

1 **Captions for figures and tables in supplementary material**

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3 *Supplementary Figures*

4 **Supplementary Figure 1.** Microphotographs of the type specimens of *Rhinergasilus*
5 *piranhus* Boeger & Thatcher, 1988 on loan from the invertebrate collection of the
6 Zoological Collection of the National Institute of Amazonian Research (INPA): (A)
7 Holotype INPA PA 309-1, (C) to (H) Paratypes INPA PA 309-2 to 309-5. Scale bars in
8 micrometers (μm).

9

10 **Supplementary Figure 1.** Microphotographs of the specimens of *Rhinergasilus piranhus*
11 Boeger & Thatcher, 1988 used to obtain sequences from the partial fragments of the
12 mitochondrial (subunit I of cytochrome c oxidase – *cox1*) and the ribosomal gene (28S
13 rDNA): (A) voucher n. XXX, (B) voucher n. XXX, (C) voucher n. XXX, (D) voucher n. XXX, (E)
14 voucher n. XXX.

15

16 **Supplementary Figure 3.** Phylogenetic tree of Ergasilidae copepods based on partial
17 subunit I of cytochrome c oxidase (*cox1*) gene alignments. Newly generated sequences
18 for *Rhinergasilus piranhus* Boeger & Thatcher, 1988 and *Gamispatulus schizodontis*
19 Thatcher & Boeger, 1984 are provided in bold. Nodal support presented above or below
20 branches for (A) Bayesian Inference (>0.7) and (B) Maximum Likelihood (>70%)
21 analyses (BI/ML). *Lamproglena clariae* Fryer, 1956 and *Lamproglena cleopatra* Humes,
22 1957 were used as outgroup.

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25

26 *Supplementary Tables*

27 **Supplementary Table 1.** Genetic divergences among aligned 28S rRNA sequences
28 expressed as percentage identities (below diagonal) and differences in the number of
29 nucleotides (above diagonal).

30

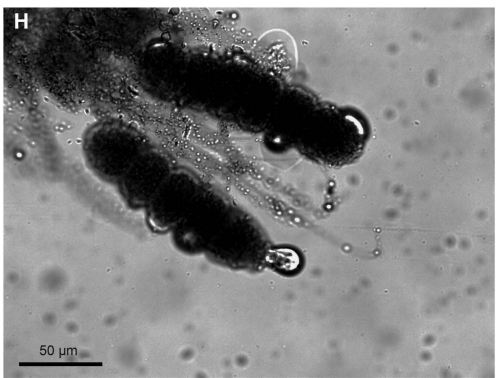
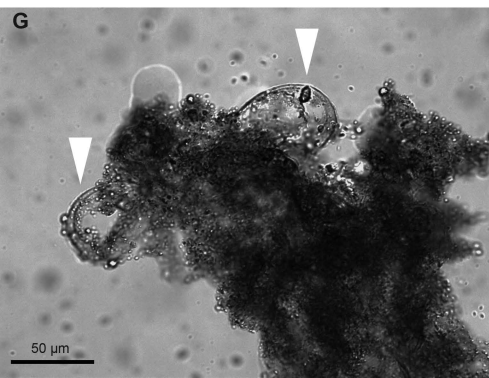
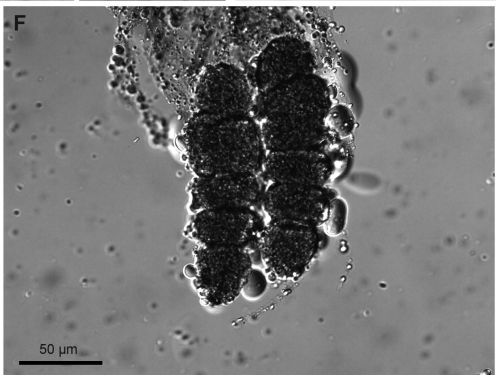
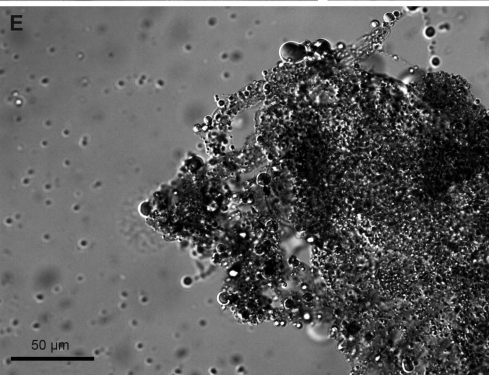
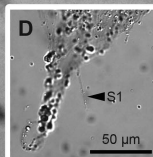
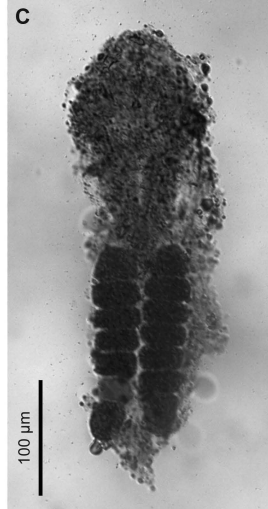
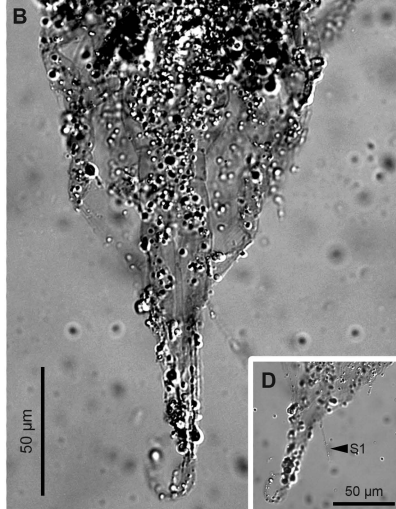
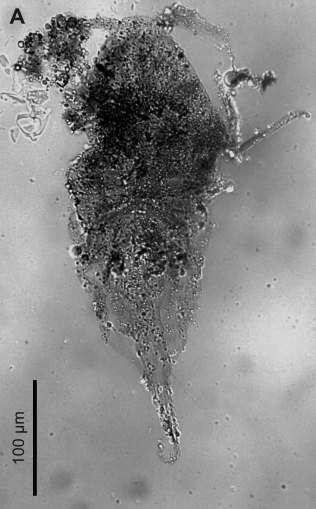
31 **Supplementary Table 2.** Genetic divergences among aligned 18S rRNA sequences
32 expressed as percentage identities (below diagonal) and differences in the number of
33 nucleotides (above diagonal).

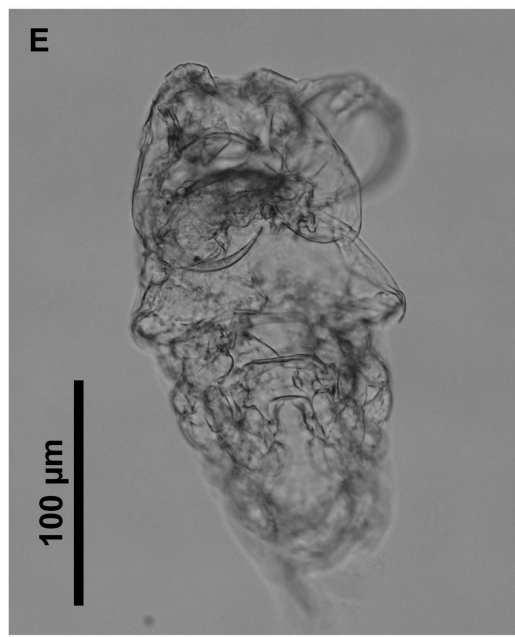
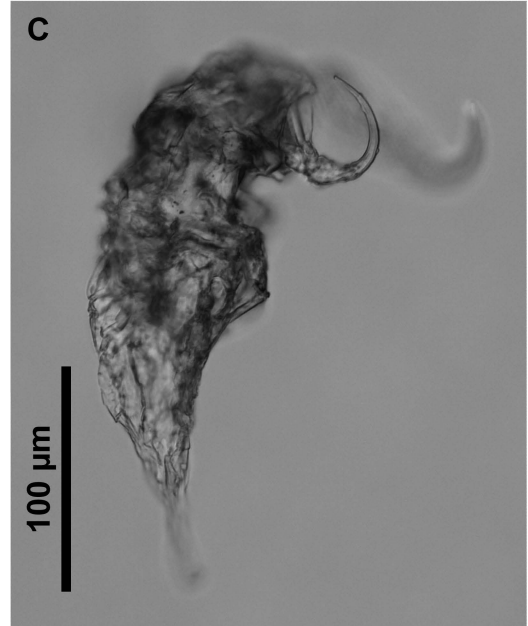
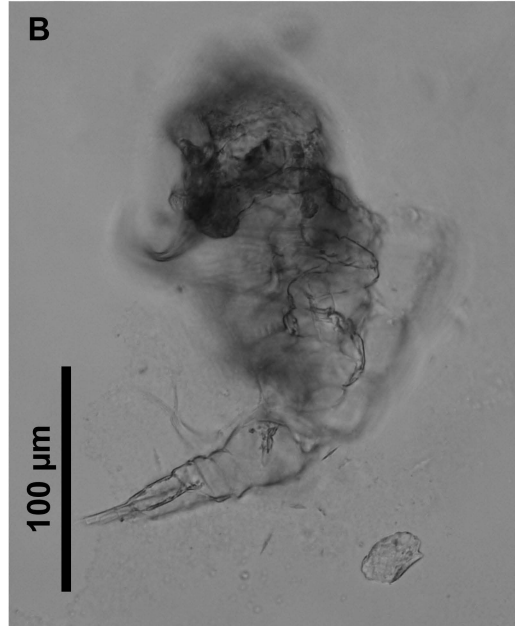
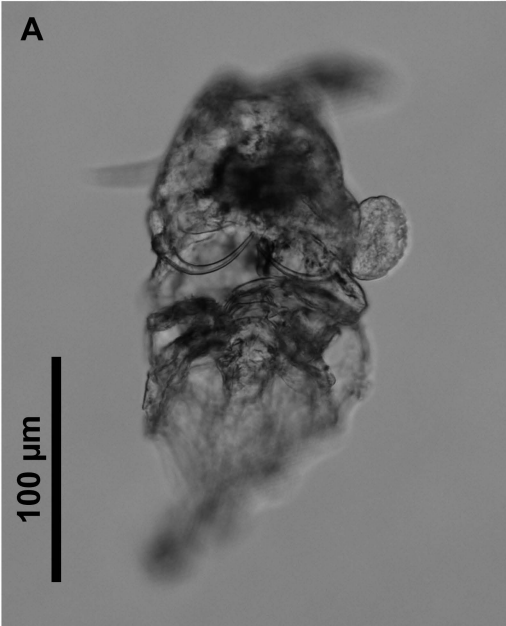
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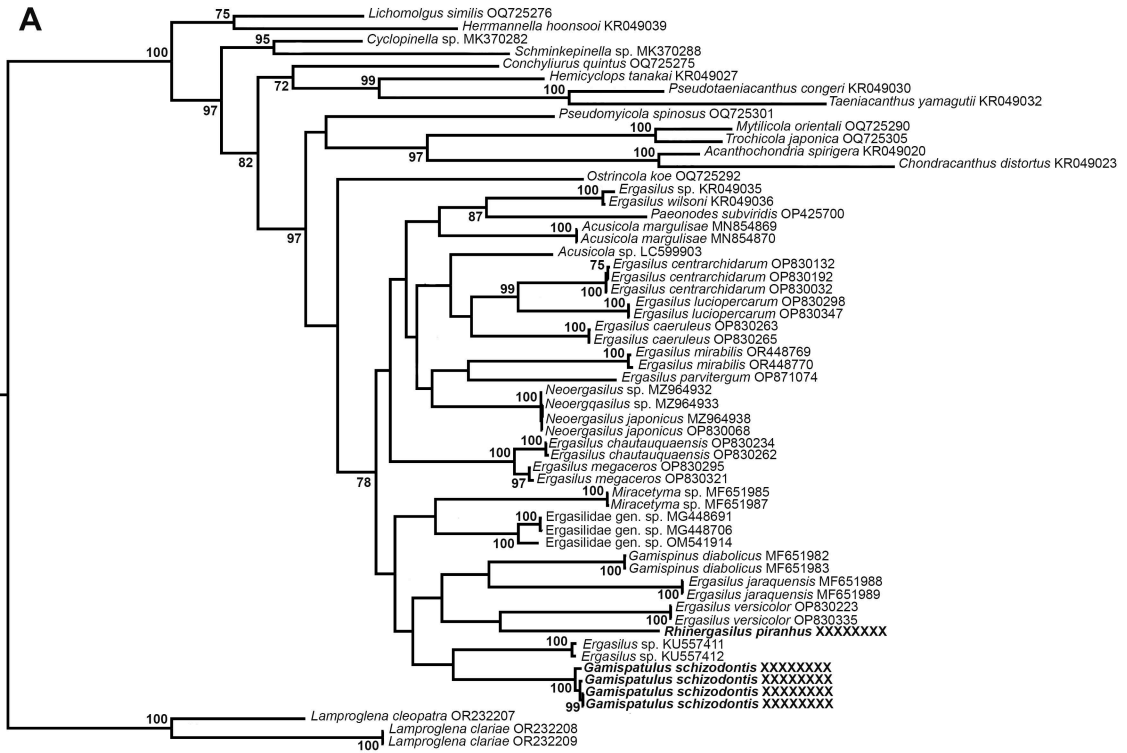
35 **Supplementary Table 3.** Genetic divergences among aligned subunit I of cytochrome c
36 oxidase (cox1) sequences expressed as percentage identities (below diagonal) and
37 differences in the number of nucleotides (above diagonal).

38

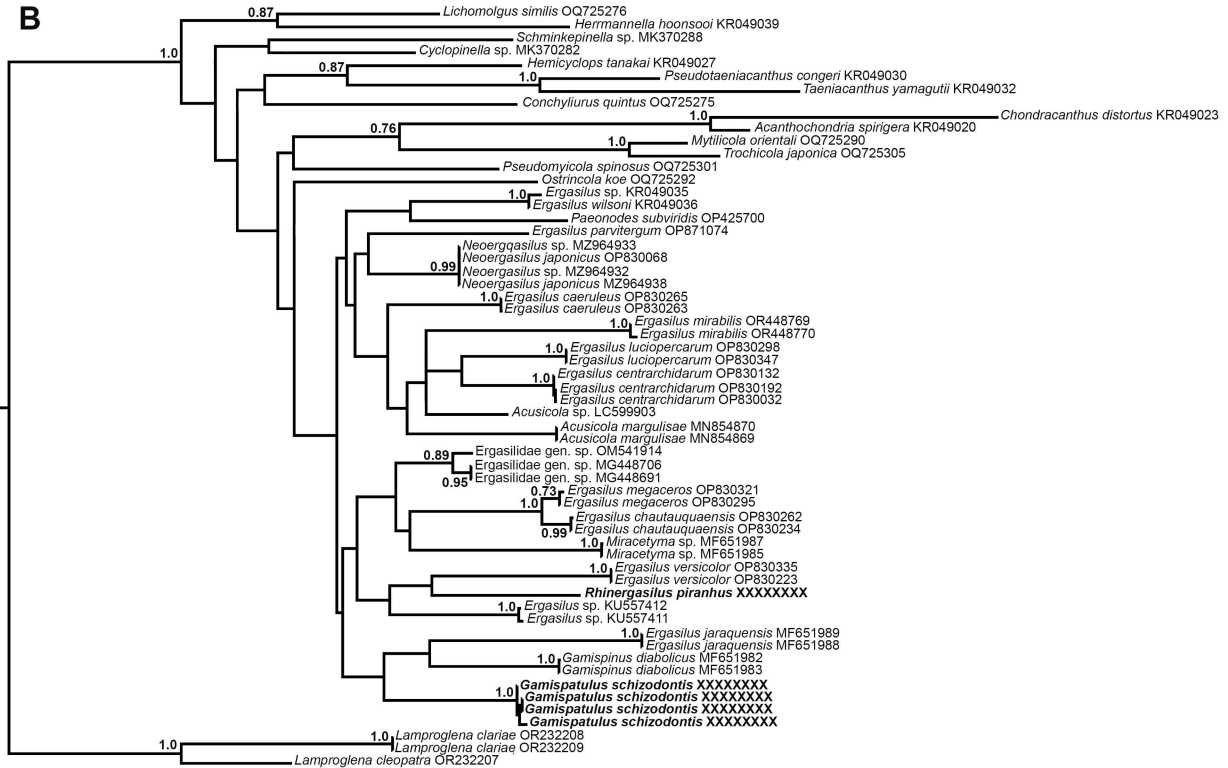
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A

0.2

B

0.3

Supplementary Table 1

N	Copepod species	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	37	38	39	40	41	42	43	44	45	46	47	48	49	
1	<i>Sinergasilus major</i> DQ107524		19	24	21	26	83	84	76	77	79	86	89	90	91	90	75	92	91	82	82	92	92	92	92	81	91	92	90	94	90	91	95	97	106	136	135	135	171	164	180	178	160	189	192	200	207	203	206	196	
2	<i>Sinergasilus polycolpus</i> DQ107525	97.1		11	8	13	70	71	62	63	65	73	76	77	78	77	62	81	80	71	71	79	79	79	79	68	77	81	79	83	79	78	84	84	93	126	125	127	161	156	170	167	144	183	188	194	193	189	199	184	
3	<i>Ergasilus ancoratus</i> DQ107528	96.3	98.3		9	14	70	71	60	61	64	72	75	76	77	76	62	81	80	71	71	79	79	79	79	67	78	80	80	84	80	77	85	85	94	129	123	127	161	158	166	168	143	179	189	195	195	191	196	184	
4	<i>Sinergasilus major</i> MZ047815	96.8	98.8	98.6		15	64	67	60	61	59	70	73	74	75	74	55	80	79	67	67	72	72	72	72	61	74	76	76	80	76	73	81	79	90	126	122	122	158	156	171	168	139	179	188	197	192	188	196	183	
5	<i>Sinergasilus undulatus</i> DQ107527	96.0	98.0	97.8	97.7		74	73	65	66	71	77	80	79	82	81	65	81	80	74	74	81	81	81	81	71	83	86	82	86	81	78	85	86	94	129	127	132	166	158	170	170	147	183	191	194	196	190	201	189	
6	<i>Paraergasilus medius</i> DQ107529	87.3	89.3	89.3	90.2	88.7		8	39	40	41	54	55	57	60	58	49	55	54	49	49	63	62	62	63	49	57	55	72	77	72	69	77	69	68	123	119	120	156	154	163	163	142	168	185	195	192	189	188	161	
7	<i>Paraergasilus brevidigitus</i> s DQ107530	87.1	89.1	89.1	89.7	88.8	98.8		31	32	42	46	49	51	56	54	47	55	54	45	45	59	58	58	59	47	54	54	67	72	68	66	74	68	66	119	116	122	155	151	161	161	139	166	184	193	190	187	185	160	
8	<i>Ergasilus</i> sp. KR048842	88.3	90.5	90.8	90.8	90.0	94.0	95.2		1	39	35	36	38	43	41	37	49	48	41	41	60	60	60	60	46	45	46	65	68	66	64	71	67	63	114	114	117	152	147	164	158	139	171	184	191	176	173	182	161	
9	<i>Ergasilus wilsoni</i> KR048843	88.2	90.3	90.6	90.6	89.9	93.9	95.1	99.8		40	36	37	39	44	42	38	50	49	42	42	61	61	61	61	47	44	47	66	69	67	65	72	68	64	115	115	116	153	148	165	159	140	172	185	192	177	174	183	162	
10	<i>Ergasilus peregrinu</i> s DQ107531	87.9	90.0	90.2	91.0	89.1	93.7	93.5	94.0	93.9		41	46	44	44	46	40	59	58	49	49	50	50	50	50	40	52	52	57	60	60	57	65	61	60	114	121	114	152	147	162	160	135	168	179	184	182	178	177	161	
11	<i>Ergasilus briani</i> DQ107532	86.8	88.8	89.0	89.3	88.2	91.7	92.9	94.6	94.5	93.7		12	19	17	21	31	45	44	49	49	60	60	60	60	50	45	44	65	69	68	66	70	65	71	118	122	125	158	152	166	158	140	171	187	192	176	174	185	169	
12	<i>Ergasilus tumidus</i> DQ107533	86.3	88.3	88.5	88.8	87.7	91.6	92.5	94.5	94.3	92.9	98.2		13	18	22	32	39	38	49	49	62	61	61	61	54	45	44	69	73	70	69	74	65	68	117	122	125	158	155	166	160	142	172	184	188	172	170	181	168	
13	<i>Ergasilus tumidus</i> DQ107535	86.2	88.2	88.3	88.7	87.9	91.2	92.2	94.2	94.0	93.2	97.1	98.0		24	28	34	41	40	52	52	63	63	63	63	53	44	45	67	71	71	68	73	66	68	115	121	129	160	158	159	155	143	177	183	186	177	173	180	169	
14	<i>Ergasilus parasituri</i> DQ107536	86.0	88.0	88.2	88.5	87.4	90.8	91.4	93.4	93.2	93.2	97.4	97.2	96.3		8	32	39	38	49	49	63	63	63	63	58	49	48	72	72	75	72	71	72	69	122	127	128	154	151	172	161	141	175	189	190	177	175	181	162	
15	<i>Ergasilus scalaris</i> DQ107538	86.2	88.2	88.3	88.7	87.6	91.1	91.7	93.7	93.5	92.9	96.8	96.6	95.7	98.8		34	39	38	51	51	67	67	67	67	62	49	47	73	75	76	73	74	78	67	127	130	130	157	153	173	162	142	177	193	193	177	175	184	161	
16	<i>Ergasilus hypomesi</i> DQ107539	88.5	90.5	90.5	91.6	90.0	92.5	92.8	94.3	94.2	93.9	95.2	95.1	94.8	95.1	94.8		42	41	43	43	55	55	55	55	45	43	42	63	67	66	59	64	65	63	117	121	115	149	147	174	166	134	173	187	192	187	180	181	170	
17	<i>Neoergasilus japonicus</i> KR048823	85.9	87.6	87.6	87.7	87.6	91.6	91.6	92.5	92.3	90.9	93.1	94.0	93.7	94.0	94.0	93.6		1	63	63	72	71	71	71	72	55	57	74	76	77	71	70	75	73	122	126	128	164	157	174	167	150	171	194	191	188	186	181	172	
18	<i>Neoergasilus japonicus</i> MWS10241	86.0	87.7	87.7	87.9	87.7	91.7	91.7	92.6	92.5	91.1	93.2	94.2	93.9	94.2	94.2	93.7	99.8		62	62	62	61	70	70	70	71	54	56	73	75	76	70	69	74	72	121	125	127	163	156	173	166	149	170	193	190	187	185	182	171
19	<i>Acusicola marguliseae</i> MNS82849	87.0	88.7	88.7	89.4	88.3	92.2	92.8	93.5	93.3	92.2	92.2	91.7	92.2	91.9	93.2	90.0	90.1		0	49	50	50	50	46	59	53	70	72	70	66	73	71	74	113	124	120	155	149	164	158	137	172	186	186	173	168	174	157		
20	<i>Acusicola marguliseae</i> MNS82851	87.0	88.7	88.7	89.4	88.3	92.2	92.8	93.5	93.3	92.2	92.2	91.7	92.2	91.9	93.2	90.0	90.1	100.0		49	50	50	50	46	59	53	70	72	70	66	73	71	74	113	124	120	155	149	164	158	137	172	186	186	173	168	174	157		
21	<i>Rhinerigasilus piranthus</i> XXXXXXXX	85.9	87.9	87.9	89.0	87.6	90.3	91.0	90.8	90.6	92.3	90.8	90.5	90.3	90.3	89.7	91.6	89.0	89.1	92.2	92.2		3	3	3	47	73	72	74	77	75	70	80	70	82	122	125	128	162	160	172	164	144	171	188	193	188	186	182	173	
22	<i>Rhinerigasilus piranthus</i> XXXXXXXX	85.9	87.9	87.9	89.0	87.6	90.3	91.0	90.8	90.6	92.3	90.8	90.6	90.3	90.3	89.7	91.6	89.1	89.3	92.1	92.1	99.5		0	1	46	73	72	74	77	75	70	80	70	82	121	125	127	160	159	172	164	144	169	188	193	187	185	179	171	
23	<i>Rhinerigasilus piranthus</i> XXXXXXXX	85.9	87.9	87.9	89.0	87.6	90.5	91.1	90.8	90.6	92.3	90.8	90.6	90.3	90.3	89.7	91.6	89.1	89.3	92.1	92.1	99.5	100.0		1	46	73	72	74	77	75	70	80	70	82	121	125	127	160	159	172	164	144	169	188	193	187	185	179	171	
24	<i>Rhinerigasilus piranthus</i> XXXXXXXX	85.9	87.9	87.9	89.0	87.6	90.4	91.0	90.8	90.6	92.3	90.8	90.6	90.3	90.3	89.7	91.6	89.1	89.3	92.1	92.1	99.6	99.9	99.9		47	73	72	74	77	75	70	80	70	82	122	125	127	161	159	172	164	144	170	188	193	187	185	180	172	
25	<i>Gamispatus schizodontis</i> XXXXXXXX	87.6	89.6	89.8	90.7	89.1	92.5	92.8	93.0	92.8	93.9	92.3	91.7	91.9	91.1	90.5	93.1	89.0	89.1	92.7	92.7	92.8	93.0	93.0	92.9		60	58	70	73	69	63	75	68	77	114	114	113	154	155	173	166	135	164	182	190	187	182	179	168	
26	<i>Ergasilus sieboldi</i> OM812074	85.9	88.1	87.9	88.5	87.1	91.1	91.6	93.0	93.2	91.9	93.0	93.0	93.2	92.4	93.3	91.5	91.6	90.5	90.5		88.7	88.7	88.7	88.7	90.7		22	71	75	73	69	76	66	65	118	134	118	157	165	168	165	145	183	195	197	190	189	188	174	
27	<i>Ergasilus sieboldi</i> ON706996	85.8	87.5	87.6	88.3	86.7	91.5	91.6	92.9	92.7	92.0	93.2	93.2	93.0	92.6	92.7	93.5	91.2	91.3	91.6	91.6		88.9	88.9	88.9	88.9	91.0	96.5		72	76	74	67	78	63	69	120	134	120	160	161	173	165	146	182	197	201	189	188	188	173
28	<i>Ergasilus macrodactylus</i> OQ407470	86.2	87.9	87.7	88.4	87.4	89.0	89.7	90.0	89.9	91.3	90.0	89.4	89.7	89.0	88.8	90.4	88.7	88.8	88.9	88.9		88.7	88.7	88.7	88.7	89.3	89.0	88.9		6	9	13	15	43	67	118	121	127	156	147	173	166	146	174	184	184	183	177	191	162
29	<i>Ergasilus parvus</i> OQ407472	85.6	87.3	87.1	87.7	86.8	88.2	89.0	89.6	89.4	90.8	89.4	88.8																																						

