C4S5Sa7dam	XXXXXXXXX-----	CP1Cur3C4S5Sa7dam_Sampsonius_dampfi_Scoly_idba.59	XXXXXXXXX-----XX---	CP1Cur3C4S5Sa7dam_Sampsonius_dampfi_Scoly_idba.59_MERGED
-X-----X-----	CP1Cur3C4S5Scol7sco	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Scol7sco_Scolytus_scolytus_Curc_idba.23	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Scol7sco_Scolytus_scolytus_Curc_idba.23_MERGED
-X-----XXX-	CP1Cur3C4S5Te7dew	-XXXXXXXX-----	CP1Cur3C4S5Te7dew_Tesserocerus_dewalquei_Curc_idba.95	-XXXXXXXX-----XXX-	CP1Cur3C4S5Te7dew_Tesserocerus_dewalquei_Curc_idba.95_MERGED
-XX-----XXXX-	CP1Cur3C4S5To7pin	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5To7pin_Tomicus_piniperda_Scoly_idba.17	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5To7pin_Tomicus_piniperda_Scoly_idba.17_MERGED
-X-----X-----	CP1Cur3C4S5Tr7dom	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Tr7dom_Trypodendron_domesticum_Scoly_idba.7	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Tr7dom_Trypodendron_domesticum_Scoly_idba.7_MERGED
-XX-----X---	CP1Cur3C4S5Tr7sig	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Tr7sig_Trypodendron_signatum_Scoly_idba.49	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Tr7sig_Trypodendron_signatum_Scoly_idba.49_MERGED
-XX-----XXX-	CP1Cur3C4S5Xy7saxe	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xy7saxe_Xyleborinus_saxesenii_Scoly_idba.28	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xy7saxe_Xyleborinus_saxesenii_Scoly_idba.28_MERGED
-XX-----XX---	CP1Cur3C4S5Xyl7aff	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xyl7aff_Xyleborus_affinis_Scoly_idba.33	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xyl7aff_Xyleborus_affinis_Scoly_idba.33_MERGED
-XX-----XX---	CP1Cur3C4S5Xyl7per	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xyl7per_Xyleborus_perforans_Scoly_idba.27	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xyl7per_Xyleborus_perforans_Scoly_idba.27_MERGED
-X-----X-----	CP1Cur3C4S5Xyl7vol	XXXXXXXXX-----	CP1Cur3C4S5Xyl7vol_Xyleborus_volvulus_Scoly_idba.63	XXXXXXXXX-----X---	CP1Cur3C4S5Xyl7vol_Xyleborus_volvulus_Scoly_idba.63_MERGED
-X-----X-----	CP1Cur3C4S5Xyl7com	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xyl7com_Xylosandrus_compactus_FG_idba.55	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xyl7com_Xylosandrus_compactus_FG_idba.55_MERGED
-XX-----XX---	CP1Cur3C4S5Xyl7cra	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xyl7cra_Xylosandrus_crassiusculus_Scoly_idba.34	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xyl7cra_Xylosandrus_crassiusculus_Scoly_idba.34_MERGED
-XX-----X---	CP1Cur3C4S5Xyl7ger	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xyl7ger_Xylosandrus_germanus_Scoly_idba.35	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xyl7ger_Xylosandrus_germanus_Scoly_idba.35_MERGED
-X-----X-----	CP1Cur3C4S5Xyl7mor	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xyl7mor_Xylosandrus_morigerus_Scoly_idba.37	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xyl7mor_Xylosandrus_morigerus_Scoly_idba.37_MERGED
-X-----X-----	CP1Cur3C4S5Xyl7mac	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xyl7mac_Xyloctonus_maculatus_Curc_idba.71	XXXXXXXXXXXXXXXXX----	CP1Cur3C4S5Xyl7mac_Xyloctonus_maculatus_Curc_idba.71_MERGED
-XX-----XX---	CP1Cur3C4T5T7pus	XXXXXXXXXXXXXXXXX----	CP1Cur3C4T5T7pus_Tychius_pusillus_Soil_idba.71	XXXXXXXXXXXXXXXXX----	CP1Cur3C4T5T7pus_Tychius_pusillus_Soil_idba.71_MERGED
-X-----X--XXX-	CP1Cur3M4D07aus	-XXXXXXXX-----	CP1Cur3M4D07aus_Doydirhynchus_austriacus_JN163964	-XXXXXXXX-----XXX-	CP1Cur3M4D07aus_Doydirhynchus_austriacus_JN163964_MERGED
-XX-----XX--XXX-	CP1D3D4Da7cer	-XXXXXXXX-----	CP1D3D4Da7cer_Dascillus_cervinus_JQ034414	-XXXXXXXX-----XXX-	CP1D3D4Da7cer_Dascillus_cervinus_JQ034414_MERGED
-XX-----XXXX-	CP1E3C4C5Ca7pel	-XXXXXXXX-----	CP1E3C4C5Ca7pel_Cantharis_pellucida_HQ232817	-XXXXXXXX-----XXXX-	CP1E3C4C5Ca7pel_Cantharis_pellucida_HQ232817_MERGED
-X-----X-----	CP1E3C4C5Ca7tri	-XXXXXXXX-----	CP1E3C4C5Ca7tri_Cantharis_tristis_amie_idba.95	-XXXXXXXX-----X-----	CP1E3C4C5Ca7tri_Cantharis_tristis_amie_idba.95_MERGED
XXXXXXXXXX-XXXXXX	CP1E3C4Ch5Ch7opa	XXXXXXXXXXXXXXXXX----	CP1E3C4Ch5Ch7opa_Chauliognathus_opacus_NC_013576	XXXXXXXXXXXXXXXXX----	CP1E3C4Ch5Ch7opa_Chauliognathus_opacus_NC_013576_MERGED
-X-----X-----	CP1E3C4M5Ma7bal	XXXXXXXXXXXXXXXXX----	CP1E3C4M5Ma7bal_Malthinus_balteatus_Soil_idba.38	XXXXXXXXXXXXXXXXX----	CP1E3C4M5Ma7bal_Malthinus_balteatus_Soil_idba.38_MERGED
-XX-----XXXX-	CP1E3C4M5Ma7mar	XXXXXXX-----	CP1E3C4M5Ma7mar_Malthodes_marginatus_BIUK_idba.61	XXXXXXX-----XXXX-	CP1E3C4M5Ma7mar_Malthodes_marginatus_BIUK_idba.61_MERGED
-XX-----XX--XXX-	CP1E3D4Dr7fla	XXXXXXXXXXXXXXXXX----	CP1E3D4Dr7fla_Drilus_flavescens_HQ232815	XXXXXXXXXXXXXXXXX----	CP1E3D4Dr7fla_Drilus_flavescens_HQ232815_MERGED
XXXX-XXXXX-X-X---	CP1E3E4A5Py7div	XXXXXXXXXXXXXXXXX----	CP1E3E4A5Py7div_Pyrophorus_divergens_NC_009964	XXXXXXXXXXXXXXXXX----	CP1E3E4A5Py7div_Pyrophorus_divergens_NC_009964_MERGED

-XX-----XX-XXX	CP1E3E4C5Dc7c9in	-XXXXXXXXXX-----	CP1E3E4C5Dc7c9in_Dicronychus_cinereus_amie.idba.96	-XXXXXXXXXXXX-XXX	CP1E3E4C5Dc7c9in_Dicronychus_cinereus_amie.idba.96_MERGED
-X-----XX-XXX	CP1E3E4D5Ca7bip	XXXXXXXXXXXXXXXX-----	CP1E3E4D5Ca7bip_Calambus_bipustulatus_BIUK.idba.31	XXXXXXXXXXXXXXXX-----	CP1E3E4D5Ca7bip_Calambus_bipustulatus_BIUK.idba.31_MERGED
-X-----XX-XXX	CP1E3E4D5Hyp7inu	XXXXXXXXXXXXXXXX-----	CP1E3E4D5Hyp7inu_Hypoganus_inunctus_amie.idba.58	XXXXXXXXXXXXXXXX-----	CP1E3E4D5Hyp7inu_Hypoganus_inunctus_amie.idba.58_MERGED
-XX-----XX-XXX	CP1E3E4D5PH7que	XXXXXXXXXX-----	CP1E3E4D5PH7que_Pheletes_quercus_amie.idba.137	XXXXXXXXXX-----XX-XXX	CP1E3E4D5PH7que_Pheletes_quercus_amie.idba.137_MERGED
-X-----XX-XXX	CP1E3E4De5An7cas	XXXXXXXXXXXXXXXX-----	CP1E3E4De5An7cas_Anostirus_castaneus_amie.idba.28	XXXXXXXXXXXXXXXX-----	CP1E3E4De5An7cas_Anostirus_castaneus_amie.idba.28_MERGED
-XX-----XX-XXX	CP1E3E4De5At7hae	XXXXXXXXXXXXXXXX-----	CP1E3E4De5At7hae_Athous_haemorrhoidalis_2VGB.idba.8	XXXXXXXXXXXXXXXX-----XXX	CP1E3E4De5At7hae_Athous_haemorrhoidalis_2VGB.idba.8_MERGED
-XX-----XX-XXX	CP1E3E4De5Lim7min	XXXXXXXXXXXXXXXX-----	CP1E3E4De5Lim7min_Limonius_minutus_amie.idba.27	XXXXXXXXXXXXXXXX-----	CP1E3E4De5Lim7min_Limonius_minutus_amie.idba.27_MERGED
-X-----XX-XXX	CP1E3E4E5Ad7rac	XXXXXXXXXXXXXXXX-----	CP1E3E4E5Ad7rac_Adrastus_rachifer_amie.idba.32	XXXXXXXXXXXXXXXX-----	CP1E3E4E5Ad7rac_Adrastus_rachifer_amie.idba.32_MERGED
-XX-----XX-XXX	CP1E3E4E5Ag7obs	XXXXXXXXXXXXXXXX-----	CP1E3E4E5Ag7obs_Aagriotes_obscurus_2VGB.idba.10	XXXXXXXXXXXXXXXX-----XXX	CP1E3E4E5Ag7obs_Aagriotes_obscurus_2VGB.idba.10_MERGED
-XX-----XX-XXX	CP1E3E4E5Ag7ust	-XXXXXXXXXXXX-----	CP1E3E4E5Ag7ust_Aagriotes_ustulatus_JX412737	-XXXXXXXXXXXX-----XXX	CP1E3E4E5Ag7ust_Aagriotes_ustulatus_JX412737_MERGED
-X-----XX-XXX	CP1E3E4E5Da7mar	XXXXXXXXXXXXXXXX-----	CP1E3E4E5Da7mar_Dalopius_marginatus_BIUK.idba.34	XXXXXXXXXXXXXXXX-----	CP1E3E4E5Da7mar_Dalopius_marginatus_BIUK.idba.34_MERGED
-X-----XX-XXX	CP1E3E4E5Id7pic	XXXXXXXXXXXXXXXX-----	CP1E3E4E5Id7pic_Idolus_picipennis_amie.idba.67	XXXXXXXXXXXXXXXX-----	CP1E3E4E5Id7pic_Idolus_picipennis_amie.idba.67_MERGED
-XX-----XX-XXX	CP1E3E4M5Me7vii	XXXXXXXXXXXXXXXX-----	CP1E3E4M5Me7vii_Melanotus_villosus_2VGB.idba.11	XXXXXXXXXXXXXXXX-----XXX	CP1E3E4M5Me7vii_Melanotus_villosus_2VGB.idba.11_MERGED
-X-----XX-XXX	CP1E3E4N5Ne7sab	XXXXXX-----	CP1E3E4N5Ne7sab_Negastrius_sabulicola_amie.idba.161	XXXXXX-----	CP1E3E4N5Ne7sab_Negastrius_sabulicola_amie.idba.161_MERGED
-XX-----XX-XXX	CP1E3E4U4Me7bup	XXXXXXXXXXXXXXXX-----	CP1E3E4U4Me7bup_Melasis_buprestoides_amie.idba.87	XXXXXXXXXXXXXXXX-----XXX	CP1E3E4U4Me7bup_Melasis_buprestoides_amie.idba.87_MERGED
-XX-----X--XX-	CP1E3L4L5La7noc	XXXXXXXXXXXXXXXX-----	CP1E3L4L5La7noc_Lampyrus_noctiluca_amie.idba.10	XXXXXXXXXXXXXXXX-----XX-	CP1E3L4L5La7noc_Lampyrus_noctiluca_amie.idba.10_MERGED
XXXXXXXXXXXX-XXX-XXX	CP1E3L4L5Py7ruf	XXXXXXXXXXXXXXXX-----	CP1E3L4L5Py7ruf_Pyrocoelia_rufa_NC_003970	XXXXXXXXXXXXXXXX-----	CP1E3L4L5Py7ruf_Pyrocoelia_rufa_NC_003970_MERGED
XXXXXXXXXXXX-XXX-XXX	CP1E3L4Lu5Aq7lei	XXXXXXXXXXXXXXXX-----	CP1E3L4Lu5Aq7lei_Aquatica_lei_NC_025276	XXXXXXXXXXXXXXXX-----	CP1E3L4Lu5Aq7lei_Aquatica_lei_NC_025276_MERGED
XXXXXXXXXXXX-XXX-XXX	CP1E3L4Lu5Lu7cru	XXXXXXXXXXXXXXXX-----	CP1E3L4Lu5Lu7cru_Luciola_cruciata_NC_022472	XXXXXXXXXXXXXXXX-----	CP1E3L4Lu5Lu7cru_Luciola_cruciata_NC_022472_MERGED
-XX-----X--XXX	CP1E3Ly4Be7tay	XXXXXXXXXXXXXXXX-----	CP1E3Ly4Be7tay_Benibotarus_taygetanus_amie.idba.23	XXXXXXXXXXXXXXXX-----XXX	CP1E3Ly4Be7tay_Benibotarus_taygetanus_amie.idba.23_MERGED
-XX-----X--XXX	CP1E3Ly4Dic7aur	XXXXXXXXXXXXXXXX-----	CP1E3Ly4Dic7aur_Dictyoptera_aurora_JX412733	XXXXXXXXXXXXXXXX-----XXX	CP1E3Ly4Dic7aur_Dictyoptera_aurora_JX412733_MERGED
-X-----X--XXX	CP1E3Ly4Li7gra	-----XXXXXXXX-----	CP1E3Ly4Li7gra_Libnetis_granicollis_JX412813	-X-----XXXXXXXX-----	CP1E3Ly4Li7gra_Libnetis_granicollis_JX412813_MERGED
-XX-----X--XXX	CP1E3Ly4Pl7cos	XXXXXXXX-----	CP1E3Ly4Pl7cos_Platycis_cosnardi_amie.idba.135	XXXXXXXX-----X--XXX	CP1E3Ly4Pl7cos_Platycis_cosnardi_amie.idba.135_MERGED
-XX-----X-XX-XXX	CP1E3040m7fon	-XXXXXXXXXXXX-----	CP1E3040m7fon_Omalisus_fontisbellaquei_JX412744	-XXXXXXXXXXXX-----XXX	CP1E3040m7fon_Omalisus_fontisbellaquei_JX412744_MERGED
-X-----X--XXX	CP1E30m4Dr7str	-XXXXXXXXXXXX-----	CP1E30m4Dr7str_Drilonius_striatulus_JX412822	-XXXXXXXXXXXX-----XXX	CP1E30m4Dr7str_Drilonius_striatulus_JX412822_MERGED
XXXXXXXX-XXXXX-XXX	CP1E3P4R5Rh7luf	XXXXXXXXXXXXXXXX-----	CP1E3P4R5Rh7luf_Rhagophthalmus_lufengensis_NC_010969	XXXXXXXXXXXXXXXX-----	CP1E3P4R5Rh7luf_Rhagophthalmus_lufengensis_NC_010969_MERGED
XXXXXXXXXXXXXXXX-XX-	CP1E3P4R5Rh7ohb	XXXXXXXXXXXXXXXX-----	CP1E3P4R5Rh7ohb_Rhagophthalmus_ohbai_NC_010964	XXXXXXXXXXXXXXXX-----XX-	CP1E3P4R5Rh7ohb_Rhagophthalmus_ohbai_NC_010964_MERGED
-XX-----X--XXX	CP1E3T4Tr7der	XXXXXXXXXXXXXXXX-----	CP1E3T4Tr7der_Trixaqus_dermestoides_BIUK.idba.35	XXXXXXXXXXXXXXXX-----XXX	CP1E3T4Tr7der_Trixaqus_dermestoides_BIUK.idba.35_MERGED
-X-----X--XXX	CP1H3H4H5Be7aff	XXXXXXXXXXXXXXXX-----	CP1H3H4H5Be7aff_Berosus_affinis_1VWB.idba.9	XXXXXXXXXXXXXXXX-----	CP1H3H4H5Be7aff_Berosus_affinis_1VWB.idba.9_MERGED
-XXX-----X-X-XXX	CP1H3H4H5Cy7mar	XXXXXXXXXXXXXXXX-----	CP1H3H4H5Cy7mar_Cymbiodyta_marginella_amie.idba.89	XXXXXXXXXXXXXXXX-----XXX	CP1H3H4H5Cy7mar_Cymbiodyta_marginella_amie.idba.89_MERGED
-XX-----XX-XXX	CP1H3H4S5Ce7uni	XXXXXXXXXXXXXXXX-----	CP1H3H4S5Ce7uni_Cercyon_unipunctatus_amie.idba.9	XXXXXXXXXXXXXXXX-----	CP1H3H4S5Ce7uni_Cercyon_unipunctatus_amie.idba.9_MERGED
-XXX-----XX-XXX	CP1H3H4S5Cr7min	XXXXXXXXXXXXXXXX-----	CP1H3H4S5Cr7min_Cryptopleurum_minutum_Staph.idba.52	XXXXXXXXXXXXXXXX-----XX-	CP1H3H4S5Cr7min_Cryptopleurum_minutum_Staph.idba.52_MERGED
-X-----XX-XXX	CP1H3H4S5Da7abd	XXXXXXXXXXXXXXXX-----	CP1H3H4S5Da7abd_Dactylosternum_abdominale_amie.idba.74	XXXXXXXXXXXXXXXX-----	CP1H3H4S5Da7abd_Dactylosternum_abdominale_amie.idba.74_MERGED
-XX-----X-X-XXX	CP1H3H4S5Sp7bip	XXXXXXXXXXXXXXXX-----	CP1H3H4S5Sp7bip_Sphaeridium_bipustulatum_Staph.idba.49	XXXXXXXXXXXXXXXX-----XXX	CP1H3H4S5Sp7bip_Sphaeridium_bipustulatum_Staph.idba.49_MERGED
-XX-----XXX-XX-	CP1H3Hy4Hy7car	XXXXXXXXXXXXXXXX-----	CP1H3Hy4Hy7car_Hydrochus_carinatus_729517_idba_contig_25	XXXXXXXXXXXXXXXX-----XX-	CP1H3Hy4Hy7car_Hydrochus_carinatus_729517_idba_contig_25_MERGED
-X-----XX-XXX	CP1H13H4D5P6Ki7min	XXXXXXXXXXXXXXXX-----	CP1H13H4D5P6Ki7min_Kissister_minimus_Soil.idba.27	XXXXXXXXXXXXXXXX-----XX-	CP1H13H4D5P6Ki7min_Kissister_minimus_Soil.idba.27_MERGED
-XX-----XXX-XXX	CP1H13H4D5P6Pa7f1a	-XXXXXXXXXXXX-----	CP1H13H4D5P6Pa7f1a_Paromalus_flavicornis_JX412766	-XXXXXXXXXXXX-----XXX	CP1H13H4D5P6Pa7f1a_Paromalus_flavicornis_JX412766_MERGED
-X-----XX-XXX	CP1H13H4H5H16Mar7mer	XXXXXXXXXXXXXXXX-----	CP1H13H4H5H16Mar7mer_Margarinotus_merdarius_Staph.idba.57	XXXXXXXXXXXXXXXX-----	CP1H13H4H5H16Mar7mer_Margarinotus_merdarius_Staph.idba.57_MERGED
XXXXXXXXXXXXXXXX-XX-	CP1H13H4S5Eu7sci	XXXXXXXXXXXXXXXX-----	CP1H13H4S5Eu7sci_Euspilotus_scissus_NC_018353	XXXXXXXXXXXXXXXX-----XX-	CP1H13H4S5Eu7sci_Euspilotus_scissus_NC_018353_MERGED
-XX-----XXX-XXX	CP1L3L4Hy7der	-XXXXXXXXXXXX-----	CP1L3L4Hy7der_Hylecoetus_dermestoides_HQ232820	-XXXXXXXXXXXX-----XXX	CP1L3L4Hy7der_Hylecoetus_dermestoides_HQ232820_MERGED
-XX-----XX-XXX	CP1L3L4Ly7nav	XXXXXXXXXXXXXXXX-----	CP1L3L4Ly7nav_Lymexylon_navale_amie.idba.55	XXXXXXXXXXXXXXXX-----XX-	CP1L3L4Ly7nav_Lymexylon_navale_amie.idba.55_MERGED
-X-----XX-XXX	CP1S3H4Me7MEM1	XXXXXXXXXXXXXXXX-----	CP1S3H4Me7MEM1_Meropathus_MEM1_675618_idba_contig_21	XXXXXXXXXXXXXXXX-----XX-	CP1S3H4Me7MEM1_Meropathus_MEM1_675618_idba_contig_21_MERGED
-X-----XX-XXX	CP1S3L4C5Ag7lab	-XXXXXXXXXXXX-----	CP1S3L4C5Ag7lab_Agyrtodes_labralis_JX412779	-XXXXXXXXXXXX-----XX-	CP1S3L4C5Ag7lab_Agyrtodes_labralis_JX412779_MERGED
-X-----XX-XXX	CP1S3L4Ch5Ca7cor	XXXXXXXXXXXXXXXX-----	CP1S3L4Ch5Ca7cor_Catops_coracinus_BIUK.idba.2	XXXXXXXXXXXXXXXX-----XXX	CP1S3L4Ch5Ca7cor_Catops_coracinus_BIUK.idba.2_MERGED
-X-----XX-XXX	CP1S3L4Ch5Es7jea	XXXXXX-----	CP1S3L4Ch5Es7jea_Espnoliella_jeanneli_Staph.idba.86	XXXXXX-----XX-XXX	CP1S3L4Ch5Es7jea_Espnoliella_jeanneli_Staph.idba.86_MERGED
-XX-----XX-XXX	CP1S3L4Ch5Na7ve1	-XXXXXXXXXXXX-----	CP1S3L4Ch5Na7ve1_Nargus_velox_JX313674	-XXXXXXXXXXXX-----XX-	CP1S3L4Ch5Na7ve1_Nargus_velox_JX313674_MERGED
-X-----XX-XXX	CP1S3L4Ch5Pha7fra	XXXXXXXXXXXXXXXX-----	CP1S3L4Ch5Pha7fra_Phacomorphus_fratylj_Staph.idba.18	XXXXXXXXXXXXXXXX-----XXX	CP1S3L4Ch5Pha7fra_Phacomorphus_fratylj_Staph.idba.18_MERGED
-X-----XX-X-X	CP1S3L4Ch5Pt7ten	XXXXXXXXXXXXXXXX-----	CP1S3L4Ch5Pt7ten_Ptomaphagus_tenuicornis_Soil.idba.24	XXXXXXXXXXXXXXXX-----X-X	CP1S3L4Ch5Pt7ten_Ptomaphagus_tenuicornis_Soil.idba.24_MERGED
-XX-----X-XX-XXX	CP1S3L4Ch5Sc7wat	XXXXXXXXXXXXXXXX-----	CP1S3L4Ch5Sc7wat_Sciodrepoides_watsoni_Staph.idba.6	XXXXXXXXXXXXXXXX-----XXX	CP1S3L4Ch5Sc7wat_Sciodrepoides_watsoni_Staph.idba.6_MERGED
-X-----X-XX-XXX	CP1S3L4Ch5Tr7oro	XXXXXXXXXXXXXXXX-----	CP1S3L4Ch5Tr7oro_Trapezodirus_orobios_Staph.idba.25	XXXXXXXXXXXXXXXX-----X-X	CP1S3L4Ch5Tr7oro_Trapezodirus_orobios_Staph.idba.25_MERGED
-XX-----XX-XXX	CP1S3L4L5Ag7atr	XXXXXXXXXXXXXXXX-----	CP1S3L4L5Ag7atr_Agathidium_atrum_BIUK.idba.3	XXXXXXXXXXXXXXXX-----	CP1S3L4L5Ag7atr_Agathidium_atrum_BIUK.idba.3_MERGED
-XX-----XX-XXX	CP1S3L4L5An7hum	-XXXXXXXXXXXX-----	CP1S3L4L5An7hum_Anisotoma_humeralis_amie.idba.93	-XXXXXXXXXXXX-----XX-	CP1S3L4L5An7hum_Anisotoma_humeralis_amie.idba.93_MERGED
-X-----XX-XXX	CP1S3L4L5Le7pic	XXXXXX-----	CP1S3L4L5Le7pic_Leiodes_picea_amie.idba.151	XXXXXX-----	CP1S3L4L5Le7pic_Leiodes_picea_amie.idba.151_MERGED
-X-----XX-XXX	CP1S3L4L5Tr7mae	XXXXXXXXXXXXXXXX-----	CP1S3L4L5Tr7mae_Triarthron_maerkelii_amie.idba.15	XXXXXXXXXXXXXXXX-----	CP1S3L4L5Tr7mae_Triarthron_maerkelii_amie.idba.15_MERGED
-XX-----XX-XXX	CP1S3P4A5Ac7ins	-XXXXXXXXXXXX-----	CP1S3P4A5Ac7ins_Acrotrichis_insularis_BIUK.idba.28	-XXXXXXXXXXXX-----	CP1S3P4A5Ac7ins_Acrotrichis_insularis_BIUK.idba.28_MERGED

-XX- - - - -	CP1S3S4A5A6A17lan	XXXXXXXXXXXXX	CP1S3S4A5A6A17lan_Aleochara_lanuginosa_BIUk.idba.29	XXXXXXXXXXXXX	CP1S3S4A5A6A17lan_Aleochara_lanuginosa_BIUk.idba.29_MERGED
-XX- - - - -	CP1S3S4A5A6A17ver	-XXXXX- - - - -	CP1S3S4A5A6A17ver_Aleochara_verna_Staph.idba.93	-XXXXX- - - - -	CP1S3S4A5A6A17ver_Aleochara_verna_Staph.idba.93_MERGED
-X- - - - -	CP1S3S4A5A6A7obf	XXXX- - - - -	CP1S3S4A5A6A7obf_Acrotona_obfuscata_Staph.idba.85	XXXX- - - - -	CP1S3S4A5A6A7obf_Acrotona_obfuscata_Staph.idba.85_MERGED
-XX- - - - -	CP1S3S4A5A6A7cur	XXXXXXXXXXXXX	CP1S3S4A5A6A7cur_Alloconota_currax_Staph.idba.39	XXXXXXXXXXXXX	CP1S3S4A5A6A7cur_Alloconota_currax_Staph.idba.39_MERGED
-XX- - - - -	CP1S3S4A5A6A7ana	XX- - - - -	CP1S3S4A5A6A7ana_Amischa_analis_Staph.idba.70	XXXX- - - - -	CP1S3S4A5A6A7ana_Amischa_analis_Staph.idba.70_MERGED
-X- - - - -	CP1S3S4A5A6A7ami	XXXXXXXXXXXXX	CP1S3S4A5A6A7ami_Atheta_amicula_Staph.idba.42	XXXXXXXXXXXXX	CP1S3S4A5A6A7ami_Atheta_amicula_Staph.idba.42_MERGED
-XX- - - - -	CP1S3S4A5A6A7cas	XXXXXXXXXXXXX	CP1S3S4A5A6A7cas_Atheta_castanoptera_BIUk.idba.6	XXXXXXXXXXXXX	CP1S3S4A5A6A7cas_Atheta_castanoptera_BIUk.idba.6_MERGED
-XX- - - - -	CP1S3S4A5A6A7fun	XXXXXXXXXXXXX	CP1S3S4A5A6A7fun_Atheta_fungi_Soil.idba.12	XXXXXXXXXXXXX	CP1S3S4A5A6A7fun_Atheta_fungi_Soil.idba.12_MERGED
-X- - - - -	CP1S3S4A5A6A7fung	XXXXXXXXXXXXX	CP1S3S4A5A6A7fung_Atheta_fungivora_Staph.idba.37	XXXXXXXXXXXXX	CP1S3S4A5A6A7fung_Atheta_fungivora_Staph.idba.37_MERGED
-XX- - - - -	CP1S3S4A5A6A7gag	XXXXXXXXXXXXX	CP1S3S4A5A6A7gag_Atheta_gagatina_Staph.idba.20	XXXXXXXXXXXXX	CP1S3S4A5A6A7gag_Atheta_gagatina_Staph.idba.20_MERGED
-XX- - - - -	CP1S3S4A5A6A7hyp	XXXXXXXXXXXXX	CP1S3S4A5A6A7hyp_Atheta_hypnorum_BIUk.idba.4	XXXXXXXXXXXXX	CP1S3S4A5A6A7hyp_Atheta_hypnorum_BIUk.idba.4_MERGED
-XX- - - - -	CP1S3S4A5A6A7vol	-XXXXXXXXXXXXX	CP1S3S4A5A6A7vol_Atheta_volans_Staph.idba.63	-XXXXXXXXXXXXX	CP1S3S4A5A6A7vol_Atheta_volans_Staph.idba.63_MERGED
-XX- - - - -	CP1S3S4A5A6Ca7obs	XXXXXXXXXXXXX	CP1S3S4A5A6Ca7obs_Callicerus_obscurus_Staph.idba.39	XXXXXXXXXXXXX	CP1S3S4A5A6Ca7obs_Callicerus_obscurus_Staph.idba.39_MERGED
-XX- - - - -	CP1S3S4A5A6Ge7cir	XXXXXXXXXXXXX	CP1S3S4A5A6Ge7cir_Geostiba_circellaris_BIUk.idba.25	XXXXXXXXXXXXX	CP1S3S4A5A6Ge7cir_Geostiba_circellaris_BIUk.idba.25_MERGED
-XX- - - - -	CP1S3S4A5A6Li7mic	XXXXXXXXXXXXX	CP1S3S4A5A6Li7mic_Lioglutula_longiuscula_BIUk.idba.24	XXXXXXXXXXXXX	CP1S3S4A5A6Li7mic_Lioglutula_longiuscula_BIUk.idba.24_MERGED
-XX- - - - -	CP1S3S4A5A6Mo7fun	-XXXXX- - - - -	CP1S3S4A5A6Mo7fun_Mocyta_fungi_BIUk.idba.80	-XXXXX- - - - -	CP1S3S4A5A6Mo7fun_Mocyta_fungi_BIUk.idba.80_MERGED
-XX- - - - -	CP1S3S4A5B6Eu7opt	XXXXXXXXXXXXX	CP1S3S4A5B6Eu7opt_Euryusa_optabilis_Staph.idba.22	XXXXXXXXXXXXX	CP1S3S4A5B6Eu7opt_Euryusa_optabilis_Staph.idba.22_MERGED
-XX- - - - -	CP1S3S4A5Lo6Lo7pub	XXXXXXXXXXXXX	CP1S3S4A5Lo6Lo7pub_Lomechusa_publicollis_Soil.idba.4	XXXXXXXXXXXXX	CP1S3S4A5Lo6Lo7pub_Lomechusa_publicollis_Soil.idba.4_MERGED
-XX- - - - -	CP1S3S4A5O6Cr7sut	-XXXXXXXXXXXXX	CP1S3S4A5O6Cr7sut_Crataraea_suturalis_Staph.idba.50	-XXXXXXXXXXXXX	CP1S3S4A5O6Cr7sut_Crataraea_suturalis_Staph.idba.50_MERGED
-XX- - - - -	CP1S3S4A5O6De7cor	XXXXXXXXXXXXX	CP1S3S4A5O6De7cor_Dexiogyia_corticina_Staph.idba.34	XXXXXXXXXXXXX	CP1S3S4A5O6De7cor_Dexiogyia_corticina_Staph.idba.34_MERGED
-XX- - - - -	CP1S3S4A5O6Ox7acu	XXXXXXXXXXXXX	CP1S3S4A5O6Ox7acu_Oxypoda_acuminata_BIUk.idba.20	XXXXXXXXXXXXX	CP1S3S4A5O6Ox7acu_Oxypoda_acuminata_BIUk.idba.20_MERGED
-X- - - - -	CP1S3S4A5O6Ox7bre	XXXXXXXXXXXXX	CP1S3S4A5O6Ox7bre_Oxypoda_brevicornis_BIUk.idba.22	XXXXXXXXXXXXX	CP1S3S4A5O6Ox7bre_Oxypoda_brevicornis_BIUk.idba.22_MERGED
-XX- - - - -	CP1S3S4A5O6Ox7lon	XXXXXXXXXXXXX	CP1S3S4A5O6Ox7lon_Oxypoda_longipes_Staph.idba.36	XXXXXXXXXXXXX	CP1S3S4A5O6Ox7lon_Oxypoda_longipes_Staph.idba.36_MERGED
-XX- - - - -	CP1S3S4A5O6Ox7opa	X-XXXXXX-XXXX	CP1S3S4A5O6Ox7opa_Oxypoda_opaca_JX412751	XXXXXXXXXX-XXXX	CP1S3S4A5O6Ox7opa_Oxypoda_opaca_JX412751_MERGED
-XX- - - - -	CP1S3S4A5O6Par7lon	-XXXXXXXXXXXXX	CP1S3S4A5O6Par7lon_Parocycusa_longitarsis_JX313678	-XXXXXXXXXXXXX	CP1S3S4A5O6Par7lon_Parocycusa_longitarsis_JX313678_MERGED
-XX- - - - -	CP1S3S4A5O6Ph7tes	-XXXXXX- - - - -	CP1S3S4A5O6Ph7tes_Phloeopora_testacea_Staph.idba.81	-XXXXXX- - - - -	CP1S3S4A5O6Ph7tes_Phloeopora_testacea_Staph.idba.81_MERGED
-XX- - - - -	CP1S3S4A5T6Da7fal	XXXXXXXXXXXXX	CP1S3S4A5T6Da7fal_Dacrila_fallax_Staph.idba.43	XXXXXXXXXXXXX	CP1S3S4A5T6Da7fal_Dacrila_fallax_Staph.idba.43_MERGED
-XX- - - - -	CP1S3S4A5T6Th7atr	XXXXXXXXXXXXX	CP1S3S4A5T6Th7atr_Thinonoma_atra_Staph.idba.40	XXXXXXXXXXXXX	CP1S3S4A5T6Th7atr_Thinonoma_atra_Staph.idba.40_MERGED
-XX- - - - -	CP1S3S4Eu5Eu7ruf	XXXXXXXXXXXXX	CP1S3S4Eu5Eu7ruf_Euaesthetus_ruficapillus_Staph.idba.45	XXXXXXXXXXXXX	CP1S3S4Eu5Eu7ruf_Euaesthetus_ruficapillus_Staph.idba.45_MERGED
-XX- - - - -	CP1S3S4H5Ha7cap	XXXXXXXXXXXXX	CP1S3S4H5Ha7cap_Habrocerus_capillaricornis_JX412795	XXXXXXXXXXXXX	CP1S3S4H5Ha7cap_Habrocerus_capillaricornis_JX412795_MERGED
-XX- - - - -	CP1S3S4O5An7atr	XXXXXX- - - - -	CP1S3S4O5An7atr_Anthobium_atrocephalum_BIUk.idba.67	XXXXXX- - - - -	CP1S3S4O5An7atr_Anthobium_atrocephalum_BIUk.idba.67_MERGED
-X- - - - -	CP1S3S4O5An7mel	XXXXXXXXXXXXX	CP1S3S4O5An7mel_Anthobium_melanocephalum_ameie.idba.2	XXXXXXXXXXXXX	CP1S3S4O5An7mel_Anthobium_melanocephalum_ameie.idba.2_MERGED
-X- - - - -	CP1S3S4O5Eu7tor	XXXXXXXXXXXXX	CP1S3S4O5Eu7tor_Euspalerum_torquatum_Staph.idba.31	XXXXXXXXXXXXX	CP1S3S4O5Eu7tor_Euspalerum_torquatum_Staph.idba.31_MERGED
-XX- - - - -	CP1S3S4O5Ne7bru	XXXXXXXXXXXXX	CP1S3S4O5Ne7bru_Neophonus_bruchi_Staph.idba.0	XXXXXXXXXXXXX	CP1S3S4O5Ne7bru_Neophonus_bruchi_Staph.idba.0_MERGED
-X- - - - -	CP1S3S4O5O17pic	XXXXXXXXXXXXX	CP1S3S4O5O17pic_Olophrum_piceum_Staph.idba.35	XXXXXXXXXXXXX	CP1S3S4O5O17pic_Olophrum_piceum_Staph.idba.35_MERGED
-XX- - - - -	CP1S3S4O5Om7riv	-XXXXXXXXXXXXX	CP1S3S4O5Om7riv_Omalium_rivulare_JX412759	-XXXXXXXXXXXXX	CP1S3S4O5Om7riv_Omalium_rivulare_JX412759_MERGED
-XX- - - - -	CP1S3S4O5Om7rug	XXXXXXXXXXXXX	CP1S3S4O5Om7rug_Omalium_rugatum_BIUk.idba.7	XXXXXXXXXXXXX	CP1S3S4O5Om7rug_Omalium_rugatum_BIUk.idba.7_MERGED
-X- - - - -	CP1S3S4Ox5An7mut	-XXXXXXXXXXXXX	CP1S3S4Ox5An7mut_Anotylus_mutator_BIUk.idba.48	-XXXXXXXXXXXXX	CP1S3S4Ox5An7mut_Anotylus_mutator_BIUk.idba.48_MERGED
-XX- - - - -	CP1S3S4Ox5An7scu	-XXXXXX- - - - -	CP1S3S4Ox5An7scu_Anotylus_sculpturatus_Staph.idba.76	-XXXXXX- - - - -	CP1S3S4Ox5An7scu_Anotylus_sculpturatus_Staph.idba.76_MERGED
-X- - - - -	CP1S3S4Ox5Ca7ful	X-XXXXXXXXXX- - - - -	CP1S3S4Ox5Ca7ful_Carpelimus_fuliginosus_ameie.idba.60	XXXXXXXXXXXXX	CP1S3S4Ox5Ca7ful_Carpelimus_fuliginosus_ameie.idba.60_MERGED
-XX- - - - -	CP1S3S4Ox5Ox7pic	XXXXXXXXXXXXX	CP1S3S4Ox5Ox7pic_Oxytelus_piceus_ameie.idba.86	XXXXXXXXXXXXX	CP1S3S4Ox5Ox7pic_Oxytelus_piceus_ameie.idba.86_MERGED
-X- - - - -	CP1S3S4P5A7lyo	XXXXXXXXXXXXX	CP1S3S4P5A7lyo_Astenus_lyonessius_Staph.idba.17	XXXXXXXXXXXXX	CP1S3S4P5A7lyo_Astenus_lyonessius_Staph.idba.17_MERGED
-X- - - - -	CP1S3S4P5Hy7deb	-XXXXXXXXXXXXX	CP1S3S4P5Hy7deb_Hypomedon_debilocornis_JX313672	-XXXXXXXXXXXXX	CP1S3S4P5Hy7deb_Hypomedon_debilocornis_JX313672_MERGED
-XX- - - - -	CP1S3S4P5La7bru	XXXXXXXXXXXXX	CP1S3S4P5La7bru_Lathrobium_brunnipes_Staph.idba.10	XXXXXXXXXXXXX	CP1S3S4P5La7bru_Lathrobium_brunnipes_Staph.idba.10_MERGED
-XX- - - - -	CP1S3S4P5La7ful	XXXXXX- - - - -	CP1S3S4P5La7ful_Lathrobium_fulvipenne_BIUk.idba.70	XXXXXX- - - - -	CP1S3S4P5La7ful_Lathrobium_fulvipenne_BIUk.idba.70_MERGED
-XX- - - - -	CP1S3S4P5Me7api	XXXXXXXXXXXXX	CP1S3S4P5Me7api_Medon_apicalis_Staph.idba.9	XXXXXXXXXXXXX	CP1S3S4P5Me7api_Medon_apicalis_Staph.idba.9_MERGED
-X- - - - -	CP1S3S4P5Me7pic	XXXXXXXXXXXXX	CP1S3S4P5Me7pic_Medon_piceus_ameie.idba.112	XXXXXXXXXXXXX	CP1S3S4P5Me7pic_Medon_piceus_ameie.idba.112_MERGED
-XX- - - - -	CP1S3S4P5Ru7gen	XXXXXXXXXXXXX	CP1S3S4P5Ru7gen_Rugilus_geniculatus_Staph.idba.38	XXXXXXXXXXXXX	CP1S3S4P5Ru7gen_Rugilus_geniculatus_Staph.idba.38_MERGED
-X- - - - -	CP1S3S4P5Su7mel	XXXXXXXXXXXXX	CP1S3S4P5Su7mel_Sunius_melanocephalus_Staph.idba.61	XXXXXXXXXXXXX	CP1S3S4P5Su7mel_Sunius_melanocephalus_Staph.idba.61_MERGED
-XX- - - - -	CP1S3S4P5Te7ter	XXXXXXXXXXXXX	CP1S3S4P5Te7ter_Tetartopeus_terminatus_Staph.idba.27	XXXXXXXXXXXXX	CP1S3S4P5Te7ter_Tetartopeus_terminatus_Staph.idba.27_MERGED
-XX- - - - -	CP1S3S4Ps5Bra7fos	XXXXXXXXXXXXX	CP1S3S4Ps5Bra7fos_Brachygluta_fossulata_BIUk.idba.21	XXXXXXXXXXXXX	CP1S3S4Ps5Bra7fos_Brachygluta_fossulata_BIUk.idba.21_MERGED
-XX- - - - -	CP1S3S4Ps5Bra7hel	XXXXXX- - - - -	CP1S3S4Ps5Bra7hel_Brachygluta_helferi_Staph.idba.82	XXXXXX- - - - -	CP1S3S4Ps5Bra7hel_Brachygluta_helferi_Staph.idba.82_MERGED
-X- - - - -	CP1S3S4Ps5Ct7pic	XXXXX- - - - -	CP1S3S4Ps5Ct7pic_Ctenisodes_piceus_Staph.idba.88	XXXXX- - - - -	CP1S3S4Ps5Ct7pic_Ctenisodes_piceus_Staph.idba.88_MERGED
-XX- - - - -	CP1S3S4Ps5Eu7pic	-XXXXXXXXXXXXX	CP1S3S4Ps5Eu7pic_Euplectus_piceus_BIUk.idba.53	-XXXXXXXXXXXXX	CP1S3S4Ps5Eu7pic_Euplectus_piceus_BIUk.idba.53_MERGED
-XX- - - - -	CP1S3S4Ps5Ty7nig	XXXXXXXXXXXXX	CP1S3S4Ps5Ty7nig_Tychus_niger_BIUk.idba.17	XXXXXXXXXXXXX	CP1S3S4Ps5Ty7nig_Tychus_niger_BIUk.idba.17_MERGED



--X-----	CP1S3S4Q5Qu7nem	XXXXXXXXXXXX	CP1S3S4Q5Qu7nem_Quedius_nemoralis_BIUK.idba.5	XXXXXXXXXXXX	CP1S3S4Q5Qu7nem_Quedius_nemoralis_BIUK.idba.5_MERGED
--X-----XX-	CP1S3S4S5Br7lat	--XXXXXXXX--	CP1S3S4S5Br7lat_Brachynopus_latus_JX412745	--XXXXXXXX--	CP1S3S4S5Br7lat_Brachynopus_latus_JX412745_MERGED
-XX-----XX-XXX	CP1S3S4S5Sc7qua	XXXXXXXXXXXX	CP1S3S4S5Sc7qua_Scaphidium_quadrimaculatum_Staph.idba.5	XXXXXXXXXXXX	CP1S3S4S5Sc7qua_Scaphidium_quadrimaculatum_Staph.idba.5_MERGED
-X-----	CP1S3S4S5Sca7bol	XXXXXXXXXXXX	CP1S3S4S5Sca7bol_Scaphisoma_boleti_Staph.idba.55	XXXXXXXXXXXX	CP1S3S4S5Sca7bol_Scaphisoma_boleti_Staph.idba.55_MERGED
-XX-----X-----	CP1S3S4St5St7cla	XXXXXXXXXXXX	CP1S3S4St5St7cla_Stenus_clavicornis_2VGB.idba.1	XXXXXXXXXXXX	CP1S3S4St5St7cla_Stenus_clavicornis_2VGB.idba.1_MERGED
-XX-----X-----	CP1S3S4St5St7com	XXXXXXXXXXXX	CP1S3S4St5St7com_Stenus_comma_Staph.idba.58	XXXXXXXXXXXX	CP1S3S4St5St7com_Stenus_comma_Staph.idba.58_MERGED
-XX-----XX-	CP1S3S4Sta506At7aff	XXXXXXXXXXXX	CP1S3S4Sta506At7aff_Atreucus_affinis_Staph.idba.41	XXXXXXXXXXXX	CP1S3S4Sta506At7aff_Atreucus_affinis_Staph.idba.41_MERGED
-XX-----	CP1S3S4Sta5060t7lae	XXXXXX	CP1S3S4Sta5060t7lae_Othius_laeviusculus_amei.idba.150	XXXXXX	CP1S3S4Sta5060t7lae_Othius_laeviusculus_amei.idba.150_MERGED
-XX-----	CP1S3S4Sta5060t7pun	XXXXXX	CP1S3S4Sta5060t7pun_Othius_punctulatus_Soil.idba.158	XXXXXX	CP1S3S4Sta5060t7pun_Othius_punctulatus_Soil.idba.158_MERGED
-XX-----	CP1S3S4Sta5P6Ga7pil	XXXXXXXXXXXX	CP1S3S4Sta5P6Ga7pil_Gabrius_piliger_Staph.idba.12	XXXXXXXXXXXX	CP1S3S4Sta5P6Ga7pil_Gabrius_piliger_Staph.idba.12_MERGED
-XX-----	CP1S3S4Sta5S6B17sor	XXXXXXXXXXXX	CP1S3S4Sta5S6B17sor_Bisnius_sordidus_Staph.idba.16	XXXXXXXXXXXX	CP1S3S4Sta5S6B17sor_Bisnius_sordidus_Staph.idba.16_MERGED
-X-----	CP1S3S4Sta5S6Gab7the	XXXXXXXXXXXX	CP1S3S4Sta5S6Gab7the_Gabronthus_thermarum_Staph.idba.53	XXXXXXXXXXXX	CP1S3S4Sta5S6Gab7the_Gabronthus_thermarum_Staph.idba.53_MERGED
-----XX-	CP1S3S4Sta5S6Ne7vil	XXXXXXXXXXXX	CP1S3S4Sta5S6Ne7vil_Neobisnius_villosulus_Staph.idba.1	XXXXXXXXXXXX	CP1S3S4Sta5S6Ne7vil_Neobisnius_villosulus_Staph.idba.1_MERGED
-XX-----	CP1S3S4Sta5S6Oc7aet	XXXXXXXXXXXX	CP1S3S4Sta5S6Oc7aet_Ocypus_aethiops_Soil.idba.34	XXXXXXXXXXXX	CP1S3S4Sta5S6Oc7aet_Ocypus_aethiops_Soil.idba.34_MERGED
-X-----	CP1S3S4Sta5S6Oc7bru	XXXXXXXXXXXX	CP1S3S4Sta5S6Oc7bru_Ocypus_brunnipes_Staph.idba.56	XXXXXXXXXXXX	CP1S3S4Sta5S6Oc7bru_Ocypus_brunnipes_Staph.idba.56_MERGED
-XX-----	CP1S3S4Sta5S6Oc7ole	XXXXXXXXXXXX	CP1S3S4Sta5S6Oc7ole_Ocypus_olens_2VGB.idba.7	XXXXXXXXXXXX	CP1S3S4Sta5S6Oc7ole_Ocypus_olens_2VGB.idba.7_MERGED
-XX-----XX-	CP1S3S4Sta5S6Oc7oph	XXXXXXXXXXXX	CP1S3S4Sta5S6Oc7oph_Ocypus_ophthalmicus_amei.idba.21	XXXXXXXXXXXX	CP1S3S4Sta5S6Oc7oph_Ocypus_ophthalmicus_amei.idba.21_MERGED
-XX-----XX-	CP1S3S4Sta5S6On7tes	XXXXXXXXXXXX	CP1S3S4Sta5S6On7tes_Ontholestes_tessellatus_amei.idba.69	XXXXXXXXXXXX	CP1S3S4Sta5S6On7tes_Ontholestes_tessellatus_amei.idba.69_MERGED
-XX-----XX-	CP1S3S4Sta5S6Ph7fim	XXXXXXXXXXXX	CP1S3S4Sta5S6Ph7fim_Philonthus_fimeticus_Staph.idba.11	XXXXXXXXXXXX	CP1S3S4Sta5S6Ph7fim_Philonthus_fimeticus_Staph.idba.11_MERGED
-X-----	CP1S3S4Sta5S6Ta7mor	XXXXXXXXXXXX	CP1S3S4Sta5S6Ta7mor_Tasgius_morsitans_Staph.idba.32	XXXXXXXXXXXX	CP1S3S4Sta5S6Ta7mor_Tasgius_morsitans_Staph.idba.32_MERGED
-XX-----	CP1S3S4Sta5X6Gy7fra	XXXXXXXXXXXX	CP1S3S4Sta5X6Gy7fra_Gyrohypnus_fracticornis_Staph.idba.29	XXXXXXXXXXXX	CP1S3S4Sta5X6Gy7fra_Gyrohypnus_fracticornis_Staph.idba.29_MERGED
-XX-----XX-	CP1S3S4Sta5X6Nu7len	XXXXXX	CP1S3S4Sta5X6Nu7len_Nudobius_lentus_Staph.idba.72	XXXXXX	CP1S3S4Sta5X6Nu7len_Nudobius_lentus_Staph.idba.72_MERGED
-X-----	CP1S3S4T5Bo7cas	XXXXXXXXXXXX	CP1S3S4T5Bo7cas_Bolitobius_castaneus_BIUK.idba.14	XXXXXXXXXXXX	CP1S3S4T5Bo7cas_Bolitobius_castaneus_BIUK.idba.14_MERGED
-X-----	CP1S3S4T5Lo7exo	XXXXXXXXXXXX	CP1S3S4T5Lo7exo_Lordithon_exoletus_amei.idba.7	XXXXXXXXXXXX	CP1S3S4T5Lo7exo_Lordithon_exoletus_amei.idba.7_MERGED
-X-----XX-	CP1S3S4T5Se7bip	XXXXXXXXXXXX	CP1S3S4T5Se7bip_Sepedophilus_bipunctatus_Staph.idba.23	XXXXXXXXXXXX	CP1S3S4T5Se7bip_Sepedophilus_bipunctatus_Staph.idba.23_MERGED
-XX-----	CP1S3S4T5Ta7chr	XXXXXXXXXXXX	CP1S3S4T5Ta7chr_Tachyporus_chrysomelinus_Soil.idba.10	XXXXXXXXXXXX	CP1S3S4T5Ta7chr_Tachyporus_chrysomelinus_Soil.idba.10_MERGED
-X-----	CP1S3S4T5Tac7lat	XXXXXXXXXXXX	CP1S3S4T5Tac7lat_Tachinus_laticollis_BIUK.idba.8	XXXXXXXXXXXX	CP1S3S4T5Tac7lat_Tachinus_laticollis_BIUK.idba.8_MERGED
-XX-----	CP1S3S4T5Tac7sub	XXXXXXXXXXXX	CP1S3S4T5Tac7sub_Tachinus_subterraneus_amei.idba.1	XXXXXXXXXXXX	CP1S3S4T5Tac7sub_Tachinus_subterraneus_amei.idba.1_MERGED
-XX-----XX-	CP1S3Sc4Ce7gal	XXXXXX	CP1S3Sc4Ce7gal_Cephennium_gallicum_BIUK.idba.66	XXXXXX	CP1S3Sc4Ce7gal_Cephennium_gallicum_BIUK.idba.66_MERGED
XXXXXXXXXXXX--X	CP1S3S14S5Ne7ame	XXXXXXXXXXXX	CP1S3S14S5Ne7ame_Necrophila_americae_NC_018352	XXXXXXXXXXXX	CP1S3S14S5Ne7ame_Necrophila_americae_NC_018352_MERGED
-X-----	CP1S3S14S5Si7tyr	XXXXXXXXXXXX	CP1S3S14S5Si7tyr_Silpha_tyrolensis_amei.idba.102	XXXXXXXXXXXX	CP1S3S14S5Si7tyr_Silpha_tyrolensis_amei.idba.102_MERGED
-XX-----XX-XX-	CP1Sc3Ge4An7ste	--XXXXXXXX--	CP1Sc3Ge4An7ste_Anoplotrupes_stercorosus_JX412838	--XXXXXXXX--	CP1Sc3Ge4An7ste_Anoplotrupes_stercorosus_JX412838_MERGED
-XX-----XX-	CP1Sc3L4Lu5Do7par	XXXXXX	CP1Sc3L4Lu5Do7par_Dorcus_parallepipedus_2VGB.idba.16	XXXXXX	CP1Sc3L4Lu5Do7par_Dorcus_parallepipedus_2VGB.idba.16_MERGED
-XX-----	CP1Sc3L4Lu5Lu7cer	XXXXXXXXXXXX	CP1Sc3L4Lu5Lu7cer_Lucanus_cervus_2VGB.idba.13	XXXXXXXXXXXX	CP1Sc3L4Lu5Lu7cer_Lucanus_cervus_2VGB.idba.13_MERGED
XXXXXXXXXXXX--X	CP1Sc3L4Lu5Lu7maz	XXXXXXXXXXXX	CP1Sc3L4Lu5Lu7maz_Lucanus_mazama_NC_013578	XXXXXXXXXXXX	CP1Sc3L4Lu5Lu7maz_Lucanus_mazama_NC_013578_MERGED
-X-----X---X	CP1Sc3L4S5Ce7chr	XXXXXXXXXXXX	CP1Sc3L4S5Ce7chr_Ceruchus_chrysomelinus_amei.idba.108	XXXXXXXXXXXX	CP1Sc3L4S5Ce7chr_Ceruchus_chrysomelinus_amei.idba.108_MERGED
--XX-----	CP1Sc3S4A5Ap7ele	XXXXXXXXXXXX	CP1Sc3S4A5Ap7ele_Aphodius_elevatus_Soil.idba.32	XXXXXXXXXXXX	CP1Sc3S4A5Ap7ele_Aphodius_elevatus_Soil.idba.32_MERGED
-XX-----	CP1Sc3S4A5Ap7foe	-----XXXX--	CP1Sc3S4A5Ap7foe_Aphodius_foetens_amei.idba.115	-XX-XXXXXX-	CP1Sc3S4A5Ap7foe_Aphodius_foetens_amei.idba.115_MERGED
-XX-----	CP1Sc3S4A5Ap7mer	XXXXXXXXXXXX	CP1Sc3S4A5Ap7mer_Aphodius_merdarius_Soil.idba.93	XXXXXXXXXXXX	CP1Sc3S4A5Ap7mer_Aphodius_merdarius_Soil.idba.93_MERGED
-XX-----X---XXX	CP1Sc3S4A5Ox7syl	XXXXXXXXXXXX	CP1Sc3S4A5Ox7syl_Oxyomus_sylvestris_amei.idba.121	XXXXXXXXXXXX	CP1Sc3S4A5Ox7syl_Oxyomus_sylvestris_amei.idba.121_MERGED
-XX-----X	CP1Sc3S4A5Ple7cae	XXXXXXXXXXXX	CP1Sc3S4A5Ple7cae_Pleurophorus_caesus_Soil.idba.33	XXXXXXXXXXXX	CP1Sc3S4A5Ple7cae_Pleurophorus_caesus_Soil.idba.33_MERGED
-X-----XX---X	CP1Sc3S4D5Cyp7val	XXXXXXXXXXXX	CP1Sc3S4D5Cyp7val_Cyphonistes_vallatus_JX412731	XXXXXXXXXXXX	CP1Sc3S4D5Cyp7val_Cyphonistes_vallatus_JX412731_MERGED
XXXXXXXXXX-X-X-X	CP1Sc3S4M5Chei7jan	XXXXXXXXXXXX	CP1Sc3S4M5Chei7jan_Cheirotonus_jansoni_NC_023246	XXXXXXXXXXXX	CP1Sc3S4M5Chei7jan_Cheirotonus_jansoni_NC_023246_MERGED
-XX-----	CP1Sc3S4M5Me7hip	XXXXXXXXXXXX	CP1Sc3S4M5Me7hip_Melolontha_hippocastani_amei.idba.79	XXXXXXXXXXXX	CP1Sc3S4M5Me7hip_Melolontha_hippocastani_amei.idba.79_MERGED
XXXXXXXXXXXX--X	CP1Sc3S4M5Rh7mag	XXXXXXXXXXXX	CP1Sc3S4M5Rh7mag_Rhopaea_magnicornis_NC_013252	XXXXXXXXXXXX	CP1Sc3S4M5Rh7mag_Rhopaea_magnicornis_NC_013252_MERGED
-XX-----XX-XXX	CP1Sc3S4R5Ph7hor	--XXXX--	CP1Sc3S4R5Ph7hor_Phyllopertha_horticola_amei.idba.189	XXXXXX--XX-XXX	CP1Sc3S4R5Ph7hor_Phyllopertha_horticola_amei.idba.189_MERGED
-XX-----X---X	CP1Sc3S4S5Bu7bis	XXXXXXXXXXXX	CP1Sc3S4S5Bu7bis_Bubas_bison_CS.idba.2	XXXXXXXXXXXX	CP1Sc3S4S5Bu7bis_Bubas_bison_CS.idba.2_MERGED
--XX-----X---X	CP1Sc3S4S5Bu7bub	XXXXXXXXXXXX	CP1Sc3S4S5Bu7bub_Bubas_bubalus_CS.idba.14	XXXXXXXXXXXX	CP1Sc3S4S5Bu7bub_Bubas_bubalus_CS.idba.14_MERGED
-----X-----	CP1Sc3S4S5C6Ca7aeq	XXXXXX	CP1Sc3S4S5C6Ca7aeq_Canthon_aequinoctialis_Panama.idba.243	XXXXXX	CP1Sc3S4S5C6Ca7aeq_Canthon_aequinoctialis_Panama.idba.243_MERGED
-X-----X---XXX	CP1Sc3S4S5Ca7bin	XXXXXXXXXXXX	CP1Sc3S4S5Ca7bin_Caccobius_binodulus_CS.idba.46	XXXXXXXXXXXX	CP1Sc3S4S5Ca7bin_Caccobius_binodulus_CS.idba.46_MERGED
-X-----X---X	CP1Sc3S4S5Ca7nig	XXXXXXXXXXXX	CP1Sc3S4S5Ca7nig_Caccobius_nigriritulus_CS.idba.25	XXXXXXXXXXXX	CP1Sc3S4S5Ca7nig_Caccobius_nigriritulus_CS.idba.25_MERGED
-X-----X---XXX	CP1Sc3S4S5Cl7con	XXXXXX	CP1Sc3S4S5Cl7con_Cleptocaccobius_convexifrons_CS.idba.80	XXXXXX	CP1Sc3S4S5Cl7con_Cleptocaccobius_convexifrons_CS.idba.80_MERGED
-----X---XXX	CP1Sc3S4S5Dig7dia	XXXXXXXXXXXX	CP1Sc3S4S5Dig7dia_Onthophagus_diabolicus_Scarab.idba.18	XXXXXXXXXXXX	CP1Sc3S4S5Dig7dia_Onthophagus_diabolicus_Scarab.idba.18_MERGED
-XXX-----X-XX---X	CP1Sc3S4S5Dig7gaz	XXXXXXXXXXXX	CP1Sc3S4S5Dig7gaz_Digitonthophagus_gazella_Scarab.idba.8	XXXXXXXXXXXX	CP1Sc3S4S5Dig7gaz_Digitonthophagus_gazella_Scarab.idba.8_MERGED
-X-----X---X	CP1Sc3S4S5Dr7kir	XXXXXXXXXXXX	CP1Sc3S4S5Dr7kir_Drepanocerus_kirbyi_CS.idba.15	XXXXXXXXXXXX	CP1Sc3S4S5Dr7kir_Drepanocerus_kirbyi_CS.idba.15_MERGED

--X-----X----	CP1Sc3S4S5Eu6Eu7car	XXXXXXXXXXXXX----	CP1Sc3S4S5Eu6Eu7car_Cheironitis_hoplosternus_Scarab.idba.15	XXXXXXXXXXXXX----	CP1Sc3S4S5Eu6Eu7car_Cheironitis_hoplosternus_Scarab.idba.15_MERGED
--X-----X----	CP1Sc3S4S5Eu6Eu7foe	XXXXXXXXXXXXX----	CP1Sc3S4S5Eu6Eu7foe_Eurysternus_foedus_Scarab.idba.1	XXXXXXXXXXXXX----	CP1Sc3S4S5Eu6Eu7foe_Eurysternus_foedus_Scarab.idba.1_MERGED
--X-----X----	CP1Sc3S4S5Eu6Eu7ham	XXXXXXXXXXXXX----	CP1Sc3S4S5Eu6Eu7ham_Eurysternus_hamaticollis_CS.idba.53	XXXXXXXXXXXXX----	CP1Sc3S4S5Eu6Eu7ham_Eurysternus_hamaticollis_CS.idba.53_MERGED
--X-----X----	CP1Sc3S4S5Eu6Eu7inf	XXXXXXXXXXXXX----	CP1Sc3S4S5Eu6Eu7inf_Eurysternus_inflexus_CS.idba.17	XXXXXXXXXXXXX----	CP1Sc3S4S5Eu6Eu7inf_Eurysternus_inflexus_CS.idba.17_MERGED
-XX-----X----	CP1Sc3S4S5Eu7ful	XXXXXXXXXXXXX----	CP1Sc3S4S5Eu7ful_Euoniticellus_fulvus_Scarab.idba.0	XXXXXXXXXXXXX-XX	CP1Sc3S4S5Eu7ful_Euoniticellus_fulvus_Scarab.idba.0_MERGED
-XX-----X----	CP1Sc3S4S5Eu7int	XXXXXXXXXXXXX----	CP1Sc3S4S5Eu7int_Euoniticellus_intermedius_CS.idba.5	XXXXXXXXXXXXX-XX	CP1Sc3S4S5Eu7int_Euoniticellus_intermedius_CS.idba.5_MERGED
--X-----X----	CP1Sc3S4S5Euon7car	-XXXXXXXXXXXXX----	CP1Sc3S4S5Euon7car_Onthophagus_carbonarius_Scarab.idba.19	-XXXXXXXXXXXXX-XX	CP1Sc3S4S5Euon7car_Onthophagus_carbonarius_Scarab.idba.19_MERGED
--X-----X-XX-XXX	CP1Sc3S4S5Hel7qua	XXXX-----	CP1Sc3S4S5Hel7qua_Helictopleurus_quadripunctatus_CS.idba.79	XXXX-----X-XX-XXX	CP1Sc3S4S5Hel7qua_Helictopleurus_quadripunctatus_CS.idba.79_MERGED
--X-----X-XXX	CP1Sc3S4S5Het7cas	XXXXXXXXXXXXX----	CP1Sc3S4S5Het7cas_Heteronitis_castelnaui_CS.idba.56	XXXXXXXXXXXXX-XXX	CP1Sc3S4S5Het7cas_Heteronitis_castelnaui_CS.idba.56_MERGED
--X-----X-XXX	CP1Sc3S4S5Hy7alc	XXXXXXXXXXXXX----	CP1Sc3S4S5Hy7alc_Hyalonthophagus_alcyon_CS.idba.42	XXXXXXXXXXXXX-XXX	CP1Sc3S4S5Hy7alc_Hyalonthophagus_alcyon_CS.idba.42_MERGED
--X-----X-XXX	CP1Sc3S4S5Li7mil	--XXXXXXXX----	CP1Sc3S4S5Li7mil_Liatongus_militaris_Scarab.idba.22	--XXXXXXXX-X----	CP1Sc3S4S5Li7mil_Liatongus_militaris_Scarab.idba.22_MERGED
--X-----X-XXX	CP1Sc3S4S5Mi7api	XXXXXXXXXXXXX----	CP1Sc3S4S5Mi7api_Millichus_apicalis_CS.idba.13	XXXXXXXXXXXXX-XXX	CP1Sc3S4S5Mi7api_Millichus_apicalis_CS.idba.13_MERGED
--X-----X-XXX	CP1Sc3S4S5On7ale	XXXXXXXXXXXXX----	CP1Sc3S4S5On7ale_Onitis_alexis_CS.idba.60	XXXXXXXXXXXXX-XXX	CP1Sc3S4S5On7ale_Onitis_alexis_CS.idba.60_MERGED
--X-----X-XXX	CP1Sc3S4S5On7caf	XXXXXXXXXXXXX----	CP1Sc3S4S5On7caf_Onitis_caffer_CS.idba.6	XXXXXXXXXXXXX-XX	CP1Sc3S4S5On7caf_Onitis_caffer_CS.idba.6_MERGED
--X-----X-XXX	CP1Sc3S4S5On7fal	XXXXXXXXXXXXX----	CP1Sc3S4S5On7fal_Onitis_falcatu CS.idba.22	XXXXXXXXXXXXX-XXX	CP1Sc3S4S5On7fal_Onitis_falcatu CS.idba.22_MERGED
-XX-----X-XXX	CP1Sc3S4S5On7ful	-----XXXXXXXX	CP1Sc3S4S5On7ful_Onitis_fulgidus_CS.idba.62	-----XXXXXXXX-XXX	CP1Sc3S4S5On7ful_Onitis_fulgidus_CS.idba.62_MERGED
--X-----X-XXX	CP1Sc3S4S5On7egr	XXXXXXXXXXXXX----	CP1Sc3S4S5On7egr_Onitice llus_egregius_CS.idba.9	XXXXXXXXXXXXX-XX	CP1Sc3S4S5On7egr_Onitice llus_egregius_CS.idba.9_MERGED
--X-----X-XXX	CP1Sc3S4S5On7bid	-----XXXXXX	CP1Sc3S4S5On7bid_Onthophagus_bidentatus_CS.idba.77	--X-----XXXXX----	CP1Sc3S4S5On7bid_Onthophagus_bidentatus_CS.idba.77_MERGED
-XX-----XX----	CP1Sc3S4S5On7cly	XXXXXXXXXXXXX----	CP1Sc3S4S5On7cly_Onthophagus_clypeatus_CS.idba.50	XXXXXXXXXXXXX-XX	CP1Sc3S4S5On7cly_Onthophagus_clypeatus_CS.idba.50_MERGED
-XX-----XX----	CP1Sc3S4S5On7coe	XXXXXXXXXXXXX----	CP1Sc3S4S5On7coe_Onthophagus_coenobita_CS.idba.24	XXXXXXXXXXXXX-XX	CP1Sc3S4S5On7coe_Onthophagus_coenobita_CS.idba.24_MERGED
-X-----X----	CP1Sc3S4S5On7fim	XXXXXXXXXXXXX----	CP1Sc3S4S5On7fim_Onthophagus_fimetarius_Scarab.idba.6	XXXXXXXXXXXXX-XX	CP1Sc3S4S5On7fim_Onthophagus_fimetarius_Scarab.idba.6_MERGED
-X-----X----	CP1Sc3S4S5On7gra	XXXXXXXXXXXXX----	CP1Sc3S4S5On7gra_Onthophagus_gracillipes_Scarab.idba.3	XXXXXXXXXXXXX-XX	CP1Sc3S4S5On7gra_Onthophagus_gracillipes_Scarab.idba.3_MERGED
-XX-----XX----	CP1Sc3S4S5On7hae	XXXXXXXXXXXXX----	CP1Sc3S4S5On7hae_Onthophagus_haematopus_CS.idba.41	XXXXXXXXXXXXX-XX	CP1Sc3S4S5On7hae_Onthophagus_haematopus_CS.idba.41_MERGED
--XX-----	CP1Sc3S4S5On7lat	-XXXXXXXXXXXXX----	CP1Sc3S4S5On7lat_Onthophagus_laticollis_Scarab.idba.13	-XXXXXXXXXXXXX----	CP1Sc3S4S5On7lat_Onthophagus_laticollis_Scarab.idba.13_MERGED
--X-----X----	CP1Sc3S4S5On7lon	XXXXXXXXXXXXX----	CP1Sc3S4S5On7lon_Onthophagus_longimanus_CS.idba.23	XXXXXXXXXXXXX-XX	CP1Sc3S4S5On7lon_Onthophagus_longimanus_CS.idba.23_MERGED
--X-----X----	CP1Sc3S4S5On7nit	-XXXXXXXXXXXXX----	CP1Sc3S4S5On7nit_Onthophagus_nitidior_CS.idba.10	-XXXXXXXXXXXXX----	CP1Sc3S4S5On7nit_Onthophagus_nitidior_CS.idba.10_MERGED
--X-----X----	CP1Sc3S4S5On7obs	XXXXXXXXXXXXX----	CP1Sc3S4S5On7obs_Onthophagus_obscurior_CS.idba.31	XXXXXXXXXXXXX-XX	CP1Sc3S4S5On7obs_Onthophagus_obscurior_CS.idba.31_MERGED
-XX-----X----	CP1Sc3S4S5On7och	-----XXXXXX	CP1Sc3S4S5On7och_Onthophagus_ochreatus_Scarab.idba.30	-----XXXXX----	CP1Sc3S4S5On7och_Onthophagus_ochreatus_Scarab.idba.30_MERGED
--X-----X----	CP1Sc3S4S5On7rhi	XXXXXXXXXXXXX----	CP1Sc3S4S5On7rhi_Onthophagus_rhinolophus_Scarab.idba.2	XXXXXXXXXXXXX-XX	CP1Sc3S4S5On7rhi_Onthophagus_rhinolophus_Scarab.idba.2_MERGED
-X-----X----	CP1Sc3S4S5On7ror	XXXXXXXXXXXXX----	CP1Sc3S4S5On7ror_Onthophagus_rorarius_CS.idba.1	XXXXXXXXXXXXX-XX	CP1Sc3S4S5On7ror_Onthophagus_rorarius_CS.idba.1_MERGED
--X-----X----	CP1Sc3S4S5On7sem	XXXXXXXXXXXXX----	CP1Sc3S4S5On7sem_Onthophagus_semiareus_CS.idba.51	XXXXXXXXXXXXX-XX	CP1Sc3S4S5On7sem_Onthophagus_semiareus_CS.idba.51_MERGED
-XX-----X-XX-	CP1Sc3S4S5On7sim	XXXXXXXXXXXXX----	CP1Sc3S4S5On7sim_Onthophagus_similis_CS.idba.37	XXXXXXXXXXXXX-XX	CP1Sc3S4S5On7sim_Onthophagus_similis_CS.idba.37_MERGED
-XX-----X----	CP1Sc3S4S5On7vac	-XXXXXXXXXXXXX----	CP1Sc3S4S5On7vac_Onthophagus_vacca_CS.idba.55	-XXXXXXXXXXXXX----	CP1Sc3S4S5On7vac_Onthophagus_vacca_CS.idba.55_MERGED
--X-----X----	CP1Sc3S4S5On7vul	-----XXXXXXXX	CP1Sc3S4S5On7vul_Onthophagus_vulpes_CS.idba.70	--X-----XXXXXX----	CP1Sc3S4S5On7vul_Onthophagus_vulpes_CS.idba.70_MERGED
--X-----X-XXX	CP1Sc3S4S5Ph7ard	XXXXXXXXXXXXX----	CP1Sc3S4S5Ph7ard_Phalops_ardea_CS.idba.8	XXXXXXXXXXXXX-XX	CP1Sc3S4S5Ph7ard_Phalops_ardea_CS.idba.8_MERGED
--X-----X-XXX	CP1Sc3S4S5Pr7bic	XXXXXXXXXXXXX----	CP1Sc3S4S5Pr7bic_Proagoderus_bicallosus_CS.idba.3	XXXXXXXXXXXXX-XXX	CP1Sc3S4S5Pr7bic_Proagoderus_bicallosus_CS.idba.3_MERGED
--X-----X-XXX	CP1Sc3S4S5Pr7sch	XXXXXXXXXXXXX----	CP1Sc3S4S5Pr7sch_Proagoderus_schwani CS.idba.12	XXXXXXXXXXXXX-XX	CP1Sc3S4S5Pr7sch_Proagoderus_schwani CS.idba.12_MERGED
-X-----X-XXX	CP1Sc3S4S5Ti7sar	XXXXXXXXXXXXX----	CP1Sc3S4S5Ti7sar_Tiniocellus_sarawacus_CS.idba.21	XXXXXXXXXXXXX-XXX	CP1Sc3S4S5Ti7sar_Tiniocellus_sarawacus_CS.idba.21_MERGED
--X-----X-XXX	CP1Sc3S4S5Tra7dim	XXXXXXXXXXXXX----	CP1Sc3S4S5Tra7dim_Tragiscus_dimidiatus_Scarab.idba.4	XXXXXXXXXXXXX-XX	CP1Sc3S4S5Tra7dim_Tragiscus_dimidiatus_Scarab.idba.4_MERGED
-XX-----XX----	CP1Sc3S4T5Gn7var	XXXXXXXXXXXXX----	CP1Sc3S4T5Gn7var_Gnorimus_variabilis_ame. idba.13	XXXXXXXXXXXXX-XX	CP1Sc3S4T5Gn7var_Gnorimus_variabilis_ame. idba.13_MERGED
-XX-----X-XXX	CP1Sc3E4Eu7hae	XXXXXXXXXXXXX----	CP1Sci3E4Eu7hae_Eucinetus_haemorrhoidolis_842710_idba_contig_14	XXXXXXXXXXXXX-XXX	CP1Sc3E4Eu7hae_Eucinetus_haemorrhoidolis_842710_idba_contig_14_MERGED
-XX-----X----	CP1Sci3S4E17min	XXXXXXXXXXXXX----	CP1Sci3S4E17min_Elodes_minuta_ame. idba.24	XXXXXXXXXXXXX----	CP1Sci3S4E17min_Elodes_minuta_ame. idba.24_MERGED
-X-----X----	CP1Sci3S4Sc7orb	XXXXXXXXXXXXX----	CP1Sci3S4Sc7orb_Scirtes_orbicularis_ame. idba.100	XXXXXXXXXXXXX----	CP1Sci3S4Sc7orb_Scirtes_orbicularis_ame. idba.100_MERGED
-XX-----	CP1T3An40m7f1o	--XXXXXXXXXXXX	CP1T3An40m7f1o_Omonadus_floralis_HQ232825	-XXXXXXXXXXXX----	CP1T3An40m7f1o_Omonadus_floralis_HQ232825_MERGED
-XX-----	CP1T3An4St7tob	XXXXXXXXXXXXX----	CP1T3An4St7tob_Stricticomus_tobias_ame. idba.57	XXXXXXXXXXXXX----	CP1T3An4St7tob_Stricticomus_tobias_ame. idba.57_MERGED
-XX-----X-XXX	CP1T3B4Bo7sch	XXXXX-----	CP1T3B4Bo7sch_Boros_schneideri_ame. idba.177	XXXXX-----X-XXX	CP1T3B4Bo7sch_Boros_schneideri_ame. idba.177_MERGED
-X-----X----	CP1T3C4C5C17mic	XXXXXXXXXXXXX----	CP1T3C4C5C17mic_Cis_micans_ame. idba.118	XXXXXXXXXXXXX----	CP1T3C4C5C17mic_Cis_micans_ame. idba.118_MERGED
-XX-----XX-XXX	CP1T3C4C5O7r7pyg	--XXXXXX-----	CP1T3C4C5O7r7pyg_Orthocis_pygmaeus_ame. idba.147	-XXXXXX--XX-XXX	CP1T3C4C5O7r7pyg_Orthocis_pygmaeus_ame. idba.147_MERGED
-X-----X-XXX	CP1T3Me4Mik7gra	--XXXXXXXXXXXX	CP1T3Me4Mik7gra_Mikadonius_gracilis_JX412823	-XXXXXXXXXXXX-XXX	CP1T3Me4Mik7gra_Mikadonius_gracilis_JX412823_MERGED
-X-----X----	CP1T3Me4Os7bip	--XXXXXXXXXXXX	CP1T3Me4Os7bip_Osypa_bipunctata_JX313675	-X-XXXXXXXXXXXX----	CP1T3Me4Os7bip_Osypa_bipunctata_JX313675_MERGED
XXXXXXXXXXXXX----	CP1T3Mo4Mo7atr	XXXXXXXXXXXXX----	CP1T3Mo4Mo7atr_Mordella atrata_NC_013254	XXXXXXXXXXXXX----	CP1T3Mo4Mo7atr_Mordella atrata_NC_013254_MERGED
-X-----X----	CP1T3Mo4Morde7mil	XXXXXXXXXXXXX----	CP1T3Mo4Morde7mil_Mordellochroa_millieri_ame. idba.36	XXXXXXXXXXXXX----	CP1T3Mo4Morde7mil_Mordellochroa_millieri_ame. idba.36_MERGED
-XX-----XX----	CP1T3Mo4To7buc	XXXXXXXXXXXXX----	CP1T3Mo4To7buc_Tomoxia_bucephala_ame. idba.63	XXXXXXXXXXXXX-XX	CP1T3Mo4To7buc_Tomoxia_bucephala_ame. idba.63_MERGED
-XX-----X-XXX	CP1T3My4My7qua	--XXXXXXXXXXXX	CP1T3My4My7qua_Mycetophagus_quadripustulatus_HQ232824	-XXXXXXXXXXXX-XXX	CP1T3My4My7qua_Mycetophagus_quadripustulatus_HQ232824_MERGED
-X-----X----	CP1T3O4I7s7cae	XXXXXXXXXXXXX----	CP1T3O4I7s7cae_Iscnomera caerulea_JX412790	XXXXXXXXXXXXX-XX	CP1T3O4I7s7cae_Iscnomera caerulea_JX412790_MERGED

-XX-----	CP1T304Is7cya	XXXXXXXXXXXXX----	CP1T304Is7cya_Ischnomera_cyanea_BIUK.idba.38	XXXXXXXXXXXXX----	CP1T304Is7cya_Ischnomera_cyanea_BIUK.idba.38_MERGED
-XX-----XXX	CP1T3040e7vir	--XXXXXXXXXXXXX----	CP1T3040e7vir_Oedemera_virescens_HQ232826	-XXXXXXXXXXXXX----	CP1T3040e7vir_Oedemera_virescens_HQ232826_MERGED
-X-----	CP1T3P4Sc7pec	XXXXXXXXXXXXX----	CP1T3P4Sc7pec_Schizotus_pectinicornis_ameie.idba.83	XXXXXXXXXXXXX----	CP1T3P4Sc7pec_Schizotus_pectinicornis_ameie.idba.83_MERGED
--X-----XX--XXX	CP1T3R4Pe7fen	XXXXXXXXXXXXX----	CP1T3R4Pe7fen_Pelecotoma_fennica_842676_idba_contig_23	XXXXXXXXXXXXX----	CP1T3R4Pe7fen_Pelecotoma_fennica_842676_idba_contig_23_MERGED
-X-----	CP1T3Sa4Li7cur	XXXXXXXXXXXXX----	CP1T3Sa4Li7cur_Lissodema_cursor_ameie.idba.80	XXXXXXXXXXXXX----	CP1T3Sa4Li7cur_Lissodema_cursor_ameie.idba.80_MERGED
--X-----XX--XXX	CP1T3Sa4Rh7ruf	XXXXXXXXXXXXX----	CP1T3Sa4Rh7ruf_Rhinosimus_ruficollis_BIUK.idba.39	XXXXXXXXXXXXX----	CP1T3Sa4Rh7ruf_Rhinosimus_ruficollis_BIUK.idba.39_MERGED
-X-----	CP1T3Sa4Sa7aen	-----XXXXX----	CP1T3Sa4Sa7aen_Salpingus_aeneus_JX313680	-X-----XXXXX----	CP1T3Sa4Sa7aen_Salpingus_aeneus_JX313680_MERGED
-XX-----XXX	CP1T3Sa4Vi7ruf	XXXXXXXXXXXXX----	CP1T3Sa4Vi7ruf_Vincenzellus_ruficollis_833403_Salpingidae_Vincenzellus	XXXXXXXXXXXXX----	CP1T3Sa4Vi7ruf_Vincenzellus_ruficollis_833403_Salpingidae_Vincenzellus_MERGED
-XX-----XX--XXX	CP1T3Sc5An7mac	XXXXXXXXXXXXX----	CP1T3Sc5An7mac_Anasps_maculata_BIUK.idba.33	XXXXXXXXXXXXX----	CP1T3Sc5An7mac_Anasps_maculata_BIUK.idba.33_MERGED
-X-----	CP1T3Sc5Cy7pha	XXXXXXXXXXXXX----	CP1T3Sc5Cy7pha_Cyrtanasps_phalerata_ameie.idba.38	XXXXXXXXXXXXX----	CP1T3Sc5Cy7pha_Cyrtanasps_phalerata_ameie.idba.38_MERGED
-X-----	CP1T3T4D5Sc7met	XXXXXXXXXXXXX----	CP1T3T4D5Sc7met_Scaphidema_metallicum_ameie.idba.104	XXXXXXXXXXXXX----	CP1T3T4D5Sc7met_Scaphidema_metallicum_ameie.idba.104_MERGED
XXXX-XXX-X-XXX----	CP1T3T4D5U17der	XXXXXXXXXXXXX----	CP1T3T4D5U17der_Ulomoides_dermestoides_NC_025332	XXXXXXXXXXXXX----	CP1T3T4D5U17der_Ulomoides_dermestoides_NC_025332_MERGED
-XX-----	CP1T3T4T5Na7lae	XXXXXXXXXXXXX----	CP1T3T4T5Na7lae_Nalassus_laevioctostriatus_2VGB.idba.14	XXXXXXXXXXXXX----	CP1T3T4T5Na7lae_Nalassus_laevioctostriatus_2VGB.idba.14_MERGED
-----X--X-X--	CP1T3T4T5Sca7unc	XXXXXXX-XXXXX----	CP1T3T4T5Sca7unc_Scaurus_uncinus_Soil.idba.92	XXXXXXX-XXXXX-X-	CP1T3T4T5Sca7unc_Scaurus_uncinus_Soil.idba.92_MERGED
XXXXXXXXX-X-XXX-XXX	CP1T3T4T5Te7mol	XXXXXXXXXXXXX----	CP1T3T4T5Te7mol_Tenebrio_molitor_NC_024633	XXXXXXXXXXXXX----	CP1T3T4T5Te7mol_Tenebrio_molitor_NC_024633_MERGED
XXXXXXXXXX-XXX----	CP1T3T4Tr7aud	XXXXXXXXXXXXX----	CP1T3T4Tr7aud_Tribolium_audax_NC_024600	XXXXXXXXXXXXX----	CP1T3T4Tr7aud_Tribolium_audax_NC_024600_MERGED
-XX-----XX--XXX	CP1T3Te4T5Te7fun	XXXXXXXXXXXXX----	CP1T3Te4T5Te7fun_Tetratoma_fungorum_ameie.idba.12	XXXXXXXXXXXXX----	CP1T3Te4T5Te7fun_Tetratoma_fungorum_ameie.idba.12_MERGED
--X-----XX--XXX	CP1T3Z4Z5U6Us7lac	XXXXXXXXXXXXX----	CP1T3Z4Z5U6Us7lac_Usechus_lacerta_679350_idba_contig_8	XXXXXXXXXXXXX----	CP1T3Z4Z5U6Us7lac_Usechus_lacerta_679350_idba_contig_8_MERGED

## Manual correction of erroneous sequences

This list summarizes the manual corrections done for the tree of Figure 3 (and the complete tree below). These correspond to NCBI terminals whose taxonomic identification (their NCBI taxonomic id) appears erroneous in light of their phylogenetic placement.

### \*\*\*NCBI terminals with probable erroneous taxonomic identifications\*\*\*

- CP1Cur3C4M5M6Li7cor
- CP1Cu3Lat4Ak7sle
- CP1S3S4Ps5Ba7del
- CP1Hi3H4S5Gn7com
- CP1Cu3N4Am7C27
- CP1Bo3D4Tro7MC2010
- CP1Cur3C4Ma5Ma7cer
- CP1Ch3Ce4D5Cy7asa
- CP1Cur3C4M5Ph6Cr7pun
- CP1S3Si4S5De7qua
- CP1Cu3N4Cy5Cy7MJM2013

### \*\*\* minor errors detected in Genbank \*\*\*\*

- CP1S3S4Ox5Ox7\_Oxytelus\_sp\_JX412796 (should use *Anotylus rugatilis*)
- CP1S3S4O5Ne7TJH2005 is same species as  
CP1S3S4O5Ne7bru\_Neophonus\_bruchi\_Staph.idba.0\_MERGED

## NCBI extraction and Blast threshold

The following table reports the number of mitochondrial loci extracted from the NCBI at different blast Evalue thresholds. A value of 1E-5 was retained and is the baseline used for the differences reported below:

Locus	#sequence at 1E-5	Variation at different Blast thresholds					
		1E-12	1E-09	1E-05 (baseline)	1E-03	1E+00	1E+01
<i>12S</i>	4105	-5	-1	0	0	+5	+19
<i>16Sa</i>	14723	-4	0	0	0	+33	+49
<i>16Sb</i>	13487	-13	0	0	0	+54	+96
<i>ATP6</i>	292	-1	0	0	0	+7	+51
<i>cox3</i>	448	0	0	0	0	0	+4
<i>cox2</i>	7363	-1	0	0	0	+44	+148
<i>cox1seg1</i>	46546	-8	0	0	0	+7	+11
<i>cox1seg2</i>	46009	-1	0	0	0	+1	+64
<i>cytb</i>	5370	-6	0	0	0	+0	+1
<i>ef1a</i>	3153	-9	-3	0	+3	+3	+3
<i>nad1</i>	360	0	0	0	0	+6	+63
<i>nad2</i>	612	-2	-2	0	0	+28	+87
<i>nad3</i>	287	-1	0	0	0	+6	+30
<i>nad4</i>	290	0	0	0	0	+15	+35
<i>nad5</i>	1800	0	0	0	0	+9	+105
<i>nad6</i>	191	-29	-19	0	+14	+30	+76

We ran the blast extraction at different Blast evalue thresholds and observed the variation in the number of sequences extracted. When changing the blast Evalue threshold between 1e-12 and 1e-3, there is almost no change in the number of extracted sequences. This indicates that the criteria used in the pipeline are efficient in extracting all loci from the Genbank Coleopteran data (evalue<1e-5, word size =12, align\_length>=60% of the expected locus length). The only notable exception is the locus nad6, for which the number of extracted sequences is more dependant to the used threshold. After observing in detail, the new sequences extracted at higher Evalue thresholds, we observed that the corresponding Blast alignments were very short (dozens of bases) and were mainly disturbed by the second half of this gene, which contains a large portion of AT-rich segments. AT-rich segments are typically producing lower Evalues, because they are abundant in reference databases and the probability to have detected homology by chance and not because of a real signal (the meaning of the EValue), is higher. This mean that in the future, the Evalue value threshold should be raised for this Locus, or that better bait sequences should be used. Finally, for several loci, dozens of new sequences are extracted when very weak (and generally not recommended) thresholds of 0.1 or 1 are chosen. This is particularly true for *cox2* and some *nad* genes. These numbers should however be taken with caution. In fact, several of the new sequences are erroneous hits due to the sequence patterns shared by the different mitochondrial genes (similar regions between the different *nad* gene).

## Likelihood of the 20 tree searches based on the NCBI+MMG min3loci 1RY\_3Del matrix

We launched 20 searches based on the NCBI+MMG min3loci 1RY\_3Del matrix, the best tree (see below, seed = 12000) was used as starting tree for the search based on the NCBI+MMG min2loci 1RY\_3Del matrix (topology unconstrained). RAxML command:

```
raxmlHPC-PTHREADS -T 12 -n result_min3loci_smv5.1_seed12000 -s infile.txt -q partitions.txt -p 12000 -k -c 25 -m GTRCAT
```

RAxML seed (-p)	Gamma-based Likelihood	GAMMA-based Score of best tree	time (hours)	diff to best.
1000	-11450706.323166	-11450306.278547	118.416336	-436.6692709997
2000	-11451121.951837	-11450571.131743	99.527583	-701.5224670004
3000	-11450905.917378	-11450424.776289	117.397756	-555.1670129988
4000	-11450695.323051	-11450132.612988	113.556559	-263.0037120003
5000	-11450574.745977	-11450226.311419	131.865519	-356.7021430004
6000	-11451095.862001	-11450515.188733	150.632361	-645.5794569999
7000	-11450840.566406	-11450141.221002	112.649898	-271.611725999
8000	-11451099.812055	-11450562.367976	103.53299	-692.7587000001
9000	-11451038.838944	-11450574.763927	107.389821	-705.1546509992
10000	-11450999.71374	-11450638.532262	119.203391	-768.9229859989
11000	-11450803.022373	-11450319.245878	100.511854	-449.6366019994
12000	-11450428.470626	-11449869.609276	124.213404	<b>(best)</b>
13000	-11450558.60822	-11450214.256986	106.185383	-344.6477099992
14000	-11450694.326608	-11450315.357446	114.860602	-445.7481699996
15000	-11450675.505885	-11450182.739883	153.660767	-313.1306069996
16000	-11450922.880813	-11450268.350853	110.463154	-398.7415769994
17000	-11450701.234511	-11450250.937053	111.724028	-381.3277770001
18000	-11450850.682595	-11450266.0749	101.416929	-396.465623999
19000	-11451405.119621	-11450915.764047	120.598017	-1046.1547710002
20000	-11451133.805351	-11450629.176252	121.664275	-759.5669759996

# Annotation of NCBI+MMG min2loci 1RY\_3Del tree

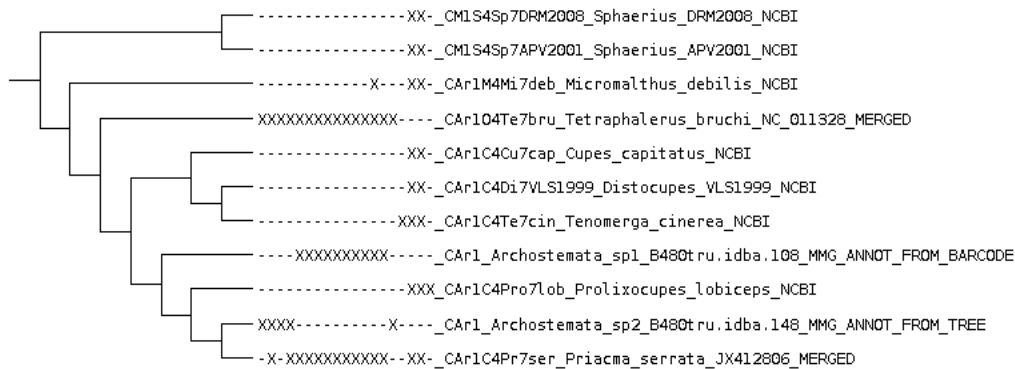
Total number in this tree based on a minimum of two loci is 15983.  
Use Suppl. File S2 to access taxonomic code details.

## 1. Suborder monophyly and basal relationships.

Molecular studies have generally recovered the four suborders as monophyletic, but their relationships are not supported. Recent consensus is (Out (Pol (Arc (Myx + Ade)))) based on transcriptomes (Misof et al., 2014), PhyloBayes analysis of mitogenomes (Timmermans et al., 2016), and multiple nuclear markers (Mckenna et al., 2015). Observed relationships in minimum-2 tree is (Out (Myx (Arc (Ade + Pol))))). Other trees from min3 and NCBI-only data show (Out (Myx (Arc (Pol+Ade))))).

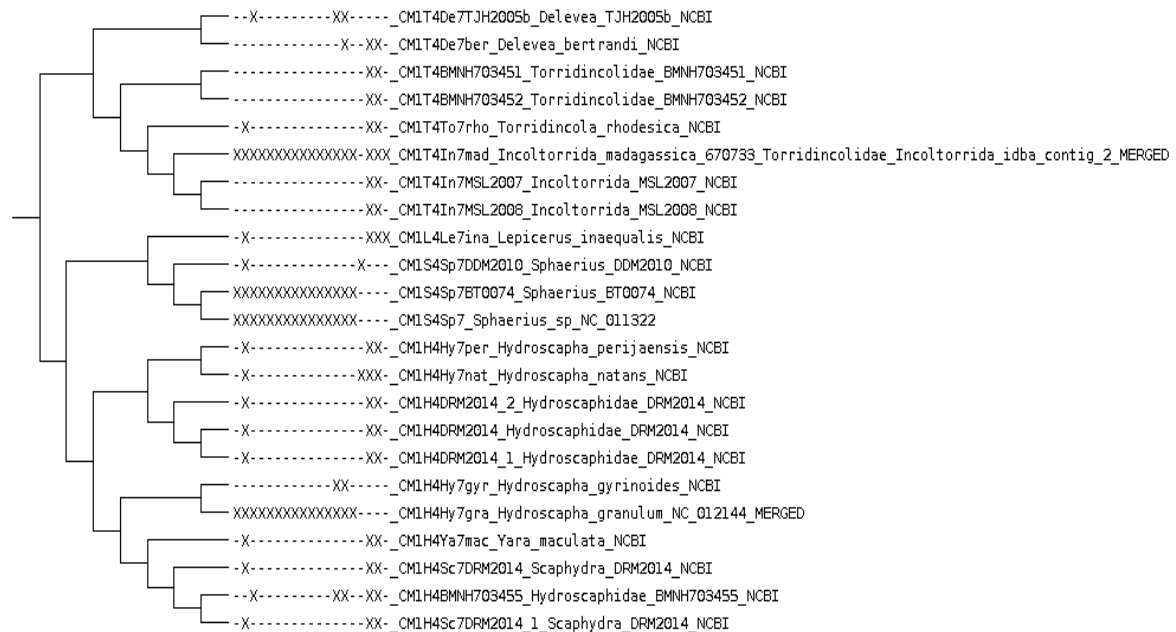
## 2. Archostemata (total number of terminals: 9; codes starting with code CAr1).

All monophyletic except for two 18S sequences of Myx sister to Ar. Three families are represented: (Micromalthidae, (Cupedidae + Ommatidae)). Two contigs from a Bornean metagenome probably correspond to a single specimen.



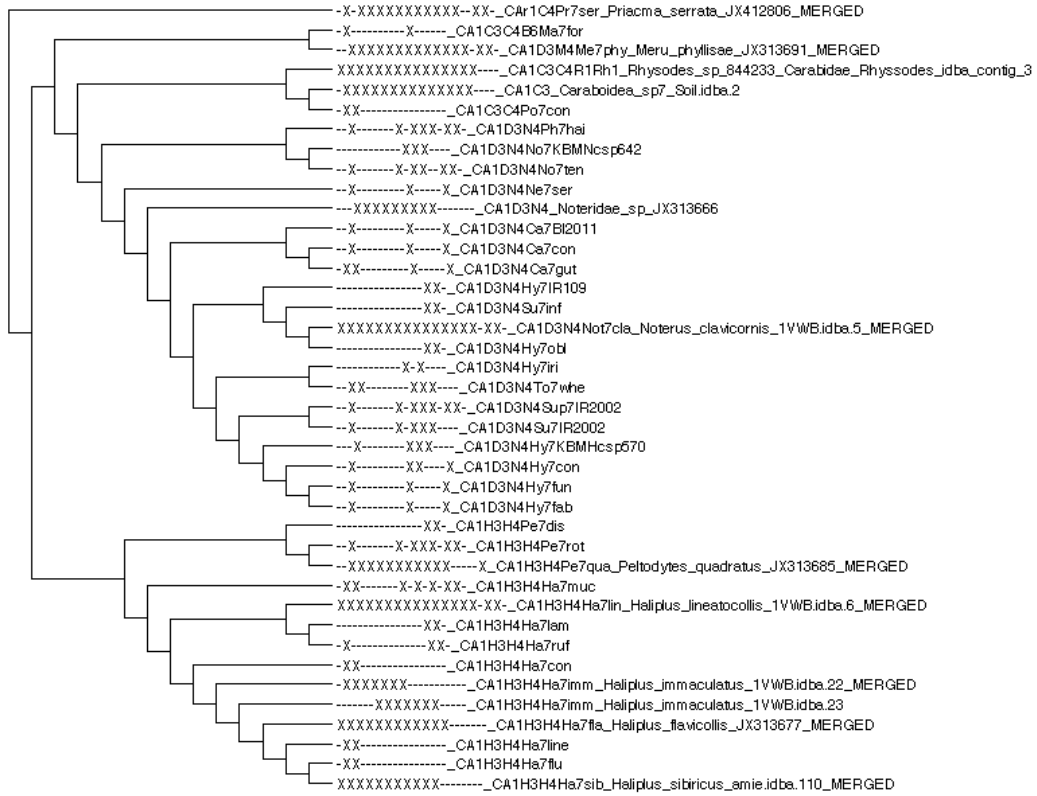
## 3. Myxophaga (25 terminals, ; codes starting with CM1).

The suborders are monophyletic except for two cox1+18S sequences of Sphaeriusidae that are sister to Archostemata. Four families are represented, with relationships (Torridincolidae ((Lepiceridae, Sphaeriusidae) Hydroscaphidae)).



4. **Adephaga (3403 terminals, codes starting with CA1).**

Basal relationships have been separated into reciprocally monophyletic aquatic Hydradephaga and terrestrial Geadephaga (Maddison et al., 2009; Shull et al., 2001) which is confirmed by recent full mitogenome studies (Lopez et al., submitted). Here we find a paraphyletic Hydradephaga, with a comb-like arrangement of ((Noteridae + Meruidae) (Haliplidae + Dytiscoidea) ((Gyrinidae (Cicindelidae + Carabidae/Trachypachidae))))). The topology with basal split of (Noteridae + Meruidae) from all others matches Timmermans et al. 2016. Hydradephaga are paraphyletic also in (Bocak et al., 2014), but with Gyrinidae at the basal split. (Mckenna et al., 2015) constrain the monophyly of Geadephaga and Hydradephaga.





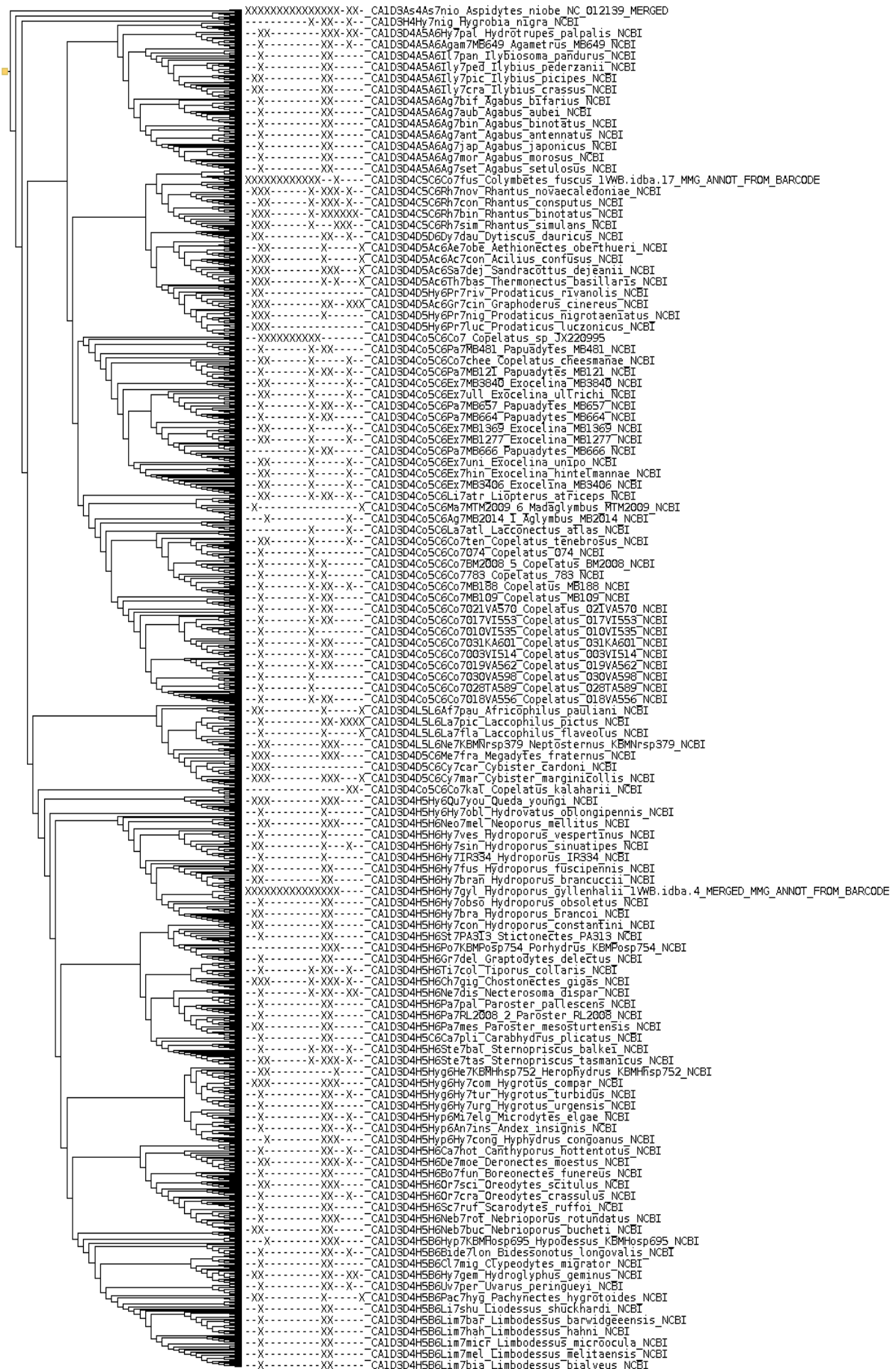
5. **Dytiscoidea (1518 terminals, codes starting with CA1D3).**The superfamily contains six families.

- a. **Basal relationships of Dytiscoidea.** The tree shows ((Aspyditidae + Amphizoidae) (Hygrobiidae (Dytiscidae))), which is in agreement with (Balke et al., 2008). Noteridae + Meruidae is placed distantly at the base of Adephaga tree (see above). All families are monophyletic, except for a few representatives of Laccophilinae are included with Hygrobiidae.
- b. **Dytiscidae (1488 terminals, codes starting with CA1D3D4).**

The most complete molecular tree available is (Ribera, 2008), which found several subfamilies non-monophyletic. The current tree is more in agreement with the subfamily classification than the summary tree of which are recovered as monophyletic here.

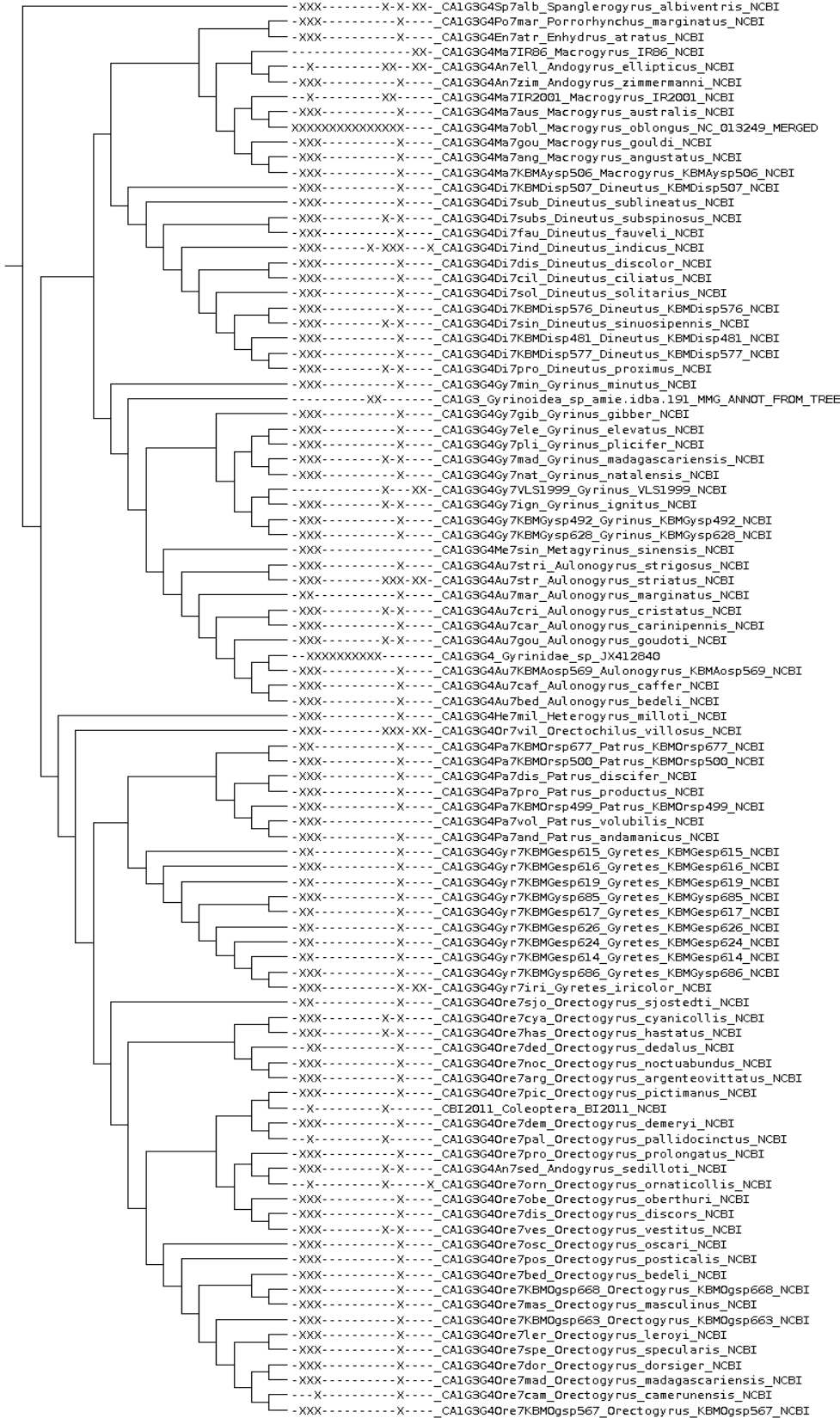
  - i. Dytiscinae is monophyletic, except for the distantly related Cybristrini. Ribera, 2008 recovered tribes Acilini and Hydatcini/Hydradini in a clade different from Dytiscini, which is not observed here.
  - ii. Agabinae is monophyletic: Hydrotrupes is sister to Platynectes and relatives, which combined are sister to Agabini; these groups were not a monophylum in Ribera, 2008. The two large genera Ilybius/Ilybiosoma and Agabus are reciprocally monophyletic except for species of Platambus which are scattered throughout the Agabini.
  - iii. Laccophilinae is monophyletic and includes Agabetini, which was recovered distant to Laccophilini in Ribera, 2008.
  - iv. Copelatinae: Agaporomorphus is deeply embedded in this subfamily, near Madaglymbus (not recovered as closely related to other Copelatinae in Ribera, 2008. Liopterus is sister to the large Aglymbus/Copelatus clade, which is reciprocally monophyletic to the Exocelina/Papuadytes clade (Balke et al., 2004).
  - v. Relationships within Dytiscidae show four main lineages:
    1. Basal split is Aubehydrini (Dytiscinae) as sister to all others. In Ribera, 2008 Aubehydrini is recovered near the base together with Hydrodytinae /Matinae (here found nearer Hydroporinae, clade 4.)
    2. ((Coptotominae + Lancetinae) Agabinae)
    3. ((Colymbetinae + Dytiscinae)) Copelatinae) (NB: Copelatinae are not fully monophyletic because of four species represented by 18S only are placed distantly).
    4. ((Matinae (Laccophilinae Cybistrini)) ((Hydrodytinae) Hydroporinae))).

**Important note: The following tree is a compressed version of the 1488 Dytiscidae terminals. Details are part of the complete tree included in Suppl File S4 and S5 (which spans over many pages). The corresponding tree can be reached by searching for the Label prefix “CA1D3D4”.**



6. **Gyrinoidea (Gyrinidae) (93 terminals, codes starting with CA1G3).**

A recent study of (Miller and Bergsten, 2012) produced a tree very similar to that found here. The basal split is Spanglerogyrus versus all others, as expected; two main clades include ((Macrogyrus + Dineutus) Gyrinus) and (Heterochilus (Orectochilus ((Patrus + Gyretes) Orectogyrus))). Miller and Bergsten recover (Macrogyrus + Dineutus) as sister to the latter clade, but with low support.



7. **Carabaeoidea (=Geadephaga) (1774 terminals, codes starting with CA1C3).**

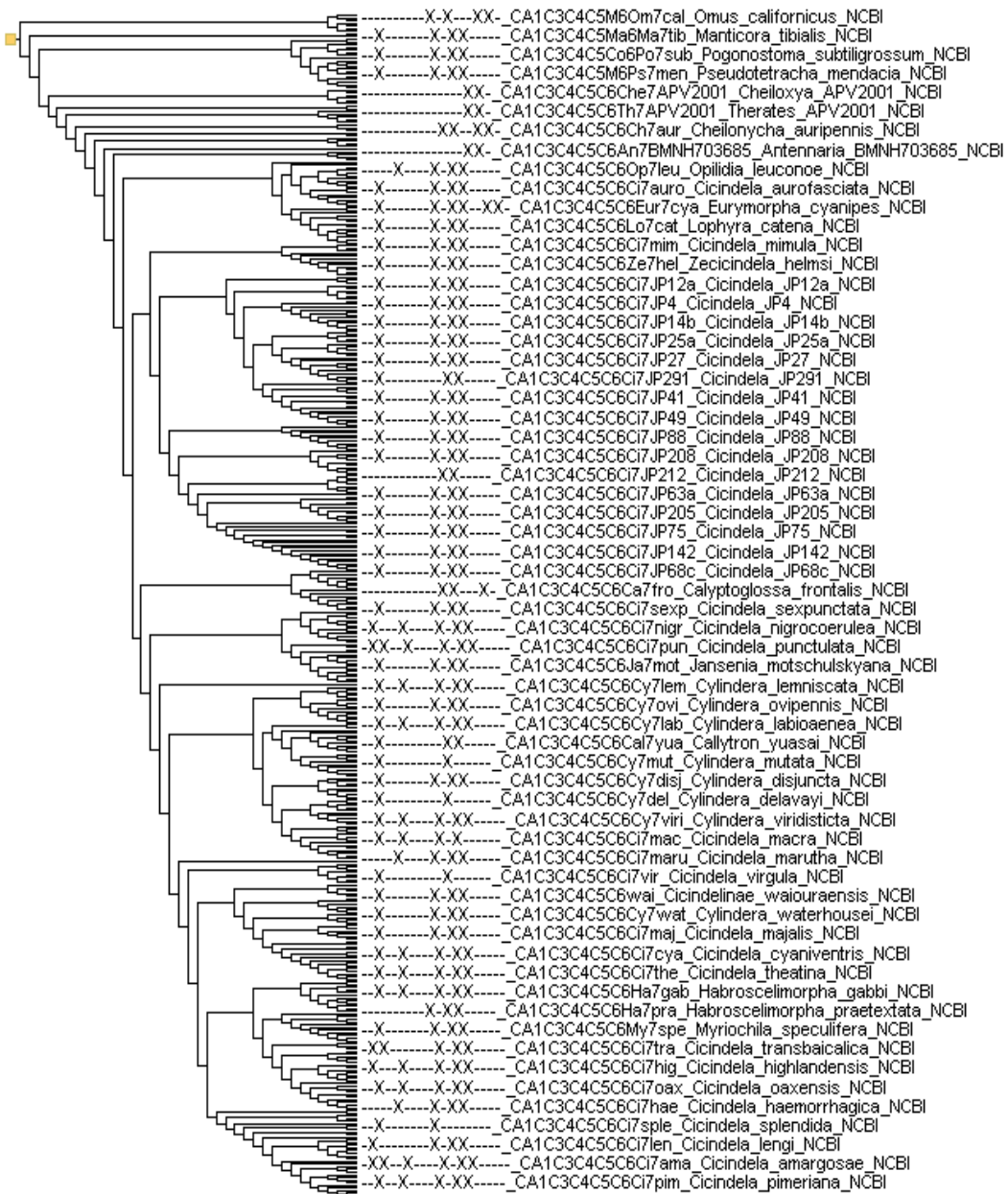
A major attempt for resolving basal relationships was by (Maddison et al., 1999) using 18S, and basal relationships in the large subfamily Harpalinae (Ober, 2002) based on 28S and wingless. The NCBI taxonomy recognises four families, Carabidae, Cicindelidae, Trachypachidae and Rhysodidae. We find Cicindelidae and Carabidae + Trachypachidae split into two sister lineages. (The single representative of Rhysodidae groups with Cicindelidae).

a. **Cicindelidae (442 terminals, codes starting with CA1C3C4C5).**

Basal relationships have been assessed by (Vogler and Pearson, 1996) using 16S and 18S rRNA. Treated as subfamily of Carabidae in the GenBank taxonomy but is sister to all other caraboids in the current tree (except for three members of tribe Rhysodini represented by 18S sequences and thus deserves family status (also see (López-López and Vogler, n.d.) et al., in press). Cicindelidae is monophyletic, with three main groups recognised in NCBI.

- i. Megacephalini: split into two clades, including a diverse set of species of several species poor Southern Hemisphere genera (subtribe Omina), and the cosmopolitan genus Megacephala s.l. (subtribe Megacephalina). The latter is sister to Collyridini, a group of mainly arboreal species. Some inconsistencies in tree due to double entry for misspelling of Platychile and Platychila
- ii. Cicindelini: recovered as monophyletic, includes several genera frequently assigned to subtribe Prothymina. Basal split is genus (Pseud)oxycheila, and comb-like arrangement of other genera, in agreement with Vogler and Pearson 1996.
  1. Cicindelina: this group is recovered as the terminal portion of Cicindelidae, and recovers broadly the subclades of North American groups (Vogler et al., 2005) and worldwide clades based on a smaller subsample, including clades I, II, and III of (Pons et al., 2004), and Asian lineages (Sota et al., 2011). Genus and subgenus assignments in Cicindelina have been applied inconsistently, which complicates the use of measures of monophyly.

**Important note: The following tree is a compressed version of the 442 Cicindelidae terminals. Details are part of the complete tree included in Suppl File S4 and S5 (which spans over many pages). The corresponding tree can be reached by searching for the Label prefix “CA1C3C4C5”.**



b. **Carabidae (1332 terminals, codes starting with CA1C3C4).**

Data are contributed by Maddison et al.'s (1999) study using 18S, and basal relationships in the large subfamily Harpalinae (Ober and Heider, 2010) based on 28S and wingless. This is complemented by several studies on large genera, e.g. on *Carabus* (Deuve et al., 2012), *Bembidion* (Maddison, 2012), Trechitae and various genera of Harpalinae.

i. **Carabidae.** They are a monophyletic (with the inclusion of Trachypachidae) and are sister to all other Carabidae. This branch includes several clades in a comb-shaped arrangement, including Trachypachidae + Nebriini, Elaphrini, the southern-hemisphere *Pamborus* + *Ceroglossus*, *Cychnus*, and *Calosoma* as sister to *Carabus*. These five major genus-level lineages are monophyletic except for two genera of Trachypachidae, *Trachypachis* (represented by full mitogenome) and *Systolosoma* (represented by 18S only) are widely separated.

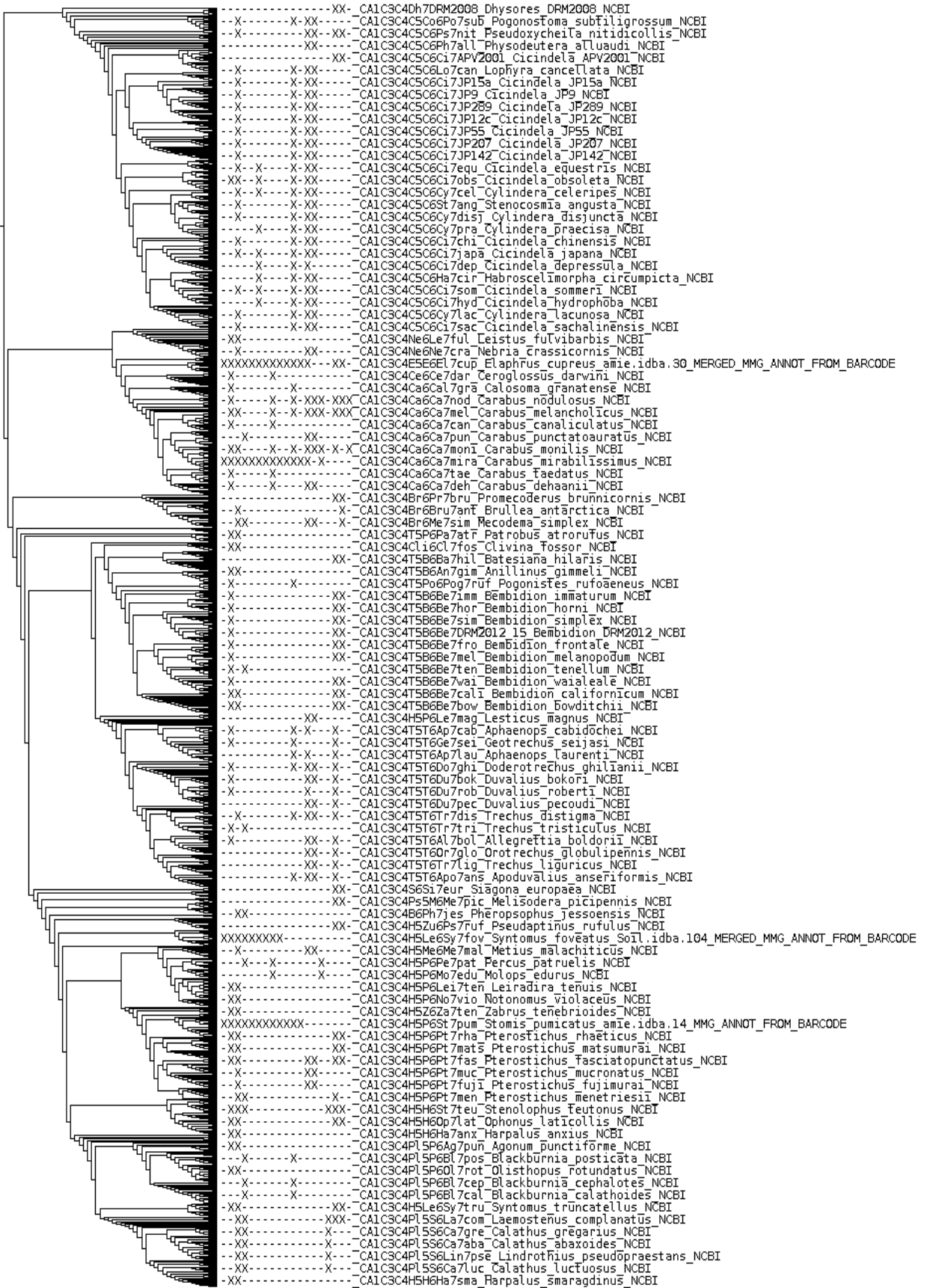
1. *Carabus*: the species groups of (Deuve et al., 2012) are mostly recovered but with slightly different relationships to each other. For example, Neocarabi are part of a wider clade including *Ohomopterus* and Archicarabus. This clade is embedded in a set of species groups of Multistriati, which are rendered paraphyletic with regard to the extended Neocarabi. Note that *Ohomopterus* from a different dataset (Sota et al., 2001) is embedded in Multistriati sister to *C. granulatus/hortensis*. The sister group of the large Multistriati + Neocarabi clade is (*Ctenocarabus* + *Tachypus*). Basal splits in *Carabus* largely correspond to the structure in Deuve et al. 2012.

2. Remaining Carabidae: Broscini sister to all others, followed by several small groups including (Promecognathinae, (Omophroninae + Psydrini)), Migadopini and Loricerini. Most of these groups have been sequenced for 18S only. The terminal split includes two very large clades, separating Trechitae and Harpalinae, each clade includes several smaller group of uncertain placement. Harpalinae is a terminal group that is embedded in various major lineages, including Scaritini, Clvini, Psydrini, Brachinini and others.

ii. **Trechitae (469 terminals).** Consisting of two major groups, with >200 available species of *Bembidion* internal relationships and relationships with smaller genera were arranged very similarly to the study of (Maddison and Ober, 2011). Patrobini are part of Trechitae (sister to *Trechus*), as found by (Maddison and Ober, 2011).

iii. **Harpalinae.** The NCBI taxonomy splits this group into multiple subfamilies, including Harpalinae, Licininae and Platyninae. Basal relationships in this very large group have been treated by (Ober and Heider, 2010) based on 28S and wingless, thus only one locus of those used here. Taxa present are derived from several large genus level studies (each ~100 species), for Blackburnia, Pterostichus, and Calathus. Harpalinae are monophyletic. The resolution in this part of the tree shows various incongruences with the tribal taxonomy. Basal splits are Zuphiini splitting before the Lebiini/Cyclosominini, which are sister to two large terminal clades corresponding mainly to (Zabrini + Pterostichini) and (Harpalini + Platinini). The sister relationships of Harpalinae are not clear.

**Important note: The following tree is a compressed version of the 1332 Carabidae terminals. Details are part of the complete tree included in Suppl File S4 and S5 (which spans over many pages). The corresponding tree can be reached by searching for the Label prefix "CA1C3C4".**



## References

- Balke, M., Ribera, I., Beutel, R., Vilorio, A., Garcia, M., Vogler, A.P., 2008. Systematic placement of the recently discovered beetle family Meruidae (Coleoptera: Dytiscoidea) based on molecular data. *Zool. Scr.* 37, 647–650.
- Balke, M., Ribera, I., Vogler, A.P., 2004. MtDNA phylogeny and biogeography of Copelatinae, a highly diverse group of tropical diving beetles (Dytiscidae). *Mol. Phylogenet. Evol.* 32, 866–880.
- Bocak, L., Barton, C., Crampton-Platt, A., Chesters, D., Ahrens, D., Vogler, A.P., 2014. Building the Coleoptera tree-of-life for >8000 species: composition of public DNA data and fit with Linnaean classification. *Syst. Entomol.* 39, 97–110.
- Deuve, T., Cruaud, A., Genson, G., Rasplus, J.-Y., 2012. Molecular systematics and evolutionary history of the genus *Carabus* (Col. Carabidae). *Mol. Phylogenet. Evol.* 65, 259–275.
- López-López, A., Vogler, A.P., n.d. The mitogenome phylogeny of Adephegidae (Coleoptera). *Mol. Phylogenet. Evol.* In press.
- Maddison, D.R., 2012. Phylogeny of Bembidion and related ground beetles (Coleoptera: Carabidae: Trechinae: Bembidiini: Bembidiina). *Mol. Phylogenet. Evol.* 63, 533–576.
- Maddison, D.R., Baker, M.D., Ober, K.A., 1999. Phylogeny of carabid beetles as inferred from 18S ribosomal DNA (Coleoptera: Carabidae). *Syst. Entomol.* 24, 103–138.
- Maddison, D.R., Moore, W., Baker, M.D., Ellis, T.M., Ober, K.A., Cannone, J.J., Gutell, R.R., 2009. Monophyly of terrestrial adephegidae beetles as indicated by three nuclear genes (Coleoptera: Carabidae and Trachypachidae). *Zool. Scr.* 38, 43–62.
- Maddison, D.R., Ober, K.A., 2011. Phylogeny of minute carabid beetles and their relatives based upon DNA sequence data (Coleoptera, Carabidae, Trechinae). *Zookeys* 229–260.
- McKenna, D.D., Wild, A.L., Kanda, K., Bellamy, C.L., Beutel, R.G., Caterino, M.S., Farnum, C.W., Hawks, D.C., Ivie, M.A., Jameson, M.L., Leschen, R.A.B., Marvaldi, A.E., Mchugh, J.V., Newton, A.F., Robertson, J.A., Thayer, M.K., Whiting, M.F., Lawrence, J.F., ŚLIPINSKI, A., Maddison, D.R., Farrell, B.D., 2015. The beetle tree of life reveals that Coleoptera survived end-Permian mass extinction to diversify during the Cretaceous terrestrial revolution. *Syst. Entomol.* 40, 835–880.
- Miller, K.B., Bergsten, J., 2012. Phylogeny and classification of whirligig beetles (Coleoptera: Gyrinidae): relaxed-clock model outperforms parsimony and time-free Bayesian analyses. *Syst. Entomol.* 37, 706–746.
- Misof, B., Liu, S., Meusemann, K., Peters, R.S., Donath, A., Mayer, C., Frandsen, P.B., Ware, J., Flouri, T., Beutel, R.G., Niehuis, O., Petersen, M., Izquierdo-Carrasco, F., Wappler, T., Rust, J., Aberer, A.J., Aspöck, U., Aspöck, H., Bartel, D., Blanck, A., Berger, S., Böhm, A., Buckley, T.R., Calcott, B., Chen, J., Friedrich, F., Fukui, M., Fujita, M., Greve, C., Grobe, P., Gu, S., Huang, Y., Jermiin, L.S., Kawahara, A.Y., Krogmann, L., Kubiak, M., Lanfear, R., Letsch, H., Li, Y., Li, Z., Li, J., Lu, H., Machida, R., Mashimo, Y., Kapli, P., McKenna, D.D., Meng, G., Nakagaki, Y., Navarrete-Heredia, J.L., Ott, M., Ou, Y., Pass, G., Podsiadlowski, L., Pohl, H., von Reumont, B.M., Schütte, K., Sekiya, K., Shimizu, S., Slipinski, A., Stamatakis, A., Song, W., Su, X., Szucsich, N.U., Tan, M., Tan, X., Tang, M., Tang, J., Timelthaler, G., Tomizuka, S., Trautwein, M., Tong, X., Uchifune, T., Walz, M.G., Wiegmann, B.M., Wilbrandt, J., Wipfler, B., Wong, T.K.F., Wu, Q., Wu, G., Xie, Y., Yang, S., Yang, Q., Yeates, D.K., Yoshizawa, K., Zhang, Q., Zhang, R., Zhang, W., Zhang, Y., Zhao, J., Zhou, C., Zhou, L., Ziesmann, T., Zou, S., Li, Y., Xu, X., Zhang, Y., Yang, H., Wang, J., Wang, J., Kjer, K.M., Zhou, X., 2014. Phylogenomics resolves the timing and pattern of insect evolution. *Science* 346, 763–767.
- Ober, K.A., 2002. Phylogenetic relationships of the carabid subfamily Harpalinae (Coleoptera) based on molecular sequence data. *Mol. Phylogenet. Evol.* 24, 228–248.
- Ober, K.A., Heider, T.N., 2010. Phylogenetic diversification patterns and divergence times in ground beetles (Coleoptera: Carabidae: Harpalinae). *BMC Evol. Biol.* 10, 262.
- Pons, J., Barraclough, T., Theodorides, K., Cardoso, A., Vogler, A., 2004. Using exon and intron sequences of the gene *Mp20* to resolve basal relationships in *Cicindela* (Coleoptera: Cicindelidae). *Syst. Biol.* 53, 554–570.
- Ribera, I., 2008. Habitat constraints and the generation of diversity in freshwater macroinvertebrates, in: *Aquatic Insects: Challenges to Populations*. pp. 289–311.
- Shull, V.L., Vogler, A.P., Baker, M.D., Maddison, D.R., Hammond, P.M., 2001. Sequence alignment of 18S ribosomal RNA and the basal relationships of Adephegidae beetles: evidence for monophyly of aquatic families and the placement of Trachypachidae. *Syst. Biol.* 50, 945–969.
- Sota, T., Ishikawa, R., Ujiié, M., Kusumoto, F., Vogler, A.P., 2001. Extensive trans-species



- mitochondrial polymorphisms in the carabid beetles *Carabus* subgenus *Ohomopterus* caused by repeated introgressive hybridization. *Mol. Ecol.* 10, 2833–2847.
- Sota, T., Liang, H., Enokido, Y., Hori, M., 2011. Phylogeny and divergence time of island tiger beetles of the genus *Cylindera* (Coleoptera: Cicindelidae) in East Asia. *Biol. J. Linn. Soc. Lond.* 102, 715–727.
- Timmermans, M.J.T.N., Barton, C., Haran, J., Ahrens, D., Culverwell, C.L., Ollikainen, A., Dodsworth, S., Foster, P.G., Bocak, L., Vogler, A.P., 2016. Family-Level Sampling of Mitochondrial Genomes in Coleoptera: Compositional Heterogeneity and Phylogenetics. *Genome Biol. Evol.* 8, 161–175.
- Vogler, A., Cardoso, A., Barraclough, T., 2005. Exploring Rate Variation Among and Within Sites in a Densely Sampled Tree: Species Level Phylogenetics of North American Tiger Beetles (Genus *Cicindela*). *Syst. Biol.* 54, 4–20.
- Vogler, A.P., Pearson, D.L., 1996. A molecular phylogeny of the tiger beetles (Cicindelidae): congruence of mitochondrial and nuclear rDNA data sets. *Mol. Phylogenet. Evol.* 6, 321–338.