

1 Appendix 3: References Used for Determining Traits at Genus and Family Level

- 2 Allaby, M. (2014). *A Dictionary of Zoology*. – Oxford University Press, Oxford.
3
- 4 Arango, R.A. (2016). Beetles (Coleoptera) of Peru: a survey of the families. Ptinidae Latreille,
5 1802. *Journal of the Kansas Entomological Society*, 89(3), 249-252. doi: 10.2317/0022-
6 8567-89.3.249
7
- 8 Balke, M., Wewalka, G., Alarie, Y. & Ribera, I. (2006). Molecular phylogeny of Pacific island
9 Colymbetinae: radiation of New Caledonian and Fijian species (Coleoptera, Dytiscidae).
10 *Zoologica Scripta*, 36(2), 173-200. doi:10.1111/j.1463-6409.2006.00265.x
11
- 12 Ball, O.J.P., Gwinn, K.D., Pless, C.D. & Popay, A.J. (2011). Endophyte isolate and host grass
13 effects on *Chaetocnema pulicaria* (Coleoptera: Chrysomelidae) feeding. (2011). *Journal*
14 *of Economic Entomology*, 104(2), 665-672. doi:10.1603/EC10262
15
- 16 Beran, F., Pauchet, Y., Kunert, G., Reichelt, M., Wielsch, N., Vogel, H., Reinecke, A., Svatos, A.,
17 Mewis, I., Schmid, D., Ramasamy, S., Ulrichs, C., Hansson, B.S., Gershenson, J. &
18 Heckel, D.G. (2014). *Phyllotreta striolata* flea beetles use host plant defense compounds
19 to create their own glucosinolate-myrosinase system. *Proceedings of the National*
20 *Academy of Sciences of the United States*, 111(20), 7349-7354.
21 doi:10.1073/pnas.1321781111
22
- 23 Berthiaume, R., Hebert, C. & Cloutier, C. (2012). *Podabrus rugosulus* (Coleoptera:
24 Cantharidae), an opportunist predator of *Mindarus abietinus* (Hemiptera: Aphididae) in
25 Christmas tree plantations. *The Canadian Entomologist*, 133(1), 151-154. doi:
26 10.4039/Ent133151-1
27
- 28 Bilton, D.T., Hayward, J.W.G., Rocha, J. & Foster, G.N. (2016). Sexual dimorphism and sexual
29 conflict in the diving beetle *Agabus uliginosus* (L.) (Coleoptera: Dytiscidae). *Biological*
30 *Journal of the Linnean Society*, 119(4), 1089-1095. doi:10.1111/bij.12850
31
- 32 Brown, H.P. (2008). Riffle beetles (Coleoptera: Elmidae). In J. L. Capinera, *Encyclopedia of*
33 *Entomology*. Retrieved from Gale Virtual Reference Library.
34
- 35 Buss, B.C., Moussallem, M. & Caron, E. (2018). Rediscovery and new subgenus assignment of
36 *Aleochara repetita* Sharp (Coleoptera: Staphylinidae: Aleocharinae). *The Coleopterists*
37 *Bulletin*, 72(4), 702-706. doi: 10.1649/0010-065X-72.4.702
38
- 39 Capogreco, J.V. (1989). Immature *Lebia viridis* Say (Coleoptera:Carabidae): bionomics,
40 descriptions, and comparisons to other *Lebia* species. *The Coleopterists Bulletin*, 43(2),
41 183-194. doi: stable/4008635
42
- 43 Chandra, G., Mandal, S.K., Ghosh, A.K., Das, D., Banerjee, S.S. & Chakraborty, S. (2008).
44 Biocontrol of larval mosquitoes by *Acilius sulcatus* (Coleoptera: Dytiscidae). *BMC*
45 *Infectious Diseases*, 8(1), 138. doi:10.1186/1471-2334-8-138

46
47 Chernov, Y.I., Makarova, O.L., Penev, L.D. & Khruleva, O.A. (2014). Beetles (Insecta,
48 Coleoptera) in the Arctic fauna: communication 1. Faunal composition. *Entomological*
49 *Review*, 94(4), 438-441. doi:10.1134/S0013873814040022
50
51 Coyle, D.R., Allred, A.M., Kosola, K.R. & Raffa, K.F. (2010). Altered GAI activity of hybrid
52 aspen has minimal effects on the performance of a polyphagous weevil, *Polydrusus*
53 *sericeus*. *Entomologia Experimentalis et Applicata*, 138(2), 104-109. doi:10.1111/j.1570-
54 7458.2010.01079.x
55
56 Cuthbertson, A.G.S. (2015). Chemical and ecological control methods for *Epitrix* spp. *Global*
57 *Journal of Environmental Science and Management*, 1(1), 95-97. doi:
58 10.7508/gjesm.2015.01.008
59
60 Drees, C., Brandmayr, P., Buse, J., Dieker, P., Gurlich, S., Habel, J., Harry, I., Hardtle, W.,
61 Matern, A., Meyer, H., Pizzolotto, R., Quante, M., Schafer, K., Schuldt, A., Taboada, A.
62 & Assmann, T. (2011). Poleward range expansion without a southern contraction in the
63 ground beetle *Agonum viridicupreum* (Coleoptera, Carabidae). *ZooKeys*, 100, 333-352.
64 doi:10.3897/zookeys.100.1535
65
66 Drotz, M.K., Brodin, T., Saura, A. & Giles, B.E. (2012). Ecotype differentiation in the face of
67 gene flow within the diving beetle *Agabus bipustulatus* (Linnaeus, 1767) in Northern
68 Scandinavia. *PLoS ONE*, 7(2), e31381. doi:10.1371/journal.pone.0031381
69
70 Du, J., Andreassen, L.D. & Holliday, N.J. (2017). Behavioural responses to dimethyl disulphide
71 by *Aleochara bilineata* and *Aleochara bipustulata*. *Physiological Entomology*, 43(1), 20-
72 29. doi: 10.1111/phen.12221
73
74 Dubois, T., Hajek, A.E. & Smith, S. (2002). Methods for rearing the Asian longhorned beetle
75 (Coleoptera:Cerambycidae) on artificial diet. *Annals of the Entomological Society of*
76 *America*, 95(2), 223-230. doi: 10.1043/0013-8746(2002)095(0223:MFRTAL)2.0.CO2
77
78 Elliot, J.M. (2008). The ecology of riffle beetles (Coleoptera: Elmidae). *Freshwater Reviews*,
79 1(2), 189-203. doi: 10.1608/FRJ-1.2.4
80
81 Elshayeb, M. (2006). *Determining food web impacts on experimental aquatic systems from the*
82 *disposal of oil sands process-affected waste materials*. Msc Thesis, University of
83 Waterloo, Waterloo.
84
85 Eyre, D. & Giltrap, N. (2012). *Epitrix* flea beetles: new threats to potato production in Europe.
86 *Pest Management Science*, 69(1), 3-6. doi:10.1002/ps.3423
87
88 Fender, K.M. (1973). Ecological notes on *Podabrus* (Coleoptera: Cantharidae). *The*
89 *Coleopterists Bulletin*, 27(1), 11-17. doi: stable/3999623
90

- 91 Figueroa-Castro, P., Lopez-Martinez, V., Toledo-Hernandez, V.H. & Rifkind, J. (2017). First
92 report of the entomophagous *Enoclerus zonatus* (Coleoptera: Cleridae) associated with
93 stalks of the mezcal maguey in Guerrero, Mexico. *Revista Mexicana de Biodiversidad*,
94 88(2), 467-470. doi: 10.1016/j.rmb.2017.03.025
95
- 96 Garcia, M., Farinos, G.P., Castanera, P. & Ortego, F. (2012). Digestion, growth and reproductive
97 performance of the zoophytophagous rove beetle *Philonthus quisquiliarius* (Coleoptera:
98 Staphylinidae) fed on animal and plant based diets. *Journal of Insect Physiology*, 58(10),
99 1334-1342. doi: 10.1016/j.jinsphys.2012.07.007
100
- 101 Gusarov, V.I. (2018). Phylogeny of the family Staphylinidae based molecular data: a review. In
102 Betz, O., Irmeler, U. & Klimaszewski, J. (Eds.), *Biology of rove beetles (Staphylinidae):*
103 *Life history, evolution, ecology and distribution* (pp. 7-25). Springer International
104 Publishing, Switzerland
105
- 106 Heinrich, B. & Vogt, F.D. (1980). Aggregation and foraging behavior of whirligig beetles
107 (Gyrinidae). *Behavioural Ecology and Sociobiology*, 7(3), 179-186.
108 doi:10.1007/BF00299362
109
- 110 Herbst, C., Baier, B., Tolasch, T. & Steidle, J.L.M. (2010). Demonstration of sex pheromones
111 diving beetle *Rhantus suturalis* (MacLeay 1825) (Dytiscidae). *Chemoecology*, 21(3), 19-
112 32. doi:10.1007/s00049-010-0061-3
113
- 114 Hernandez-Juarez, A., Aguirre, L.A., Cerna, E., Landeros, J., Frias, G.A., Flores, M. & Ochoa,
115 Y.M. (2018). Effect of transgenic maize on abundance of the corn flea beetle,
116 *Chaetocnema pulicaria* Melsheimer, as a non-target pest. *Southwestern Entomologist*,
117 43(4), 841-846. doi: 10.3958/059.043.0403
118
- 119 Hicks, B.J. (1994). Foregut contents of adult *Ilybius* Erichson (Coleoptera: Dytiscidae) from
120 Newfoundland. *The Coleopterists Bulletin*, 48(2), 199-200. ISSN: 0010-065X
121
- 122 Hicks, B.J. & Larson, D.J. (1995). Life history patterns of *Ilybius* Erichson from Newfoundland
123 (Coleoptera: Dytiscidae). *The Coleopterists Bulletin*, 49(3), 281-287. ISSN 0010065X
124
- 125 Hojland, D.H., Nauen, R., Foster, S.P., Williamson, M.S. & Kristensen, M. (2015). Incidence,
126 spread and mechanisms of pyrethroid resistance in European populations of the cabbage
127 stem flea beetle, *Psylliodes chrysocephala* L. (Coleoptera: Chrysomelidae). *PLoS One*,
128 10(12), e0146045. doi: 10.1371/journal.pone.0146045
129
- 130 Hunting, W.M. (2013). A taxonomic revision of the *Cymindis* (*Pinacodera*) *limbata* species
131 group (Coleoptera, Carabidae, Lebiini), including description of a new species from
132 Florida, USA. *ZooKeys*, 260, 1-73. doi:10.3897/zookeys.259.2970
133
- 134 Jia, L-P. & Liang, A-P. (2014). An apposition-like compound eye with a layered rhabdom in the
135 small diving beetle *Agabus japonicus* (Coleoptera, Dytiscidae). *Journal of Morphology*,
136 275(11), 1273-1283. doi:10.1002/jmor.20300

137
138 Karlsson, A.-K.B., Henrikson, B.-I., Harlin, C., Ivarsson, P., Stenson, J.A.E. & Svensson, B.W.
139 (1999). The possible role of volatile secretions as intra- and interspecific alarm signals in
140 *Gyrinus* species. *Oikos*, 87(2), 220-227. doi:10.2307/3546737
141
142 Karns, K. & Behrendt, M. (2015). *Lordithon* Thomson, 1859 (Coleoptera: Staphylinidae:
143 Tachyporinae) recorded in Southeastern Ohio, USA, with notes on four rarely collected
144 species including the black *Lordithon* rove beetle, *Lordithon niger* (Gravenhorst). *The*
145 *Coleopterists Bulletin*, 69(1), 118-120. doi:10.1649/0010-065X-69.1.118
146
147 Kelley, S.T. & Dobler, S. (2011). Comparative analysis of microbial diversity in *Longitarsus* flea
148 beetles (Coleoptera: Chrysomelidae). *Genetica*, 139(5), 541-550. doi:10.1007/s10709-
149 010-9498-0
150
151 Keszthelyi, S. (2012). Evaluation of flight phenology and number of generations of the four-
152 spotted sap beetle, *Glischrochilus quadrisignatus* in Europe. *Bulletin of Insectology*,
153 65(1), 9-16. ISSN 1721-8861
154
155 Kyneb, A. & Toft, S. (2006). Effects of maternal diet quality on offspring performance in the
156 rove beetle *Tachyporus hypnorum*. *Ecological Entomology*, 31(4), 322-330. doi:
157 10.1111/j.1365-2311.2006.00775.x
158
159 Lawrence, J.F., Hastings, A.M., Dallwitz, M.J., Paine, T.A. & Zurcher, E.J. (2018). *Throscidae*.
160 Elateriformia (Coleoptera). Delta-intkey.com
161
162 Leschen, R.A.B. & Beutel, R.G. (2000). Pseudotracheal tubes, larval head, and mycophagy in
163 *Sepedophilus* (Coleoptera: Staphylinidae: Tachyporinae). *Journal of Zoological*
164 *Systematics and Evolutionary Research*, 39(1-2), 25-35. doi: 10.1046/j.1439-
165 0469.2001.00149.x
166
167 Lin, H. & Phelan, P.L. (1991). Identification of food volatiles attractive to *Glischrochilus*
168 *quadrisignatus* and *Glischrochilus fasciatus* (Coleoptera: Nitidulidae). *Journal of*
169 *Chemical Ecology*, 17(12), 2469-2480. doi:10.1007/BF00994595
170
171 Lloyd, J.E. (2008). Fireflies (Coleoptera: Lampyridae). In J. L. Capinera, *Encyclopedia of*
172 *Entomology*. Retrieved from Gale Virtual Reference Library.
173
174 Lyubarsky, G. & Perkovsky, E. (2011). New species of *Stilbus* (Coleoptera, Clavicornia,
175 Phalacridae) from the Late Eocene Rovno Amber. *Vestnik Zoologii*, 45(2), e-47. doi:
176 10.2478/v10058-011-0012-7
177
178 Majka, C.G. & Langor, D. (2008). The Leiodidae (Coleoptera) of Atlantic Canada: new records,
179 faunal composition, and zoogeography. *ZooKeys*, 2, 357-402. doi: 10.3897/zookeys.2.56
180

- 181 Majka, C.G. & Pollock, D.A. (2006). Understanding saproxylic beetles: new records of
182 Tetratomidae, Melandryidae, Synchronidae, and Scaptiidae from the maritime provinces
183 of Canada (Coleoptera: Tenebrionidae). *Zootaxa*, 1248, 45-68. ISSN 1175-5334
184
- 185 Marshall, S. (2006). *Insects: their natural history and diversity: with a photographic guide to*
186 *insects of eastern North America*. Firefly Books, New York.
187
- 188 Ming, Q-L & Lewis, S.M. (2010). Pheromone production by male *Tribolium castaneum*
189 (Coleoptera: Tenebrionidae) is influenced by diet quality. *Journal of Economic*
190 *Entomology*, 103(5), 1915-1919. doi:10.1603/EC10110
191
- 192 Morales-Ramos, J.A., Rojas, M.G., Shapiro-Ilan, D.I. & Tedders, W.L. (2011). Self-selection of
193 two diet components by *Tenebrio molitor* (Coleoptera: Tenebrionidae) larvae and its
194 impact on fitness. *Environmental entomology*, 40(5), 1285-1294. doi: 10.1603/EN10239
195
- 196 Muona, J., Lawrence, J.F. & Slipinski, A. (2010). Throscidae Laporte, 1840. In R.G. Beutel, J.F.
197 Lawrence & R.A.B. Leschen (Eds), *Handbook of Zoology* (pp.69-74). De Gruyter,
198 Berlin.
199
- 200 Odnosum, V. & Litvin, O. (2009). Description of *Mordellistena parvuliformis* larva (Coleoptera,
201 Mordellidae). *Vestnik Zoologii*, 43(6), e-18. doi:10.2478/v10058-009-0023-9
202
- 203 Orfinger, A.B. & Kelly, S.L. (2017). *Tachyporus nitidulus* (Fabricius, 1781) (Coleoptera,
204 Staphylinidae, Tachyporinae): first record from the state of Florida, USA. *Check List*,
205 13(6), 921-923. doi: 10.15560/13.6.921
206
- 207 Otero, J.C. & Lopez, M.J. (2011). A new species of *Cryptophagus herbst* (Coleoptera:
208 Cryptophagidae) from the Iberian Peninsula. *The Coleopterist Bulletin*, 65(2), 185-188.
209 ISSN 0010065X
210
- 211 Ortuno, V.M. & Arribas, O. (2018). A revision of the *Cymindis ehlersi* complex (Coleoptera:
212 Carabidae: Lebiinae) with description of a new species and ecological notes.
213 *Zoologischer Anzeiger*, 276, 1-14. doi:10.1016/j.jcz.2018.05.002
214
- 215 Otto, R.L. (2017). Beetles of Peru: a survey of the families. Eucnemidae Eschscholtz, 1829.
216 *Revista Peruana de Biología*, 24(1), 11-24. doi: 10.15381/rpb.v24i1.13107
217
- 218 Pan, P., Yang, X., Siegfried, B.D. & Zhou, X. (2015). A comprehensive selection of reference
219 genes for RT-qPCR analysis in a predatory lady beetle, *Hippodamia convergens*
220 (Coleoptera: Coccinellidae). *PLoS ONE*, 10(4), e0125868. doi:
221 10.1371/journal.pone.0125868
222
- 223 Peck, S.B. & Newton, A.F. (2017). An annotated catalog of the Leiodidae (Coleoptera) of the
224 Nearctic region (Continental North America North of Mexico). *The Coleopterists*
225 *Bulletin*, 71(2), 211-258. doi: 10.1649/0010-065X-71.2.211
226

227 Pinski, R.A., Mattson, W.J. & Raffa, K.F. (2005). Host breadth and ovipositional behavior of
228 adult *Polydrusus sericeus* and *Phyllobius oblongus* (Coleoptera: Curculionidae),
229 nonindigenous inhabitants of northern hardwood forests. *Environmental Entomology*,
230 34(1), 148-157. doi:10.1603/0046-225X-34.1148
231

232 Rees, D.P. & Rangsi, V. (2004). *Insects of stored products*. CSIRO Publishing, Victoria.
233

234 Rodriguez-del-Bosque, L.A. (2013). Feeding and survival of *Oncideres pustulata* (Coleoptera:
235 Cerambycidae) adults on *Acacia farnesiana* and *Leucaena leucocephala* (Fabaceae). –
236 *Southwest Entomologist*, 38(3), 487-498. doi: 10.3958/059.038.0311
237

238 “Scarab beetle”. (2020). In The Editors of Encyclopedia Britannica (Ed), *Encyclopaedia*
239 *Britannica*. Retrieved from Britannica.com.
240

241 Selnekovic, D. & Kodada, J. (2019). Taxonomic revision of *Mordellistena hirtipes* species
242 complex with new distribution records (Insecta, Coleoptera, Mordellidae). *ZooKeys*, 854,
243 89-118. doi:10.3897/zookeys.854.32299
244

245 Siposova, D., Ciamporova-Zatovicova, Z. & Ciampor Jr, F. (2017). Development of
246 microsatellite loci for two *Agabus* diving beetle species from the pooled DNA and testing
247 their utility in mountain lake populations. *Limnologica*, 67, 7-19.
248 doi:10.1016/j.limno.2017.09.002
249

250 Staniec, B., Zagaja, M., Pietrykowska-Tudruj, E. & Wagner, G.K. (2018). Comparative larval
251 ultramorphology of some myrmecophilous Aleocharinae (Coleoptera, Staphylinidae),
252 with a first description of the larvae of *Amidobia talpa* (Heer O, 1841) and *Oxypoda*
253 *haemorrhoea* (Mannerheim C.G., 1830), associated with the *Formica rufa* species group.
254 *ZooKeys*, 808, 93-114. doi: 10.3897/zookeys.808.29818
255

256 Steury, B.W., Steiner Jr., W.E. & Shockley, F.W. (2018). The soldier beetles and false soldier
257 beetles (Coleoptera: Cantharidae and Omethidae) of the George Washington Memorial
258 Parkway. *The Maryland Entomologist*, 7(2), 11-27
259

260 Svensson, B.W. (1992). Changes in occupancy, niche breadth and abundance of three *Gyrinus*
261 species as their respective range limits are approached. *Oikos*, 63(1), 147-156.
262 doi:10.2307/3545524
263

264 Tilden, J.W. (1950). The feeding of *Podabrus pruinosis* LeConte (Cantharidae). *The*
265 *Coleopterists Bulletin*, 4(6), 92. doi: stable/3998496
266

267 Tree of Life Web Project. (2011). *Scirtidae*. *Marsh beetles*. Tree of Life Web Project.
268 <http://tolweb.org/Scirtidae/9613>

269 Triplehorn, C. A. (2008). Darkling beetles (Coleoptera: Tenebrionidae). In J. L. Capinera,
270 *Encyclopedia of Entomology*. Retrieved from Gale Virtual Reference Library.

- 271 Urban, J. (2011). Occurrence, bionomics and harmfulness of *Crepidodera aurea* (Geoffr.)
272 (Coleoptera, Alticidae). *Acta Universitatis Agriculturae et Silviculturae Mendelianae*
273 *Brunensis*, 59(5), 279-308. doi: 10.11118/actaun201159050279
- 274 Vahtera, V., Muona, J., Linna, A. & Saaksjarvi, I.E. (2015). Nine genera of Eucnemidae
275 (Coleoptera) new to Peru, with a key to Peruvian genera. *Biodiversity Data Journal*, 3,
276 e4493. doi: 10.3897/BDJ.3.e4493
- 277 Vondel, B.J.V. & Alarie, Y. (2016). A new species of *Haliplus* Latreille, 1802 (Coleoptera:
278 Adephaga: Haliplidae) from Canada. *The Coleopterists Bulletin*, 70(4), 801-804.
279 doi:10.1649/0010-065X-70.4.801
- 280 Walczynska, A. (2010). Is wood safe for its inhabitants? *Bulletin of Entomological Research*,
281 100(4), 461-465. doi: 10.1017/S0007485309990514
- 282 Webster, R.P., Sweeney, J.D. & DeMerchant, I. (2012). New Coleoptera records from New
283 Brunswick, Canada: Mordellidae and Ripiphoridae. *ZooKeys*, 179, 243-256. doi:
284 10.3897/zookeys.179.2583
- 285 Webster, R.P., Sweeney, J.D. & DeMerchant, I. (2012). New Coleoptera records from New
286 Brunswick, Canada: Trogossitidae, Cleridae, and Melyridae, with an addition to the fauna
287 of Nova Scotia. *ZooKeys*, 179, 141-156. doi: 10.3897/zookeys.179.2585
- 288 “Weevils”. (2014). In K. L. Lerner & B. W. Lerner, *The Gale Encyclopedia of Science*. Retrieved
289 from Gale Virtual Reference Library.
290
- 291 Yavorskaya, M.I., Leschen, R.A.B., Polilov, A.A. & Beutel, R.G.(2014). Unique rostrate larvae
292 and basidiomycophagy in the beetle family Corylophidae. *Arthropod Structure &*
293 *Development*, 43(2), 153-162. doi: 10.1016/j.asd.2013.11.001
294
- 295 Yee, D.A. (2014). Ecology, systematics, and the natural history of predaceous diving beetles
296 (Coleoptera: Dytiscidae). Springer, Dordrecht.
- 297 Zhang, S.-Q., Che, L.-H., Li, Y., Liang, D., Pang, H., Ślipiński, S.A. & Zhang, P. (2018).
298 Evolutionary history of Coleoptera revealed by extensive sampling of genes and species.
299 *Nature Communications*, 9(1), 1-11. doi: 10.1038/s41467-017-02644-4
- 300 Zhou, J., Ross, D.W., Niwa, C.G. (2001). Kairomonal response of *Thanasimus undatulus*,
301 *Enoclerus sphegeus* (Coleoptera: Cleridae), and *Temnochila chlorodia* (Coleoptera:
302 Trogositidae) to bark beetle semiochemicals in Eastern Oregon. *Environmental*
303 *Entomology*, 30(6), 993-998. doi: 10.1603/0046-225X-30.6.993
- 304 Zimmer, C.T., Muller, A., Heimbach, U. & Nauen, R. (2014). Target-site resistance to pyrethroid
305 insecticides in German populations of the cabbage stem flea beetle, *Psylliodes*
306 *chrysocephala* L. (Coleoptera: Chrysomelidae). *Pesticide Biochemistry and Physiology*,
307 108, 1-7. doi: 10.1016/j.pestbp.2013.11.005
- 308