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Supplementary Information:
The ubiquity and ancestry of insect *doublesex*

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Figure S1

Order	Species	GenBank accession	OD1 sequence	OD2 Sequence
Protura	<i>Acerentomon</i> sp. AD2013	GAXE01026579_4	TTPLCAQRNHLGKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	DASLVFYQMEHIMQKFLPIESLPAIYALFKDANGSVEE-TCCKLMSAYEDLHELHSLVRLLEAL
Protura	<i>Acerentomon</i> sp. AD2013	GAXE01016537_1	<OD2 singleton>	AATLIFQORLEHLLNFKLPVLESIPAIYALFKDANGSVEE-ASERLMAAYEELHELHSLVRLLEAL
Zygentoma	<i>Atelura formicaria</i>	GAYJ01004010_4	PARLCAQRNHLGKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	ARERMLYESLVMRQAFVFGVEAMPPLLLCLLKHRS-SVQE-ASLKIYQGHYDNLAKGFGVLDG
Zygentoma	<i>Atelura formicaria</i>	PCDORPKIACXX:7:2202:17946:4233:6	<OD2 singleton>	-----KESLQTLDDMFLRPMETPLIYVVLKDKAR-SDVKEASNRITEGGWIMTQMAA
Zygentoma	<i>Tricholepidion gertschi</i>	GASO01035612_2	PSRLCAQRNHLGKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	EREQMLYESLVMRQAFVFGVEAMPPLLLCLLKHRS-SVQE-ASWKIQCTDRLSARGIIGIEN
Zygentoma	<i>Tricholepidion gertschi</i>	GASO01035827_5	<OD2 singleton>	EGDVMMSELHALLMFLPLETEPLIYVVLKDKARS-DVKE-ASNRITIEQSELSITRF-----
Zygentoma	<i>Thermobia domestica</i>	GASN01031735_3	PSRLCAQRNHLGKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	ARERMLYESLVMRQAFVFGVEAMPPLLLCLLKHRS-SVQE-ASWKIYQCTDRLSARGIIGIEN
Zygentoma	<i>Thermobia domestica</i>	GASN010345779_5	<OD2 singleton>	ENVELLKDLSHALLDMFLPLETEPLIYVVLKDKARS-DVKE-ASNRIMEDQVQDQDMLRAGIIPAG
Odonata	<i>Epiophlebia superstes</i>	GAVW01013444_6	TPPKCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	TRERMLYESLVMRQAFVFGVEAMPPLLLCLLKHRS-SVQE-ASWKIYQCTDRLSARGIIGIEN
Odonata	<i>Cordulegaster boltonii</i>	GAYO01000812_6	TPPKCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	ENMDFIKDAIVALLQMFRLPVDITPLIYVVLKDKARS-DVKE-ASNOIQDQDMLRAGIIPAG
Ephemeroptera	<i>Ephemerella danica</i>	GAYO01006643_5	SNRLCAQRNHLGKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	TRERMLYESLVMRQAFVFGVEAMPPLLLCLLKHRS-SVQE-ASWKIYQCTDRLSARGIIGIEN
Ephemeroptera	<i>Isonychia bicolor</i>	GAXA00111429_5	SNRLCAQRNHLGKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	TRERMLYESLVMRQAFVFGVEAMPPLLLCLLKHRS-SVQE-ASWKIYQCTDRLSARGIIGIEN
Ephemeroptera	<i>Isonychia bicolor</i>	GAXA01058460_2	<OD2 singleton>	DNISLRDSIQTLDDTFLRPMETPLIYVVLKDKARS-DVKE-ASNRITIEQSELSITRF-----
Ephemeroptera	<i>Baetis</i> sp. AD-2013	GAYU01002143_4	SNRMCAQRNHLGKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	QRKMLMYSLELRSRHPVFDALPPLLLCLLKHRS-SVQE-ASWKIQGLQGLSALAAASNREL
Zoraptera	<i>Zorotypus caudelli</i>	GAYO01001439_2	RTFKGCRNRNGALNVLKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	DKTRVLIQINCLRSYGLFVSWESPLVHILLEDGMVNYA-SSVYFNALQGLQGLSALAAASNREL
Zoraptera	<i>Zorotypus caudelli</i>	GAYO01001439_2	RTFKGCRNRNGALNVLKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	DKTRVLIQINCLRSYGLFVSWESPLVHILLEDGMVNYA-SSVYFNALQGLQGLSALAAASNREL
Zoraptera	<i>Zorotypus caudelli</i>	GAYO01001439_2	RTFKGCRNRNGALNVLKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	DKTRVLIQINCLRSYGLFVSWESPLVHILLEDGMVNYA-SSVYFNALQGLQGLSALAAASNREL
Zoraptera	<i>Zorotypus gurneyi</i>	GAYO01001439_2	RTFKGCRNRNGALNVLKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	DKTRVLIQINCLRSYGLFVSWESPLVHILLEDGMVNYA-SSVYFNALQGLQGLSALAAASNREL
Zoraptera	<i>Zorotypus gurneyi</i>	GAYO01001439_2	RTFKGCRNRNGALNVLKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	DKTRVLIQINCLRSYGLFVSWESPLVHILLEDGMVNYA-SSVYFNALQGLQGLSALAAASNREL
Dermoptera	<i>Apachys chartaceus</i>	GAWU00111999_3	-----YRNCR-NKCTLTAERQIRVALH	KIKIQRHESITHTMTEFLKPSKSVLITLTKLRYINN-VSHHITDSTOELIIGNHEOSQ
Dermoptera	<i>Forficula auricularia</i>	GAYO010017360_5	KAPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	ANGVLDLRSISVITNFKPLTLEAVPMIYALLKSAHFSVHQ-VLENIENCKIPYCVKLNIVVIT
Orthoptera	<i>Tetrix subulata</i>	GASO01124537_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	ENFVLESIQALLEFLYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Orthoptera	<i>Teleogryllus commodus</i>	GHSB01043004_1	RTPYCAQRNHLGKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	-----LPQIQMLLDAFLRPMALPILYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Phasmatodea	<i>Arcteano asperimus</i>	GAZQ001017692_2	MNRLCALCRNHLGKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	VRQMLYESLVMRQAFVFGVEAMPPLLLCLLKHRS-SVQE-ASWKIYQCTDRLSARGIIGIEN
Phasmatodea	<i>Arcteano asperimus</i>	GAWC01030481_5	<OD2 singleton>	VSVVAMDDGVYTLHMHFYHVMELPILLVVLSDAHDVTE-AYNRIQLQGLSALAAASNREL
Phasmatodea	<i>Ramulus artemis</i>	GAWE01010273_2	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	VSVVAMDDGVYTLHMHFYHVMELPILLVVLSDAHDVTE-AYNRIQLQGLSALAAASNREL
Phasmatodea	<i>Ramulus artemis</i>	GAWE01010273_2	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	VSVVAMDDGVYTLHMHFYHVMELPILLVVLSDAHDVTE-AYNRIQLQGLSALAAASNREL
Phasmatodea	<i>Medauroidea extradentata</i>	GAWD01075183_3	MNRLCALCRNHLGKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	VRDQMLYESLVMRQAFVFGVEAMPPLLLCLLKHRS-SVQE-ASWKIYQCTDRLSARGIIGIEN
Phasmatodea	<i>Extatosoma tiaratum</i>	GAWG01081702_1	INRLCALCRNHLGKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	VRQMLYESLVMRQAFVFGVEAMPPLLLCLLKHRS-SVQE-ASWKIYQCTDRLSARGIIGIEN
Phasmatodea	<i>Sipyliaidea siphylus</i>	GAWF01025783_1	INRLCALCRNHLGKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	VRQMLYESLVMRQAFVFGVEAMPPLLLCLLKHRS-SVQE-ASWKIYQCTDRLSARGIIGIEN
Phasmatodea	<i>Peruphasma schultzei</i>	GAWJ01240650_4	MNRLCALCRNHLGKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	VRQMLYESLVMRQAFVFGVEAMPPLLLCLLKHRS-SVQE-ASWKIYQCTDRLSARGIIGIEN
Phasmatodea	<i>Timema cristinale</i>	GAVX01147206_3	MNRLCALCRNHLGKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	VRQMLYESLVMRQAFVFGVEAMPPLLLCLLKHRS-SVQE-ASWKIYQCTDRLSARGIIGIEN
Mantodea	<i>Metallyticus splendidus</i>	GATB01322676_2	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	ESMEIPWDAALTLLEKFLPVSPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Mantodea	<i>Mantis religiosa</i>	GASW01222710_6	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	ESITVRESILELLEFLRPLWETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Mantodea	<i>Mantis religiosa</i>	GASW01222710_6	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	ESITVRESILELLEFLRPLWETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Hemiptera	<i>Cercopis vulnerata</i>	GAYO01115682_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	ENSKPEWDSILLMHLGLPVNTPLILLILKEVADSVTE-VNCRFLQGEAELRSTCFKIEE
Hemiptera	<i>Okanagana villosa</i>	GAWO01014169_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	RDSKELWESILLHHLWFLPVNTPLILLILKEVADSVTE-VNCRFLQGEAELRSTCFKIEE
Hemiptera	<i>Okanagana villosa</i>	GAWO01014168_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	RDSKELWESILLHHLWFLPVNTPLILLILKEVADSVTE-VNCRFLQGEAELRSTCFKIEE
Hemiptera	<i>Notostira elongata</i>	GASV01006917_3	KQRFQFCRNRHTKIRTKHGKHKRYCRYRCCI-CQECIATKARQIKMAQ	TLRIMWERTLTVLEKQYSLDTPILYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Hemiptera	<i>Xenophysella greensladeae</i>	GAWR01023103_2	-APNCAQRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	GEEVHWESIATLLEFLRPLWETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Psocoda (Phthiraptera)	<i>Menopon gallinae</i>	GAWR01005396_5	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	KSLNHRNCVMKLVKDFGLGIDAYPLAVYVFKIAGGVDYV-ATKMLIEQGEAELRSTCFKIEE
Psocoda (Psocoptera)	<i>Liposcelis bostrychophila</i>	GAYO01012131_4	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	NKLNRYRYVMKLVKDFGLGIDAYPLAVYVFKIAGGVDYV-ATKMLIEQGEAELRSTCFKIEE
Hymenoptera	<i>Cotesia vestalis</i>	GAYP01001251_3	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	ENVEVLLECSKTLLEFLYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Hymenoptera	<i>Chrysid viridula</i>	GAYT01010708_4	ALRSACRNSRHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	DSVEVLLECSKTLLEFLYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Hymenoptera	<i>Orussus abietinus</i>	GAYU01013146_6	GTCRCSRNLNEVMPKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	ESMTDLQTLLELLEFLYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Hymenoptera	<i>Tenthredo koehleri</i>	GAWW01003430_6	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	ENVEVLLECSKTLLEFLYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Hymenoptera	<i>Microplitis demolitor</i>	J0916215_4	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	ENVEVLLECSKTLLEFLYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Hymenoptera	<i>Sphaerophthalma orestes</i>	GAXP01022687_1	SRPSCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	GDVEVLLECSKTLLEFLYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Hymenoptera	<i>Sphaerophthalma orestes</i>	GAXP01017427_3	RKPCACRNRHVKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	DNVEVLLECSKTLLEFLYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Hymenoptera	<i>Osmia cornuta</i>	GAGH01066955_2	KPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	DTVEVLLECSKTLLEFLYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Raphidioptera	<i>Xanthostigma xanthostigma</i>	GAYU01017467_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	HNVEVLNVCYHRLDTPFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Raphidioptera	<i>Inocellia crassicornis</i>	GAZH01013937_4	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	HNVEVLNVCYHRLDTPFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Megaloptera	<i>Corydalus cornutus</i>	GATG01001294_4	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	NNIEVLNVCYHRLDTPFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Neuroptera	<i>Conwentzia psociformis</i>	GAYH01007785_3	APPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	VPSEALDKCHALLDKFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Neuroptera	<i>Osmylus fulvicephalus</i>	GAYC01086997_6	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	KQEVVLEVCYHRLDTPFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Strepsiptera	<i>Stylops melittae</i>	GAZM01003841_2	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	INTEGIDISYQKLMIEFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Coleoptera	<i>Meloe violaceus</i>	GATA01048201_6	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	AQSTDLLEDCQKLLERFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Coleoptera	<i>Meloe violaceus</i>	GATA01002860_6	<OD2 singleton>	RGAEMLLEDCQKLLERFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Coleoptera	<i>Gyrinus marinus</i>	GAYU01008867_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	GQSTELLEDQKLLERFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Coleoptera	<i>Gyrinus marinus</i>	GAYU01008867_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	GQSTELLEDQKLLERFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Coleoptera	<i>Meligethes aeneus</i>	GAPD01021632_6	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	HQSTDLLEDQKLLERFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Coleoptera	<i>Meligethes aeneus</i>	GAPD01021632_6	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	HQSTDLLEDQKLLERFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Coleoptera	<i>Aleochara curtula</i>	GATW01000814_5	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	VHSTDLMEDCQKLLERFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Coleoptera	<i>Pogonus chalcus</i>	JU430525_5	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	GQSTELLEDQKLLERFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Coleoptera	<i>Dendroctonus frontalis</i>	GATF01011207_3	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	DRSMDLLEDQKLLERFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Trichoptera	<i>Annulipalpia</i> sp. AD-2013	GATX01084595_6	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	PLFENMLDNCQKLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Lepidoptera	<i>Nemophora degeerella</i>	GATC01014479_1	APPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	HSLEALVENCYHRLDTPFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Lepidoptera	<i>Parides eurimedus</i>	GAXH01085310_6	APPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	VSLETVENCYHRLDTPFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Lepidoptera	<i>Spodoptera litura</i>	GBYB01009273_1	APPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	VSLNVLVENCYHRLDTPFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Lepidoptera	<i>Trichoplusia ni</i>	GBKU01001268_4	APPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	VSLDALVENCYHRLDTPFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Lepidoptera	<i>Helicoverpa armigera</i>	GBDM01028004_1	APPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	VSPFVLENCYHRLDTPFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Siphonaptera	<i>Ceratophyllus gallinae</i>	GAWK01054083_5	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	EEVKTLLLESQKLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Siphonaptera	<i>Cenotaphus felis</i>	GAYP01008255_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	EKVALLLESQKLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Siphonaptera	<i>Oropsylla silantiewi</i>	GAWY01012876_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	EEVKTLLLESQKLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Mecoptera	<i>Boreus hyemalis</i>	GAYK01000638_3	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	SDARDYVQMYRLLDHPFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Mecoptera	<i>Boreus hyemalis</i>	GAYK01015512_3	<OD2 singleton>	YSDKRVFDLSQKLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Mecoptera	<i>Boreus hyemalis</i>	GAYK01017535_4	<OD2 singleton>	YFDKRVFDLSQKLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Bombylius major</i>	GATD01007470_4	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	QNAELLEVCQKLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Bombylius major</i>	GATD01007471_5	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	QNAELLEVCQKLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Triarthra setipennis</i>	GAVT01013308_3	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	NSIDLILDYQKLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Trichocera saltator</i>	GAXD01015564_6	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	QNTFELLEYQKLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Liparia lucens</i>	GAZJ01014428_8	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	TEDQFVLYNCKLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Drosophila miranda</i>	GALP01005259_3	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	LGQDFVLYNCKLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Sitidiplosis mosellana</i>	GAKJ01011849_2	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	NDADMLESQKLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Teleopsis dalmani</i>	GBBP01063334_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	PPFDLILGSEKLLKQFYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Bactrocera dorsalis</i>	GAKP01007048_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	LAQDFVLEHCQKLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Ceratitis capitata</i>	GAMC01004171_3	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	LAQDFVLEHCQKLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Anopheles quadrimaculatus</i>	GBTB01014262_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	LPDDELVKRAQWLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Aedes albopictus</i>	GAPW01003320_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	LPDDELVKRAQWLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Psorophora albipes</i>	GALA01000925_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	RTDDELVKRSQYLLKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Anopheles funestus</i>	E2974425_2	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	LPDDELVKRAQWLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Cerethrella appendiculata</i>	GAN001004847_1	TAPNCAQRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	MQNDLLEKSHQLEKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Culicoides sonorensis</i>	GAWM01002290_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	RKTDRILDNDCTLCRSYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Belgica antarctica</i>	GAAK01007185_1	TPPNCARCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	NNNDNFWDMAQMDARDNYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR
Diptera	<i>Belgica antarctica</i>	GAAK01003177_1	KGSCVCRNHLKILKLGKHKRYCRYRCCI-CQECIATKARQIKMAQ	KDKALPDCSEKLLKQYFVETPLIYVVLKDKARS-DVKE-ASNRILEAQEPTSCAGLNDAAR

Figure S2

Order	Species	[Accession]_[frame]/[range]	Sequence	HMM e-val
Protura	<i>Acerentomon</i> sp. AD-2013	GAXE01105806.1_2/58-86	RLPKCARCINHGLKIPLKGHKRYCTNKYCDP-----	8.5e-13
Collembola	<i>Sminthurus viridis</i>	FCD0GUKACXX:7:1301:17137:108047:3 ¹	TPPNCARCRNHRLKIPLRGHKRYCRFRCTCKQKCILTAERQVRVMAQ	2.0e-14*
Archaeognatha	<i>Lepismachilis y-signata</i>	Contig_383881 ²	APPNCARCRNHRLKVELKGHKRYCKYRYCNCEKRLTADRQVRVMAQ	7.2e-28*
Zygentoma	<i>Thermobia domestica</i>	GASN01365969.1_4/81-127	TPPKCARCRNHRLKIPLKGHKRYCKYRFKCNCDKCLLTAERQVRVMAQ	1.3e-29
Odonata	<i>Calopteryx splendens</i>	GAYM01080693.1_4/36-82	TPPKCARCRNHLYKIPLKGHKRYCKFRYCKCDKCLLTAERQVRVMAQ	1.4e-29
Ephemeroptera	<i>Isonychia bicolor</i>	GAXA01091320.1_6/79-119	TPPKCARCRNHRLKIPLRGHKRYCNRYRYCNCEKCLTADRR-----	1.9e-24
Ephemeroptera	<i>Baetis</i> sp. AD-2013	GATU01010243.1_2/88-133	SNRMCAQCQNHGLKIPVVRGHRKFCFKFRLCNCQNCLLVKERQRIVALH	1.2e-20
Ephemeroptera	<i>Eurylophella</i> sp. AD-2013	GZG01080309.1_5/8-52	ASRLCAFRCRNHSLKIPVKGHRKFCRNRTCNAECKLVREERQVRVALH	1.9e-20
Dermaptera	<i>Apachyus charteceus</i>	GAUW01001274.1_3/14-59	KTPNCARCRNHVYVKIKLKGHKRYCKYRNCRCNKCTLTAERQRIMAAQ	4.8e-28
Dermaptera	<i>Forficula auricularia</i>	GAYQ01017359.1_5/107-152	KAPNCARCRNHLYKMLKGHKRYCKFRYCECSKRLTYERQVRVMAQ	2.3e-27
Plecoptera	<i>Leuctra</i> sp. AD-2013	GAUF01079838.1_5/141-187	TPPKCARCRNHVDKITLKGHRKFCAFRFKCNCEKCLTVERQVRVMAQ	3.0e-27
Plecoptera	<i>Cosmioperla kuna</i>	GAYL01095698.1_6/28-74	TPPNCARCRNHLLKIALKGHKRFCKRYRYCECDKRLTAERQVRVMAQ	3.4e-29
Grylloblattodea	<i>Grylloblatta bifratrilecta</i>	GAWP01142412.1_3/58-104	TPPNCARCRNHRLKIGLKGHKRYCKYRASPDCDKCLLTAERQVRVMAQ	5.4e-29
Grylloblattodea	<i>Galloisiana yuasai</i>	GAWN01171825.1_4/47-93	TPPNCARCRNHRLKIGLKGHKRYCKYRHCCTCDKCLLTAERQVRVMAQ	2.0e-30
Embioptera	<i>Haploembia palaui</i>	GAZA01236824.1_5/84-130	TPPNCARCRNHNFKIGLKGHKRYCRFRSCTCSKCLLTAERQVRVMAQ	3.3e-28
Mantodea	<i>Empusa pennata</i>	GAWT01309511.1_4/111-157	TPPNCARCRNHRLKIGLKGHKRYCKYRYCNCDKCLLTAERQVRVMAQ	2.8e-30
Blattodea	<i>Periplaneta americana</i>	GAWS01015027.1_4/1-44	---NCARCRNHRLKIGLKGHKRYCKYRYCNCDKCLLTAERQVRVMAQ	1.2e-28
Blattodea	<i>Blatella germanica</i> genome	JPZV01136765.1_2/621-668	JPPNCARCRNHRLKIGLKGHKRYCTFRSVCCEKCLLTAERQVRVMAQ	1.7e-15*
Isoptera	<i>Prorhinotermes simplex</i>	GASE01075660.1_4/15-55	KIKYCSKSAHTTKVQIKNHKNKCPFKDCLKDCIPIIVRRDSTALA	7.6e-08
Hemiptera	<i>Xenophysella greensladeae</i>	GAYI01136691.1_3/24-70	TAPNCARCRNHGQKIPLKGHKRYCCFRDCCEMCLLTAKRQKVMALQ	1.7e-27
Hemiptera	<i>Planococcus citri</i>	GAXF01116661.1_1/146-191	TAPNCARCKNHGLKIPLKGHKRYCRFWNCVCEKCVQTSRQKVMARE	1.2e-22
Hemiptera	<i>Planococcus citri</i>	GAXF01103858.1_1/43-88	TPPNCARCKNHGLKNVLSGHKRYCLYLECKCEKCLATVGRQRSMKN	4.9e-20
Hemiptera	<i>Acanthosoma haemorrhoidale</i>	GAUV01009568.1_3/70-108	KVKYCAKCKNHGRKEEMKGHKRECERRHCSQATEKKRAKTRIQ	7.1e-12
Psocodea (Psocoptera)	<i>Ectopsocus briggsi</i>	GAPT01011620.1_2/92-137	KIPYCGRCRNHGIKEVLKGHKHKCIYRDCCTGSCMLSVNRREIAKKQ	8.3e-20
Psocodea (Psocoptera)	<i>Ectopsocus briggsi</i>	GAPT01002163.1_6/155-201	TPPICNRCKVHGVRQSLKGHKRYCRFLTCDLCLVVEKRVVMAQ	4.3e-15
Neuroptera	<i>Pseudomallada prasinus</i>	GAVV01019538.1_2/82-128	TPPNCARCRNHRLKIPLRGHKRYCRFRNCICHKCLLTAERQVRVMAQ	2.2e-28
Neuroptera	<i>Conwentzia psociformis</i>	GAYH01007786.1_3/137-182	APPNCARCRNHRLKIPLKGHKRYCRYKRCSSKCLLTLRQVQDMAQ	3.7e-22
Neuroptera	<i>Euroleon nostras</i>	GAXW01087396.1_4/25-71	TPPNCARCRNHRLKIPLRGHKRYCRFRCTCEKCLLTAERQVRVMAQ	7.1e-29
Coleoptera	<i>Lepicerus</i> sp. AD-2013	GAZB01138597.1_2/45-91	TLPNCARCRNHSLIKEPLKGHKRYCKFKKCCQCEKCLLTAERQVRVMAQ	6.4e-28
Trichoptera	<i>Rhyacophila fasciata</i>	GAXX01046516.1_4/10-56	TPPNCARCRNHGLKIGLKGHKRYCKYRYCTCEKCLLTAERQVRVMAQ	4.8e-31
Trichoptera	<i>Platycentropus radiatus</i>	GASS01092876.1_3/184-204	TPPNCARCRNHRLKIALKGHK-----	4.0e-08
Trichoptera	<i>Hydroptila</i> sp. AD-2013	GAVM01073298.1_1/112-158	TPPNCARCRNHRLKIALKGHKRYCKFRHCNDRCLLTAERQVRVMAQ	3.6e-29
Lepidoptera	<i>Yponomeuta evonymellus</i>	GASG01093141.1_4/23-68	APPNCARCRNHRLKVELKGHKRYCKYRYCNCEKRLTADRQVRVMAQ	3.2e-30
Lepidoptera	<i>Polyommatus icarus</i>	GAST01056365.1_4/55-86	APPNCARCRNHRLKIQLKGHKRYCKYRYCTCEK-----	1.1e-19
Lepidoptera	<i>Dyseriocrania subpurpurella</i>	GASY01015364.1_1/256-302	TPPNCARCRNHQVKVALKGHKRYCRYRYCNCDKRLTADRQVRVMAQ	2.5e-29
Lepidoptera	<i>Trodia sylvina</i>	GAVB01150705.1_2/60-106	TPPNCARCRNHVKEKLGHKRYCKYRYCNCDKCLLTAERQVRVMAQ	1.9e-30
Siphonaptera	<i>Ctenocephalides felis</i>	GAYP01006643.1_1/27-73	TPPNCARCRNHRLKIALKGHKRYCRYLYCKCEKCLLTAERQVRVMAQ	6.6e-29
Mecoptera	<i>Panorpa vulgaris</i>	GAUH01062093.1_3/57-103	TPPNCARCRNHRLKIALKGHKRYCTFKFCNCEKRLTADRQVRVMAQ	1.5e-28
Diptera	<i>Bibio marci</i>	GATJ01056020.1_6/139-184	TQPNCARCRNHCKYVLLKGHKHYCRFRYCKCEKCVVTAQRQDIMANE	2.7e-25

Figure S3

Order	Species	[Accession]_[frame]/[range]	HMM aligned sequence	HMM e-val
Archaeognatha	<i>Meinertellus cundinamarcensis</i>	GAUG01133643.1_3/44-81	-TPKCARCRNHGIVISLKGHKRLCRWRECCPCNQLVVERQRMVMAA	5.6e-15
Blattodea	<i>Periplaneta americana</i>	GAWS01189376.1_5/2-47	-TPKCARCRNHGIVISLKGHKRLCRWRECCPCNQLVVERQRMVMAA	7e-21
Blattodea	<i>Cryptocercus wright</i>	GAZN01162439.1_6/11-56	-RPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.2e-20
Calanoida	<i>Calanus finmarchicus</i>	GAXK01154012.1_1/25-70	-RPFKCARCRNHGIVISLKGHKRSCQYRDCDAKCNLQERQRMVMAA	3.1e-21
Calanoida	<i>Calanus finmarchicus</i>	GAXK01154011.1_1/25-70	-RPFKCARCRNHGIVISLKGHKRSCQYRDCDAKCNLQERQRMVMAA	3.2e-21
Coleoptera	<i>Aleochara curtula</i>	GATW01017006.1_5/27-72	-VFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	4.6e-20
Coleoptera	<i>Ips typographus</i>	GACR01003199.1_2/53-98	-VFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	7.4e-20
Collembola	<i>Tetrodontophora bielanensis</i>	GAXI01024987.1_5/8-53	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	8.8e-21
Collembola	<i>Pogonognathellus sp. AD-2013</i>	GATD01092185.1_3/9-54	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	2.1e-19
Collembola	<i>Anurida maritima</i>	GAUE01052744.1_3/128-173	-APKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.2e-18
Diptera	<i>Culicoides sonorensis</i>	GAWM01017604.1_1/28-73	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	5e-20
Diptera	<i>Trichocera saltator</i>	GAXZ01130618.1_6/9-54	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	2.2e-19
Ephemeroptera	<i>Isonychia bicolor</i>	GAXA01106317.1_1/122-167	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	5e-21
Ephemeroptera	<i>Eurylophella sp. AD-2013</i>	GAZG01012200.1_6/32-77	-SPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	4.7e-20
Grylloblattodea	<i>Galloisiana yuasai</i>	GAWN01063629.1_6/2-47	-RPFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	4.2e-21
Hemiptera	<i>Graminella nigrifrons</i>	GAQX01025711.1_6/87-133	TPPNCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	3.6e-24
Hemiptera	<i>Cercopis vulnerata</i>	GAUN01102337.1_4/98-144	TSPNCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	9.7e-23
Hemiptera	<i>Macrosiphum euphorbiae</i>	GAOM01011235.1_1/7-52	-RPFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	2.4e-19
Hemiptera	<i>Cercopis vulnerata</i>	GAUN01003127.1_4/8-53	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	2.8e-18
Hemiptera	<i>Nilaparvata lugens</i>	GAYF01062266.1_2/4-49	-HPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1e-15
Hemiptera	<i>Acanthosuarina muelleriana</i>	GAYY01137565.1_1/301-346	TLFPNCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	4.4e-16
Hemiptera	<i>Cercopis vulnerata</i>	GAUN01092972.1_3/100-120	-PPNCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.2e-05
Hymenoptera	<i>Ganaspis sp. G1</i>	GAIW01023601.1_3/89-135	TKPNCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.9e-22
Hymenoptera	<i>Ganaspis sp. G1</i>	GAIW01012036.1_5/215-260	-STNCGYCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.5e-20
Hymenoptera	<i>Leptopilina clavipes</i>	GAXY01053312.1_1/30-75	-KPFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.5e-20
Hymenoptera	<i>Stigmatomma oregonense</i>	GAXR01000833.1_2/51-96	-RPFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	4.2e-20
Hymenoptera	<i>Ganaspis sp. G1</i>	GAIW01012035.1_5/481-526	-STNCGYCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	4.7e-20
Hymenoptera	<i>Cotesia vestalis</i>	GAUP01064990.1_1/26-71	-SPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.2e-19
Hymenoptera	<i>Cotesia vestalis</i>	GAUP01004774.1_1/35-80	-RPFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	2e-19
Hymenoptera	<i>Cotesia vestalis</i>	GAGK01004932.1_5/23-68	-SPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	3.1e-19
Hymenoptera	<i>Osmia cornuta</i>	GAGH01047348.1_5/369-414	-RPFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	2.7e-19
Hymenoptera	<i>Mischocyttarus flavitarsis</i>	GAXM01016837.1_6/60-105	-SPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	7.6e-19
Hymenoptera	<i>Sphaerophthalma orestes</i>	GAXP01040437.1_2/70-113	-RPFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1e-19
Hymenoptera	<i>Stigmatomma oregonense</i>	GAXR01010442.1_4/19-64	-SPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.5e-18
Hymenoptera	<i>Orussus abietinus</i>	GAUJ01091006.1_5/57-102	-SPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.7e-18
Hymenoptera	<i>Tenthredo koehleri</i>	GAWW01088411.1_2/215-260	-SPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	3.6e-18
Hymenoptera	<i>Chyphotes mellipes</i>	GAXL01043353.1_1/29-74	-SPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	4.9e-18
Hymenoptera	<i>Pseudomasaris vespoides</i>	GAXQ01011632.1_5/152-197	-SPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	5.3e-18
Hymenoptera	<i>Pseudomasaris vespoides</i>	GAXQ01011634.1_5/152-197	-SPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	5.5e-18
Hymenoptera	<i>Pseudomasaris vespoides</i>	GAXQ01011633.1_6/152-197	-SPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	8.3e-18
Hymenoptera	<i>Pseudomasaris vespoides</i>	GAXQ01011635.1_6/152-197	-SPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	8.5e-18
Hymenoptera	<i>Cotesia vestalis</i>	GAGK01010867.1_5/96-130	-RPFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.3e-13
Isoptera	<i>Mastotermes darwiniensis</i>	GAZE01022571.1_3/6-51	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	3.7e-20
Isoptera	<i>Prorhinotermes simplex</i>	GASE01241946.1_5/28-73	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	5.9e-20
Isoptera	<i>Nasutitermes takasagoensis</i>	G5ZWOJF02FLJZ2_4/133-171	TPPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	6.9e-08*
Lepidoptera	<i>Spodoptera exigua</i>	GARL01010958.1_6/32-77	-VFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	3.8e-20
Lepidoptera	<i>Polyommatus icarus</i>	GAST01022246.1_6/28-73	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.6e-20
Lepidoptera	<i>Athetis lepigone</i>	GARB01040060.1_3/51-96	-VFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	2.4e-19
Lepidoptera	<i>Yponomeuta evonymellus</i>	GASG01107059.1_5/89-129	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	3.2e-16
Mantodea	<i>Metallyticus splendidus</i>	GATB01281539.1_1/31-76	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.7e-20
Mecoptera	<i>Nannochorista philpotti</i>	GADB01005720.1_1/40-85	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	6.9e-19
Mecoptera	<i>Nannochorista philpotti</i>	GADB01001122.1_6/166-211	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	2.8e-19
Mecoptera	<i>Panorpa vulgaris</i>	GAUH01056862.1_5/41-86	-VFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.7e-18
Neuroptera	<i>Conwentzia psociformis</i>	GAYH01081098.1_6/60-105	-VFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	7.6e-20
Neuroptera	<i>Osmylus fulvicephalus</i>	GAYC01008034.1_6/33-78	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	7.2e-18
Orthoptera	<i>Tetrix subulata</i>	GASQ01096846.1_1/5-50	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	3.3e-21
Orthoptera	<i>Ceuthophilus sp. AD-2013</i>	GAUX01271954.1_3/33-78	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	3.7e-20
Orthoptera	<i>Prosarthria teretirostris</i>	GAZT01143051.1_3/24-69	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	4e-19
Orthoptera	<i>Gryllotalpa sp. AD-2013</i>	GAWZ01138841.1_4/2-47	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.8e-14
Phasmatodea	<i>Timema cristinae</i>	GAVX01115626.1_6/41-86	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	6.4e-20
Phthiraptera	<i>Menopon gallinae</i>	GAWR01095172.1_5/146-191	-KPFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	8.5e-20
Phthiraptera	<i>Menopon gallinae</i>	GAWR01093074.1_6/87-132	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	5.7e-19
Plecoptera	<i>Leuctra sp. AD-2013</i>	GAUF01064618.1_6/8-53	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	9.3e-21
Psocoda (Psocoptera)	<i>Liposcelis bostrychophila</i>	GAYV01083169.1_5/23-68	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.5e-20
Raphidioptera	<i>Inocellia crassicornis</i>	GAZH01032725.1_5/40-78	-IPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	9.8e-16
Siphonaptera	<i>Ceratophyllus gallinae</i>	GAWK01044190.1_6/53-98	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	3.8e-20
Siphonostomatoida	<i>Caligus rogercresseyi</i>	GAZX01023775.1_4/32-77	-RPFKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	5.8e-20
Thysanoptera	<i>Thrips palmi</i>	GAXC01041671.1_5/35-80	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	2.1e-20
Trichoptera	<i>Rhyacophila fasciata</i>	GAXX01069925.1_6/105-138	-EPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	4.1e-12
Zygentoma	<i>Occasjapyx japonicas</i>	GAXJ01053929.1_3/25-69	--PKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	3.4e-21
Zygentoma	<i>Tricholepidion gertschi</i>	GASO01237223.1_5/12-57	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	7.4e-20
Zygentoma	<i>Occasjapyx japonicas</i>	GAXJ01108043.1_3/66-111	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	1.3e-19
Zoraptera	<i>Zorotypus caudelli</i>	GAYA01373377.1_2/34-79	-TPKCARCRNHGIVISLKGHKRQCRFKSCVCAKCNLTAERQRMVMAA	5e-20

Figure S4

Order	Species	NCBI accession	Sequence	HMM e-val
Protura	<i>Acerentomon sp. AD2013</i>	GAXE01016537_1	AATLIFQQRLEHLLNKFKLPVESLPAIYAVLKDAKGCVEEASERLMAAYEELHEISVRLGLL	9.8e-14
Collembola	<i>Anurida maritima</i>	GAUE01011497_6	MSVDGMKESLHALLEMFRFPLESPLVYRILKDYRADFRLLASSKIMEAQTELRSALLEAAR	2.7e-17
Collembola	<i>Pogonognathellus sp. AD-2013</i>	GATD01095902_2	GAEPLVDGMKESLQTLMDMFPNPLPLVYLILKDSRADFKLASTRILEAQBELRSIALREAR	7.8e-11
Collembola	<i>Orchesella cincta</i>	GAMM01004046_1	TAIDEMKESVKALMEMFRLPSETDPLIYRILKDYRGDFPKQASAKIFEAQCELRSWELLREAA	8.6e-12
Diplura	<i>Occasjapyx japonicus</i>	GAXJ01108506_1	DNVEEVNQALKVILKLFHLPDESCHLLVWVILKDAKGLMLASSRIMEAQSELRSMAFQDVTR	1.7e-15
Archaeognatha	<i>Meinertellus cundinamarcensis</i>	GAUG01186505_6	ENVENVKESVYGLMDRFRLPSECLPLLYVILKDAKDFDIKEAANRIVDAQDLHAVTLREAQY	1.6e-20
Archaeognatha	<i>Lepismachilis y-signata</i>	Contig_336923 ¹	VSLETLVENCNKLEKFKHFSWEMMPLVLVILNYAGSDLEASRKIDEGQWRSQTFCCAAN*-	5.6e-27*
Zygentoma	<i>Tricholepidion gertschi</i>	GASO01035827_5	EEGDVMMESLHALLEMFLPLETLPLIYVVLKDARS DVKEASNRI IEAQSELRSIF-----	3.3e-23
Zygentoma	<i>Thermobia domestica</i>	GASN01345779_5	ENVELLKDSLHALLDLDFRPLPLETLPLIYVVLKDARS DVKEASNRI IEGVYQCMNQGI IAPIG	2.4e-22
Odonata	<i>Calopteryx splendens</i>	GAYM01004193_6	DNMNF IKDAILALLQMFRLPVELPLIYAILQGARC DVKEATNQIQNAQEH LRAMALRMMYP	1.1e-19
Ephemeroptera	<i>Isonychia bicolor</i>	GAXA01058460_2	DNIDSLRDSIQTLTLDTRFLRPMETLPLVYVVLKVSRS DVQEA FNRI SEG GYHMTSSDVPVAAA	1.2e-20
Plecoptera	<i>Leuctra sp. AD2013</i>	GAUF01067748_5	DGHEVPFESIRKLLERFRLPSEAQLLLAILKNSDYDSNEASKQIEIGGYNSSHPQ GK AISV	2.0e-14
Plecoptera	<i>Perla marginata</i>	GATV01133007_4	PYPDVHLGSI AKLIDMCHLSPETQPLILAILKLSKFDVKEAYKQIMAGGYFNKNCTSN---	3.6e-10
Mantophasmatodea	<i>Tanzaniophasma sp. AD2013</i>	GAXB01144312_2	ENMDGLREAIHTLLKIFQLPLETLPLLYVVLKDARSDFTEAYNRIVEARNELETLARREAAC	6.6e-20
Grylloblattodea	<i>Galloisiana yuasai</i>	GAWN01150275_2	DHGKLLWESI QALREMFHLSQSDVPLIFLVLFNSHFDVMEASIRIKEGMFVI IEYLVGTCIV	2.3e-15
Phasmatodea	<i>Aretaon asperrimus</i>	GAWC01030481_5	VSVEAMMDGVYTL LHM FHYHVEMLP LLLVVLSDAHCDVSEAYNRILQVLGNHLD SVLPVTSS	4.3e-18
Phasmatodea	<i>Ramulus artemis</i>	GAWE01101272_2	VSVEAMMDGVYTL LHM FHYHVEMLP LLLVVLSDAHCDVTEAYNRILQCECAA-----	1.5e-18
Blattodea	<i>Blaberus atropos</i>	GAYD01026473_5	ESLEVTLQSMHYLMNTFRMPLEALPLVYVVLQLSHSDVSEATARI IKGSYST-----	6.0e-16
Blattodea	<i>Periplaneta americana</i>	GAWS01246226_6	-----QMLLEMFRFPVALPLIYVVLQVVSQSDVNVA YNR I IQAQEQLRSMALREAR	1.6e-15
Blattodea	<i>Blatella germanica genome</i>	JPZV01136787_1	ENQEVPLQSMQYLMDFFRMPMEALPLIYVVLQLSHSDVKEA TRI IKGSYSNVIFHI*-----	6.3e-06*
Thysanoptera	<i>Frankliniella occidentalis</i>	GAXD01013559_1	ENGRVHRESIQRLVEKFNFPVALPLIYVVLKDHGSDYEVKN-----	1.1e-12
Thysanoptera	<i>Frankliniella cephalica</i>	GAYE01005232_5	ENGRVHRESIQRLVEKFNFPVALPLIYVVLKDHGSDYEVKNL LLEAASELDETSYNQERR	6.3e-16
Thysanoptera	<i>Thrips palmi</i>	GAXC01002564_6	ENGRVHRESIQRLVEKFNFPVALPLIYVVLKDHGSDYEVKNL LLEAASELDQSGFNQERG	1.4e-14
Thysanoptera	<i>Gynaikothrips ficorum</i>	GAXG01131335_3	-NERVPWQSTMRL LQMFNF PENALPLIYVVLADHKADEKVMALLEDEGF*-----	3.1e-07
Megaloptera	<i>Sialis lutaria</i>	GABK01005713_2	HSLDVVLERCTRLTLDTRFMYPWEMMPLMYVILKYAGGNIDEA IRS IREGKRVVNEYSRIHNLN	8.4e-25
Megaloptera	<i>Corydalinae sp. KMRSBPM-2012</i>	GADH01041729_2	-NIELILECCHRLTLDTRFLYPWELMPLMYVILKYAGGNLDEA IRS IREGKRVVNEYSRTHNLN	2.1e-24
Strepsiptera	<i>Mengenilla moldrzyki</i>	JP085896_4	NETERILDNSKLLLETFKFHSEMPLMYVILKDATDIRKATRIDEGWQVVNEYSIKNNLN	5.7e-22*
Strepsiptera	<i>Stylops melittae</i>	GAZM01003845_3	-----FXQKLMEIYKYPYEMMPLMYAILKSVNDFIEAQTRIDEGHQVVSDFLRKHNLN	3.0e-16
Coleoptera	<i>Meloe violaceus</i>	GATA01002860_6	RGAENLLEFCQRLKDKFQLSWKMSLVDVILKYAKEDQEAWRQIDEAFLEIRALAAVEAAR	2.3e-08
Coleoptera	<i>Meloe violaceus</i>	GATA01002861_6	RGAENLLEFCQRLKDKFQLSWKMSLVDVILKYAKEDQEAWRQIDEAFLEIRALAAVEAAR	2.4e-08
Coleoptera	<i>Dendroctonus ponderosae</i>	GAFX01005311_3	DRSMDLLEDCHKLEKFKHYPYEMMPLMYAILKDKARADLEASRRIDEGKQVVNEYSRTHNLN	1.9e-25
Coleoptera	<i>Onthophagus nigriventris</i>	GAQW01004722_2	IGQKDLIQESLQLEKFRYSWEMMPLIYAI VKDTPD-LEEASKRI DEGKDAEQLVDFLIK*-	3.1e-14
Coleoptera	<i>Onthophagus nigriventris</i>	GAQW01004722_1	*RR*TTSGFPNKIKDRFHL SWKMSL I HVILKNAKDDQEKAFRQIDEAFLEVQALAKYYPTP	5.9e-05
Trichoptera	<i>Hydroptila sp. AD2013</i>	GAVM01009688_4	ALMESILENCYILLERFNYSFEMMPLIYAILKATHIDIDEASRRIDEGQTFYLYVKDVMTAA	1.3e-19
Trichoptera	<i>Platycentropus radiatus</i>	GASS01085500_2	ASLETLHENCHKLEKFKHYSWEMMPLMYAILKDAHSDLEASRRIDEGKQVINEYARQNNLN	9.9e-29
Lepidoptera	<i>Dyseriocrania subpurpurella</i>	GASY01001893_6	TSLETLVENCQKLLKFKHFSWEMMPLVYAI VKHAQSNLDEASQRIEEALSTSIGHYERPLTT	2.2e-16
Lepidoptera	<i>Dyseriocrania subpurpurella</i>	GASY01001894_6	TSLETLVENCQKLLKFKHFSWEMMPLVYAI VKHAQSNLDEASQRIEEGYHFSHYHYHTLLRE	7.1e-18
Lepidoptera	<i>Polyommatus icarus</i>	GAST01019581_4	VSLESVLENCCHKLEKFKHYSWEMMPLVLVILNYAGSNIDEASRKIDEDVKHVVCHE-----	3.4e-19
Lepidoptera	<i>Yponomeuta evonymellus</i>	GASG01061525_3	-----LVENCNKLEKFKHYSWEMMPLVLVILNYAGSDLEASRKIDEGKMRVDEYARKHNLN	1.4e-22
Lepidoptera	<i>Empusa pennata</i>	GAWT01314774_6	ENIAVSRESILELDRFRLPWETLPLIYVVLDDARCDVNEASKRI LKGCYAKANDKVI VNAI	2.1e-17
Siphonaptera	<i>Ctenocephalides felis</i>	GAYP01008256_1	EKVAALLEESQI VEQ LKYPFEMLPFVYAILGLSGG-ISEAIKNIHNGQLVVSEYSRMMNLN	1.6e-15
Mecoptera	<i>Bittacus pilicornis</i>	GATH01002938_5	SEVNL LLDHCQKILEKFNYPFEMMPLIYAILK DAGD-IEASRRIDEGFLVYERLREETRIM	1.1e-20
Mecoptera	<i>Boreus hyemalis</i>	GAYK01015512_3	YSDKVVF DLSQKLEKFNYPFEMMPLIYANLKYAGS-IDE-----	3.6e-10
Mecoptera	<i>Boreus hyemalis</i>	GAYK01017535_4	YFDKVVFDLSPKLLKFNCP IEMMPLIYANLRYADN-IDEASRRIEEDILRITYGRYHLVNL	7.4e-10
Diptera	<i>Bombylius major</i>	GATI01007471_5	QKAERLLEYCQKLEKFRYSWKMMPVYAILKDKARADVEASRRIDEAIRVVRPLTLHLRYP	2.0e-20
Diptera	<i>Bibio marci</i>	GATJ01028801_1	--VDVLECS TKLEL FQYPWEMLPLMYVIVK DAGLNLEAVRRIVEANNDIRALYFWKAVR	1.8e-19
Diptera	<i>Bibio marci</i>	GATJ01051986_1	LDDTAVVDHCQTILKRYDYPGEMLPLIYAI VQYCPN-LEEAIRRIDEGYRFYLLYTKLNSQV	3.7e-11

Figure S5

<i>Atelura formicaria</i>	GAYJ01004010*	ARERMLYESLVMMRQAFPVGEEAMPLLLCILKHSRS-VQEASLKIYQGHYDLNAKGFVGLDG	Zygentoma
<i>Thermobia domestica</i>	GASN01031735*	ARERMLYESLLVMRQAFPVGEEAMALLLCILKHSRS-VQEASWKIYQGTYDLTSRGFVGLDN	Zygentoma
<i>Tricholepidion gertschi</i>	GASO01256612*	EREQMLYESLMVMRQAFPVGEEAMPLLLCILKHSRS-VQEASWKICQGTDRDLSARGIIGIEN	Zygentoma
<i>Ephemera danica</i>	GAUK01006643*	TREERMLYESLMQLRQLYPVPEASLPLLLCILKSSRS-IDEASAKIVQGTHELSTRGFPGIEA	Ephemeroptera
<i>Isonychia bicolor</i>	GAXA01111429*	TREERMLYESLLELRQSFVPVPEAGLPLLLCILKSSRS-VHEASAKIVQGTHTDLSGLLGLDG	Ephemeroptera
<i>Baetis sp. AD-2013</i>	GATU01002143*	QRKNLMYSSLLELRSHHPVPDAALPLLLCILNISNS-VKEASEKIQKGLQELSLAAASSNEL	Ephemeroptera
<i>Atelura formicaria</i>	FCD0KP1ACXX_7_2202_17946_4233_6 ¹	-----KESLQTLDMFRLPMETLPLIYVVLKDARSDVKEASNRIIEGGYWIMTQMAA-----	Zygentoma
<i>Thermobia domestica</i>	GASN01345779	ENVLLKDSLHALLDMFRLPLETLPLIYVVLKDARSDVKEASNRIIEAGVYQCMNQGIAPIG	Zygentoma
<i>Tricholepidion gertschi</i>	GASO01035827	EEGDVMMESLHALLEMFQLPLETLPLIYVVLKDARSDVKEASNRIIEAQSELRSIF-----	Zygentoma
<i>Isonychia bicolor</i>	GAXA01058460	DNIDSLRDSIQTLDTFRLPMETLPLVYVVLKVSRSDVQEAFNRRISEGGYHMTSSDVPVAAA	Ephemeroptera

* - high-confidence EST contig
¹ - transcriptome sequencing read obtained from SRA accession SRR921568

Figure S6

>Sipyloidea_sipylus_contig22122
CTGTCCC GCGGAAGAAGGGGAGGGCCCCGGCTTGGGGCTTGCTTGCCTGCCACTTACTTGCCTCGCGGGCGGGCAGTGAGTGCCGCGCGA
ACAAGAGTGCGTCACAAAACACCCGGTTAACCTCAAATCAACAAAACACAGCTTTAGCCGCGCGCGCATGTGCGGACACCGACACCAGCAC
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GCAGGTGGCAGCCGTCACCGCCTCCGGCGTATCACCTCCACCGCCGCCGTTATCCTTGCATGCTGCTGCAGGTACGTGCTCGCCGCCGCC
GCTGCAGCCTACGTGCTCGCCCCGCTCGCTCGGCCGACGGCAGCTGTGACTCGTCGTCATCGTCTCCGTGCTCGGCTAGGGTAATCTC
CGTGCCGGCGCCTCGTAAAGCGATGGCACCCGTGCACCCACCTGACATCGCCGCCTCCACGGGGATGAGCGTGGATGCCATGATGGACGG
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GAATGCCAAGGAAGAGGTGATAGCGATGGGGCGGGCGGGAGGCGGCGGATGATGCAGTACCATCCGGCGGGCGGGCGACCTACGGTGG
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>Lepismachilis_y-signata_contig_383881
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>Lepismachilis_y-signata_contig_336923
CCTTCATCTATCTTCCGTGACGCCTCATCCAGGTCGCTCCCCGCATAGTTGAGGATCACCAGGACTAAGGGCATCATCTCCAGGAGTAG
TGGAACCTTCTCCAGGAGTTTGTGTCAGTTTTCAACCAGCGTCTCGAGGGATAACAGGCTGTTGTGGCGGGGGAAGCGGGGGCACGGGTGGG
GGGGGGCAGAGGGCGGGGGGGCCGCGGACGGGGGCACCACCCGCG

Supplementary Figure Captions

Supplementary Figure S1. High-confidence *doublesex* transcripts reported in this study. Highly conserved amino acid positions are in red text. The conserved Lysine residue characteristic of the *dsx* DM domain (OD1, see Results and Discussion) is highlighted in yellow. Deviations from the canonical Cys-His zinc finger motif are highlighted in blue. Also included are OD2-encoding singleton domains recovered for taxa that possessed a high-confidence EST, to illustrate evidence for putative *dsx* paralogy.

Supplementary Figure S2. All type-A OD1-encoding singletons recovered in our analyses. Highly conserved amino acid positions are in red text. The conserved Lysine residue characteristic of the Type-A *dsx* DM domain (OD1, see Results and Discussion) is highlighted in yellow. E-values were calculated against our profile HMM using HMMer v3.1; asterisks indicate e-value was calculated via NCBI Conserved Domain Database search.

Supplementary Figure S3. All type-B OD1-encoding singletons recovered in our analyses. Highly conserved amino acid positions are in red text. The conserved Isoleucine residue characteristic of the Type-B *dsx-like* DM domain (OD1, see Results and Discussion) is highlighted in yellow. E-values were calculated against our profile HMM using HMMer v3.1; asterisks indicate e-value was calculated via NCBI Conserved Domain Database search.

Supplementary Figure S4. All dimerization (OD2) domain-encoding singletons recovered in our analyses. Highly conserved amino acid positions are in red text. E-values were calculated against our profile HMM using HMMer v3.1; asterisks indicate e-value was calculated via NCBI Conserved Domain Database search.

Supplementary Figure S5. Alignment of both putative *doublesex* transcripts from each of the Zygentoma and Ephemeroptera species reported in this study. The high-confidence ESTs (black text) share similarity with each other, while the alternate motif (red text) segregates.

Supplementary Figure S6. De-novo assembled contigs referenced in this study.