

Additional file 3 - Matrix

character	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
outgroup	1	1	1	1	1	0	0	–	–	–	–	0	0	–	–	–	–	–	–	0	1	0	0	0	0	–	0	0	1	0	–	1	0	–	–	–	
<i>Kallidecthes richardsoni</i>	1	1	1	1	1	0	0	–	–	–	–	0	0	–	–	–	–	–	–	1	0	0	0	0	0	–	0	0	0	0	–	0	0	–	–	–	
<i>Perimecturus rapax</i>	1	1	1	1	1	0	1	?	?	0	–	?	?	?	?	?	?	?	?	1	0	1	1	1	1	0	1	0	1	1	1	1	0	?	?	?	
<i>Perimecturus parki</i>	1	1	1	1	1	0	1	0	1	0	–	1	1	1	0	0	0	0	0	1	0	0	1	1	0	–	0	1	1	1	1	1	0	0	0	0	
<i>Bairdops elegans</i>	1	1	1	1	1	0	1	0	1	0	–	1	1	0	0	0	0	0	0	1	0	0	1	0	0	–	1	0	1	1	1	1	0	0	0	0	
<i>Bairdops beargulchensis</i>	0	1	1	1	1	0	1	0	1	0	–	1	1	0	0	0	0	?	?	1	0	0	?	0	0	–	1	1	1	1	1	1	0	0	0	0	
<i>Archaeocaris vermiformis</i>	0	0	1	1	1	0	1	0	1	0	–	0	1	0	0	0	0	0	1	0	1	0	0	0	0	–	0	0	?	?	?	1	0	0	0	0	
<i>Archaeocaris graffhami</i>	0	0	1	1	1	0	1	0	1	0	–	0	1	0	0	0	0	?	?	?	?	?	?	?	0	0	–	0	0	?	?	?	1	0	0	0	0
<i>Gorgonophontes fraiponti</i>	0	0	1	1	0	0	1	0	1	0	–	1	1	0	1	0	0	1	0	0	1	0	0	1	1	0	0	1	1	1	0	1	0	1	0	0	
<i>Gorgonophontes peleron</i>	0	0	1	1	0	0	1	0	1	0	–	1	1	0	1	0	0	1	0	0	1	0	0	1	1	0	0	1	1	1	0	1	0	1	0	0	
<i>Daidal acanthocercus</i>	0	0	0	1	0	0	1	0	1	0	–	1	1	0	0	0	0	1	0	0	0	1	0	1	1	0	1	1	1	1	0	1	0	0	0	0	
<i>Daidal pattoni</i>	0	0	0	1	0	0	1	0	1	0	–	1	1	0	0	0	0	?	?	?	?	?	?	?	?	?	?	?	1	1	1	0	?	?	0	0	0
<i>Daidal schoellmanni</i>	0	0	0	1	0	0	1	0	1	0	–	1	1	0	0	0	0	1	0	0	0	1	0	1	0	1	1	0	1	1	1	0	1	0	0	0	
<i>Tyrannophontes theridion</i>	0	0	0	1	0	0	1	1	0	1	0	1	1	1	1	0	0	1	1	0	0	0	0	1	0	–	0	1	1	1	0	1	0	1	1	1	
<i>Tyrannophontes gignantion</i>	0	0	0	1	0	0	1	1	0	1	0	1	1	1	1	1	0	0	1	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	1	1	1
<i>Pseudosculda laevis</i>	0	0	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	0	0	0	–	1	1	1	1	1	
<i>?Sculda pennata/spinosa</i>	0	0	1	0	0	1	1	1	0	?	?	1	1	0	1	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	–	1	1	1	1	0	
<i>?Sculda pusilla</i>	0	?	?	0	0	?	1	?	?	?	?	?	?	?	1	1	0	0	?	1	0	1	0	0	1	1	0	0	0	0	–	1	1	1	1	1	
<i>Squilla mantis</i>	0	0	0	0	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	1	1	0	0	0	0	–	1	1	1	1	1	
<i>Chabardella spinosa</i>	0	0	0	1	0	0	1	0	1	?	?	1	1	0	1	0	0	0	0	?	0	1	?	?	?	?	?	?	?	?	?	?	?	?	1	0	0