

Table S1 List of studied taxa with their specimen ID, haplotype number, GenBank accession numbers for the sequences from analyzed loci (new records in bold fonts), voucher ID, location, collection data, and collector.

Specimen ID	Species	COI haplotype	COI accession	16S accession	ITS accession	Voucher ID	Latitude	Longitude	Location and habitat	Collection date	Collector
CE1137	<i>L. hoffmeisteri</i> I	Hap13	KY369467	KY369312	KY369392	SMNH 158958	58.483 N	134.782 W	U.S.A., Alaska, Juneaux, Glacier Hwy, Peterson Creek above Veteran's Memorial Highway Bridge, creek sediment	23-Aug-2005	Leyla Arsan & Stephen Atkinson
CE1156	<i>L. hoffmeisteri</i> I	Hap13	KY369468	KY369313	KY369393	SMNH 158959	58.483 N	134.783 W	U.S.A., Alaska, Juneaux, Glacier Hwy, Peterson Creek above Veteran's Memorial Highway Bridge, creek sediment	23-Aug-2005	Leyla Arsan & Stephen Atkinson
CE1171	<i>L. hoffmeisteri</i> I	Hap11	KY369472	KY369314	KY369394	SMNH 158960	58.483 N	134.784 W	U.S.A., Alaska, Juneaux, Glacier Hwy, Peterson Creek, Amalga Lake, lake sediment	23-Aug-2005	Leyla Arsan & Stephen Atkinson
CE1172	<i>L. hoffmeisteri</i> I	Hap12	KY369473	KY369315	KY369395	SMNH 158961	58.483 N	134.784 W	U.S.A., Alaska, Juneaux, Glacier Hwy, Peterson Creek, Amalga Lake, lake sediment	23-Aug-2005	Leyla Arsan & Stephen Atkinson
CE3092	<i>L. hoffmeisteri</i> I	Hap14	KY369519			SMNH 158962	57.697 N	11.993 E	Sweden, Västergötland, Göteborg, Mölndalsån River at Liseberg-Ullevi, mud	5-Sep-2007	Maria Lindström & Sebastian Kvist
CE3238	<i>L. hoffmeisteri</i> I	Hap15	KY369529	KY369316	KY369396	SMNH 158963	55.806 N	12.561 E	Denmark, Sjaelland, Mølleea River at Raadvaad, mud	30-Oct-2005	Maria Lindström & Sebastian Kvist
CE3239	<i>L. hoffmeisteri</i> I	Hap14	KY369530	KY369317	KY369397	SMNH 158964	55.806 N	12.561 E	Denmark, Sjaelland, Mølleea River at Raadvaad, mud	30-Oct-2005	Maria Lindström & Sebastian Kvist
CE3240	<i>L. hoffmeisteri</i> I	Hap14	KY369531			SMNH 158965	55.806 N	12.561 E	Denmark, Sjaelland, Mølleea River at Raadvaad, mud	30-Oct-2005	Maria Lindström & Sebastian Kvist
CE3241	<i>L. hoffmeisteri</i> I	Hap14	KY369532			SMNH 158966	55.806 N	12.561 E	Denmark, Sjaelland, Mølleea River at Raadvaad, mud	30-Oct-2005	Maria Lindström & Sebastian Kvist
CE3242	<i>L. hoffmeisteri</i> I	Hap14	KY369533	KY369318	KY369398	SMNH 158967	55.808 N	12.582 E	Denmark, Sjaelland, Mølleea River at Strandmøllen, mud	30-Oct-2005	Maria Lindström & Sebastian Kvist
CE8591	<i>L. hoffmeisteri</i> I	Hap14	KY369574	KY369319	KY369399	SMNH 158968	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8593	<i>L. hoffmeisteri</i> I	Hap14	KY369576			SMNH 158969	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8595	<i>L. hoffmeisteri</i> I	Hap14	KY369578			SMNH 158970	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8602	<i>L. hoffmeisteri</i> I	Hap14	KY369583			SMNH 158971	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8603	<i>L. hoffmeisteri</i> I	Hap14	KY369584			SMNH 158972	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8604	<i>L. hoffmeisteri</i> I	Hap14	KY369585			SMNH 158973	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8610	<i>L. hoffmeisteri</i> I	Hap14	KY369586			SMNH 158974	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8611	<i>L. hoffmeisteri</i> I	Hap14	KY369587			SMNH 158975	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8616	<i>L. hoffmeisteri</i> I	Hap14	KY369588			SMNH 158976	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
	<i>L. hoffmeisteri</i> I	Hap10	EF089358						(undescribe loction), Beauchamp et al. 2006		
	<i>L. hoffmeisteri</i> I			AJ225901					Austria, Ager River, Sturmbauer et al., 1999		
	<i>L. hoffmeisteri</i> I			JF783980					Germany, Aufseß, outflow of the Fisheries Council of the district of Upper Franconia, Marton and Eszterbauer 2012		
	<i>L. hoffmeisteri</i> I	Hap14	LN810309						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> I	Hap14	LN810310						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> I	Hap14	LN810311						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> I	Hap14	LN810312						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> I	Hap14	LN810313						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> I			AF325979					U.S.A., Colorado, Windy Gap, Beauchamp et al. 2001		
	<i>L. hoffmeisteri</i> I			AF325980					U.S.A., Colorado, Windy Gap, Beauchamp et al. 2001		
	<i>L. hoffmeisteri</i> I			AF325982					U.S.A., Utah, Little Bear River, Beauchamp et al. 2001		
CE22814	<i>L. hoffmeisteri</i> II	Hap7	KY369489			SMNH 158977	46.199 N	6.194 E	Switzerland, Chêne-Bougeries, Chemin de la Montagne 22C, organic (mostly leaf) matter (10-25 cm) Seymaz river	24-Aug-2014	Yingkui Liu
CE22874	<i>L. hoffmeisteri</i> II	Hap7	KY369629			SMNH 158978	46.191 N	6.188 E	Switzerland, Chêne-Bourg, Route de Malagnou 251, fine sand (5-10cm) with black organic matter, Seymaz river	24-Aug-2014	Yingkui Liu
CE22875	<i>L. hoffmeisteri</i> II	Hap7	KY369630			SMNH 158979	46.191 N	6.188 E	Switzerland, Chêne-Bourg, Route de Malagnou 251, fine sand (5-10cm) with black organic matter, Seymaz river	24-Aug-2014	Yingkui Liu
CE22881	<i>L. hoffmeisteri</i> II	Hap7	KY369634			SMNH 158980	46.191 N	6.188 E	Switzerland, Chêne-Bourg, Route de Malagnou 251, fine sand (5-10cm) with black organic matter, Seymaz river	24-Aug-2014	Yingkui Liu
CE22884	<i>L. hoffmeisteri</i> II	Hap7	KY369636	KY369320	KY369400	SMNH 158981	46.191 N	6.188 E	Switzerland, Chêne-Bourg, Route de Malagnou 251, fine sand (5-10cm) with black organic matter, Seymaz river	24-Aug-2014	Yingkui Liu
CE22887	<i>L. hoffmeisteri</i> II	Hap7	KY369638			SMNH 158982	46.191 N	6.188 E	Switzerland, Chêne-Bourg, Route de Malagnou 251, fine sand (5-10cm) with black organic matter, Seymaz river	24-Aug-2014	Yingkui Liu

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CE22888	<i>L. hoffmeisteri</i> II	Hap7	KY369639			SMNH 158983	46.191 N	6.188 E	Switzerland, Chêne-Bourg, Route de Malagnou 251, fine sand (5-10cm) with black organic matter, Seymaz river	24-Aug-2014	Yingkui Liu
CE22890	<i>L. hoffmeisteri</i> II	Hap7	KY369640			SMNH 158984	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22891	<i>L. hoffmeisteri</i> II	Hap7	KY369641			SMNH 158985	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22896	<i>L. hoffmeisteri</i> II	Hap7	KY369645			SMNH 158986	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22897	<i>L. hoffmeisteri</i> II	Hap7	KY369646			SMNH 158987	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22903	<i>L. hoffmeisteri</i> II	Hap7	KY369651			SMNH 158988	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22904	<i>L. hoffmeisteri</i> II	Hap7	KY369652			SMNH 158989	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22907	<i>L. hoffmeisteri</i> II	Hap7	KY369655			SMNH 158990	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22908	<i>L. hoffmeisteri</i> II	Hap7	KY369656			SMNH 158991	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22910	<i>L. hoffmeisteri</i> II	Hap7	KY369657			SMNH 158992	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22913	<i>L. hoffmeisteri</i> II	Hap7	KY369659			SMNH 158993	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
	<i>L. hoffmeisteri</i> II	Hap7	LN810304						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> II	Hap7	LN810305						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> II	Hap7	LN810306						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> II	Hap7	LN810307						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> II	Hap7	LN810308						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
CE3739	<i>L. hoffmeisteri</i> III	Hap38	KY369536			SMNH 158994	40.004 N	88.647 W	U.S.A., Illinois, Piatt Co., Robert Allerton Park, spring water near Reflecting Pond, small stream	20-Mar-2008	Christer Erséus & Mark Wetzel
CE3778	<i>L. hoffmeisteri</i> III	Hap39	KY369539	KY369321	KY369401	SMNH 158995	40.004 N	88.647 W	U.S.A., Illinois, Piatt Co., Robert Allerton Park, spring near Reflecting Pond, spring outflow	20-Mar-2008	Christer Erséus & Mark Wetzel
CE3779	<i>L. hoffmeisteri</i> III	Hap39	KY369540	KY369322	KY369402	SMNH 158996	40.004 N	88.647 W	U.S.A., Illinois, Piatt Co., Robert Allerton Park, spring near Reflecting Pond, spring outflow	20-Mar-2008	Christer Erséus & Mark Wetzel
CE5201	<i>L. hoffmeisteri</i> III	Hap40	KY369552	KY369323	KY369403	SMNH 158997	51.052 N	4.434 E	Belgium, Mechelen, Zenne River, polluted freshwater part of Schelde estuary, intertidal freshwater	28-Aug-2008	Jan Soors
CE5202	<i>L. hoffmeisteri</i> III	Hap41	KY369553			SMNH 158998	51.052 N	4.434 E	Belgium, Mechelen, Zenne River, polluted freshwater part of Schelde estuary, intertidal freshwater	28-Aug-2008	Jan Soors
CE5203	<i>L. hoffmeisteri</i> III	Hap40	KY369554			SMNH 158999	51.052 N	4.434 E	Belgium, Mechelen, Zenne River, polluted freshwater part of Schelde estuary, intertidal freshwater	28-Aug-2008	Jan Soors
CE5204	<i>L. hoffmeisteri</i> III	Hap41	KY369555			SMNH 159000	51.052 N	4.434 E	Belgium, Mechelen, Zenne River, polluted freshwater part of Schelde estuary, intertidal freshwater	28-Aug-2008	Jan Soors
CE3738	<i>L. hoffmeisteri</i> IV	Hap9	KY369535	KY369324	KY369404	SMNH 159001	40.004 N	88.647 W	U.S.A., Illinois, Piatt Co., Robert Allerton Park, spring water near Reflecting Pond, small stream	20-Mar-2008	Christer Erséus & Mark Wetzel
CE3744	<i>L. hoffmeisteri</i> IV	Hap9	KY369537	KY369325	KY369405	SMNH 159002	40.004 N	88.647 W	U.S.A., Illinois, Piatt Co., Robert Allerton Park, Reflecting Pond, mud	20-Mar-2008	Christer Erséus & Mark Wetzel
CE3763	<i>L. hoffmeisteri</i> IV	Hap9	KY369538			SMNH 159003	40.004 N	88.647 W	U.S.A., Illinois, Piatt Co., Robert Allerton Park, spring water near Reflecting Pond, small stream	20-Mar-2008	Christer Erséus & Mark Wetzel
CE10834	<i>L. hoffmeisteri</i> V	Hap49	KY369604	KY369339	KY369419	SMNH 159004	30.777 N	90.498 W	U.S.A., Louisiana, Tangipahoa Co., Tangipahoa River at bridge on Rd 10 near Arcola, sandy river bank	16-Jan-2011	Christer Erséus
	<i>L. hoffmeisteri</i> V			EU160493					U.S.A., New York, Mackie JA,et al.2010		
CNF2	<i>L. hoffmeisteri</i> VI	Hap50	KY369674			SMNH 159005	34.318 N	108.693 E	China, Shaanxi, Xianyang, Fenghe River	12-Jun-2013	Yingkui Liu
CNF3	<i>L. hoffmeisteri</i> VI	Hap50	KY369675			SMNH 159006	34.318 N	108.693 E	China, Shaanxi, Xianyang, Fenghe River	12-Jun-2013	Yingkui Liu
CNF4	<i>L. hoffmeisteri</i> VI	Hap50	KY369676			SMNH 159007	34.318 N	108.693 E	China, Shaanxi, Xianyang, Fenghe River	12-Jun-2013	Yingkui Liu
CNF5	<i>L. hoffmeisteri</i> VI	Hap50	KY369677			SMNH 159008	34.318 N	108.693 E	China, Shaanxi, Xianyang, Fenghe River	12-Jun-2013	Yingkui Liu
CNH15	<i>L. hoffmeisteri</i> VI	Hap50	KY369684			SMNH 159009	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH16	<i>L. hoffmeisteri</i> VI	Hap50	KY369685			SMNH 159010	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH19	<i>L. hoffmeisteri</i> VI	Hap50	KY369687			SMNH 159011	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH21	<i>L. hoffmeisteri</i> VI	Hap50	KY369688			SMNH 159012	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH27	<i>L. hoffmeisteri</i> VI	Hap50	KY369690			SMNH 159013	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH29	<i>L. hoffmeisteri</i> VI	Hap50	KY369691	KY369340	KY369420	SMNH 159014	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu

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CNH3	<i>L. hoffmeisteri</i> V1	Hap51	KY369679			SMNH 159015	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH39	<i>L. hoffmeisteri</i> V1	Hap50	KY369695			SMNH 159016	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH42	<i>L. hoffmeisteri</i> V1	Hap50	KY369697			SMNH 159017	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH5	<i>L. hoffmeisteri</i> V1	Hap50	KY369680			SMNH 159018	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH6	<i>L. hoffmeisteri</i> V1	Hap50	KY369681			SMNH 159019	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH9	<i>L. hoffmeisteri</i> V1	Hap50	KY369683			SMNH 159020	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNL1	<i>L. hoffmeisteri</i> V1	Hap50	KY369712			SMNH 159021	34.124 N	108.96 E	China, Shaanxi, Xi'an, Julian, Shenheyuan Canal	12-Jun-2013	Yingkui Liu
CNL13	<i>L. hoffmeisteri</i> V1	Hap50	KY369715			SMNH 159022	34.124 N	108.96 E	China, Shaanxi, Xi'an, Julian, Shenheyuan Canal	12-Jun-2013	Yingkui Liu
CNL17	<i>L. hoffmeisteri</i> V1	Hap50	KY369716	KY369341	KY369421	SMNH 159023	34.124 N	108.96 E	China, Shaanxi, Xi'an, Julian, Shenheyuan Canal	12-Jun-2013	Yingkui Liu
CNL48	<i>L. hoffmeisteri</i> V1	Hap50	KY369717			SMNH 159024	34.124 N	108.96 E	China, Shaanxi, Xi'an, Julian, Shenheyuan Canal	12-Jun-2013	Yingkui Liu
CNL57	<i>L. hoffmeisteri</i> V1	Hap50	KY369718			SMNH 159025	34.124 N	108.96 E	China, Shaanxi, Xi'an, Julian, Shenheyuan Canal	12-Jun-2013	Yingkui Liu
CNL59	<i>L. hoffmeisteri</i> V1	Hap50	KY369719			SMNH 159026	34.124 N	108.96 E	China, Shaanxi, Xi'an, Julian, Shenheyuan Canal	12-Jun-2013	Yingkui Liu
CNL61	<i>L. hoffmeisteri</i> V1	Hap50	KY369720			SMNH 159027	34.124 N	108.96 E	China, Shaanxi, Xi'an, Julian, Shenheyuan Canal	12-Jun-2013	Yingkui Liu
CNL7	<i>L. hoffmeisteri</i> V1	Hap50	KY369713			SMNH 159028	34.124 N	108.96 E	China, Shaanxi, Xi'an, Julian, Shenheyuan Canal	12-Jun-2013	Yingkui Liu
CNL75	<i>L. hoffmeisteri</i> V1	Hap50	KY369721			SMNH 159029	34.124 N	108.96 E	China, Shaanxi, Xi'an, Julian, Shenheyuan Canal	12-Jun-2013	Yingkui Liu
CNL80	<i>L. hoffmeisteri</i> V1	Hap50	KY369722			SMNH 159030	34.124 N	108.96 E	China, Shaanxi, Xi'an, Julian, Shenheyuan Canal	12-Jun-2013	Yingkui Liu
CNL9	<i>L. hoffmeisteri</i> V1	Hap50	KY369714			SMNH 159031	34.124 N	108.96 E	China, Shaanxi, Xi'an, Julian, Shenheyuan Canal	12-Jun-2013	Yingkui Liu
CNWQ10	<i>L. hoffmeisteri</i> V1	Hap50	KY369724			SMNH 159032	34.143 N	108.9 E	China, Shaanxi, Xi'an, Wenguobao, Yuhe River	12-Jun-2013	Yingkui Liu
CNWQ11	<i>L. hoffmeisteri</i> V1	Hap50	KY369725			SMNH 159033	34.143 N	108.9 E	China, Shaanxi, Xi'an, Wenguobao, Yuhe River	12-Jun-2013	Yingkui Liu
CNWQ12	<i>L. hoffmeisteri</i> V1	Hap50	KY369726	KY369342	KY369422	SMNH 159034	34.143 N	108.9 E	China, Shaanxi, Xi'an, Wenguobao, Yuhe River	12-Jun-2013	Yingkui Liu
CNWQ13	<i>L. hoffmeisteri</i> V1	Hap50	KY369727			SMNH 159035	34.143 N	108.9 E	China, Shaanxi, Xi'an, Wenguobao, Yuhe River	12-Jun-2013	Yingkui Liu
CNWQ14	<i>L. hoffmeisteri</i> V1	Hap50	KY369728			SMNH 159036	34.143 N	108.9 E	China, Shaanxi, Xi'an, Wenguobao, Yuhe River	12-Jun-2013	Yingkui Liu
CNWQ15	<i>L. hoffmeisteri</i> V1	Hap50	KY369729			SMNH 159037	34.143 N	108.9 E	China, Shaanxi, Xi'an, Wenguobao, Yuhe River	12-Jun-2013	Yingkui Liu
CNWQ16	<i>L. hoffmeisteri</i> V1	Hap50	KY369730			SMNH 159038	34.143 N	108.9 E	China, Shaanxi, Xi'an, Wenguobao, Yuhe River	12-Jun-2013	Yingkui Liu
CNWQ17	<i>L. hoffmeisteri</i> V1	Hap50	KY369731			SMNH 159039	34.143 N	108.9 E	China, Shaanxi, Xi'an, Wenguobao, Yuhe River	12-Jun-2013	Yingkui Liu
CNWQ36	<i>L. hoffmeisteri</i> V1	Hap50	KY369732			SMNH 159040	34.143 N	108.9 E	China, Shaanxi, Xi'an, Wenguobao, Yuhe River	12-Jun-2013	Yingkui Liu
CNYD1	<i>L. hoffmeisteri</i> V1	Hap51	KY369735			SMNH 159041	25.01 N	102.663 E	China, Yunnan, Kunming, Dian Chi Lake	8-Aug-2013	Yingkui Liu
CNYD11	<i>L. hoffmeisteri</i> V1	Hap50	KY369743			SMNH 159042	25.01 N	102.663 E	China, Yunnan, Kunming, Dian Chi Lake	8-Aug-2013	Yingkui Liu
CNYD12	<i>L. hoffmeisteri</i> V1	Hap50	KY369744			SMNH 159043	25.01 N	102.663 E	China, Yunnan, Kunming, Dian Chi Lake	8-Aug-2013	Yingkui Liu
CNYD2	<i>L. hoffmeisteri</i> V1	Hap50	KY369736			SMNH 159044	25.01 N	102.663 E	China, Yunnan, Kunming, Dian Chi Lake	8-Aug-2013	Yingkui Liu
CNYD3	<i>L. hoffmeisteri</i> V1	Hap50	KY369737			SMNH 159045	25.01 N	102.663 E	China, Yunnan, Kunming, Dian Chi Lake	8-Aug-2013	Yingkui Liu
CNYD32	<i>L. hoffmeisteri</i> V1	Hap50	KY369745	KY369343	KY369423	SMNH 159046	25.01 N	102.663 E	China, Yunnan, Kunming, Dian Chi Lake	8-Aug-2013	Yingkui Liu
CNYD4	<i>L. hoffmeisteri</i> V1	Hap50	KY369738			SMNH 159047	25.01 N	102.663 E	China, Yunnan, Kunming, Dian Chi Lake	8-Aug-2013	Yingkui Liu
CNYD5	<i>L. hoffmeisteri</i> V1	Hap50	KY369739			SMNH 159048	25.01 N	102.663 E	China, Yunnan, Kunming, Dian Chi Lake	8-Aug-2013	Yingkui Liu
CNYD7	<i>L. hoffmeisteri</i> V1	Hap50	KY369740			SMNH 159049	25.01 N	102.663 E	China, Yunnan, Kunming, Dian Chi Lake	8-Aug-2013	Yingkui Liu
CNYD8	<i>L. hoffmeisteri</i> V1	Hap50	KY369741			SMNH 159050	25.01 N	102.663 E	China, Yunnan, Kunming, Dian Chi Lake	8-Aug-2013	Yingkui Liu
CNYD9	<i>L. hoffmeisteri</i> V1	Hap50	KY369742			SMNH 159051	25.01 N	102.663 E	China, Yunnan, Kunming, Dian Chi Lake	8-Aug-2013	Yingkui Liu
CNYP1	<i>L. hoffmeisteri</i> V1	Hap50	KY369746			SMNH 159052	25.076 N	102.723 E	China, Yunnan, Kunming, Panlong River	8-Aug-2013	Yingkui Liu
CNYP2	<i>L. hoffmeisteri</i> V1	Hap50	KY369747			SMNH 159053	25.076 N	102.723 E	China, Yunnan, Kunming, Panlong River	8-Aug-2013	Yingkui Liu
CNYP25	<i>L. hoffmeisteri</i> V1	Hap50	KY369754	KY369344	KY369424	SMNH 159054	25.076 N	102.723 E	China, Yunnan, Kunming, Panlong River	8-Aug-2013	Yingkui Liu
CNYP30	<i>L. hoffmeisteri</i> V1	Hap50	KY369755			SMNH 159055	25.076 N	102.723 E	China, Yunnan, Kunming, Panlong River	8-Aug-2013	Yingkui Liu
CNYP32	<i>L. hoffmeisteri</i> V1	Hap50	KY369756			SMNH 159056	25.076 N	102.723 E	China, Yunnan, Kunming, Panlong River	8-Aug-2013	Yingkui Liu
CNYP4	<i>L. hoffmeisteri</i> V1	Hap50	KY369748			SMNH 159057	25.076 N	102.723 E	China, Yunnan, Kunming, Panlong River	8-Aug-2013	Yingkui Liu
CNYP5	<i>L. hoffmeisteri</i> V1	Hap50	KY369749			SMNH 159058	25.076 N	102.723 E	China, Yunnan, Kunming, Panlong River	8-Aug-2013	Yingkui Liu
CNYP6	<i>L. hoffmeisteri</i> V1	Hap50	KY369750			SMNH 159059	25.076 N	102.723 E	China, Yunnan, Kunming, Panlong River	8-Aug-2013	Yingkui Liu
CNYP7	<i>L. hoffmeisteri</i> V1	Hap50	KY369751			SMNH 159060	25.076 N	102.723 E	China, Yunnan, Kunming, Panlong River	8-Aug-2013	Yingkui Liu
CNYP8	<i>L. hoffmeisteri</i> V1	Hap51	KY369752			SMNH 159061	25.076 N	102.723 E	China, Yunnan, Kunming, Panlong River	8-Aug-2013	Yingkui Liu
CNYP9	<i>L. hoffmeisteri</i> V1	Hap50	KY369753			SMNH 159062	25.076 N	102.723 E	China, Yunnan, Kunming, Panlong River	8-Aug-2013	Yingkui Liu
CE10619	<i>L. hoffmeisteri</i> VII	Hap63	KY369598			SMNH 159063	63.027 N	26.654 E	Finland, Tervo, fish farm at Lake Nilakka	summer 2008	Hanna Saarikoski
CE1157	<i>L. hoffmeisteri</i> VII	Hap59	KY369469	KY369346	KY369426	SMNH 159064	61.236 N	149.612 W	U.S.A., Alaska, Anchorage, Ship Creek 100 m downstream from lowest Dam Near Loop Rd./'A' St. Bridge, creek sediment	31-Aug-2005	Leyla Arsan & Stephen Atkinson
CE1158	<i>L. hoffmeisteri</i> VII	Hap59	KY369470	KY369347	KY369427	SMNH 159065	61.236 N	149.612 W	U.S.A., Alaska, Anchorage, Ship Creek 100 m downstream from lowest Dam Near Loop Rd./'A' St. Bridge, creek sediment	31-Aug-2005	Leyla Arsan & Stephen Atkinson
CE1159	<i>L. hoffmeisteri</i> VII	Hap60	KY369471	KY369348	KY369428	SMNH 159066	61.236 N	149.612 W	U.S.A., Alaska, Anchorage, Ship Creek 100 m downstream from lowest Dam Near Loop Rd./'A' St. Bridge, creek sediment	31-Aug-2005	Leyla Arsan & Stephen Atkinson
CE12501	<i>L. hoffmeisteri</i> VII	Hap63	KY369613			SMNH 159067	30.55 N	114.358 E	China, Hubei, Wuhan, Donghu Lake, lake sediment	15-Jun-2011	Hong-zhu Wang

Table S1 List of studied taxa with their specimen ID, haplotype number, GenBank accession numbers for the sequences from analyzed loci (new records in bold fonts), voucher ID, location, collection data, and collector.

Specimen ID	Species	COI haplotype	COI accession	16S accession	ITS accession	Voucher ID	Latitude	Longitude	Location and habitat	Collection date	Collector
CE22877	<i>L. hoffmeisteri</i> VII	Hap63	KY369631			SMNH 159068	46.191 N	6.188 E	Switzerland, Chêne-Bourg, Route de Malagnou 251, fine sand (5-10cm) with black organic matter, Seymaz river	24-Aug-2014	Yingkui Liu
CE22886	<i>L. hoffmeisteri</i> VII	Hap63	KY369637			SMNH 159069	46.191 N	6.188 E	Switzerland, Chêne-Bourg, Route de Malagnou 251, fine sand (5-10cm) with black organic matter, Seymaz river	24-Aug-2014	Yingkui Liu
CE22893	<i>L. hoffmeisteri</i> VII	Hap63	KY369643			SMNH 159070	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22894	<i>L. hoffmeisteri</i> VII	Hap63	KY369644			SMNH 159071	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22898	<i>L. hoffmeisteri</i> VII	Hap63	KY369647			SMNH 159072	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22899	<i>L. hoffmeisteri</i> VII	Hap64	KY369648			SMNH 159073	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22900	<i>L. hoffmeisteri</i> VII	Hap64	KY369649			SMNH 159074	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22905	<i>L. hoffmeisteri</i> VII	Hap63	KY369653			SMNH 159075	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22906	<i>L. hoffmeisteri</i> VII	Hap64	KY369654			SMNH 159076	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22911	<i>L. hoffmeisteri</i> VII	Hap63	KY369658			SMNH 159077	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22914	<i>L. hoffmeisteri</i> VII	Hap64	KY369660			SMNH 159078	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22916	<i>L. hoffmeisteri</i> VII	Hap63	KY369661			SMNH 159079	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE2667	<i>L. hoffmeisteri</i> VII	Hap62	KY369492	KY369349	KY369429	SMNH 159080	56.986 N	16.876 E	Sweden, Öland, Borgholm, S of Föra, between Södra Greda and Lillholm, stream with standing water, mud with green algae (Cladophora) on top	12-Jun-2007	Christer Erséus
CE2711	<i>L. hoffmeisteri</i> VII	Hap63	KY369494	KY369350	KY369430	SMNH 159081	57.991 N	12.467 E	Sweden, Alingsås, Lake Anten near Ålanda, littoral zone, gravel and decomposing leaves between boulders	4-Aug-2007	Christer Erséus
CE2712	<i>L. hoffmeisteri</i> VII	Hap63	KY369495			SMNH 159082	57.991 N	12.467 E	Sweden, Alingsås, Lake Anten near Ålanda, littoral zone, gravel and decomposing leaves between boulders	4-Aug-2007	Christer Erséus
CE2713	<i>L. hoffmeisteri</i> VII	Hap63	KY369496			SMNH 159083	57.991 N	12.467 E	Sweden, Alingsås, Lake Anten near Ålanda, littoral zone, gravel and decomposing leaves between boulders	4-Aug-2007	Christer Erséus
CE2720	<i>L. hoffmeisteri</i> VII	Hap63	KY369497			SMNH 159084	57.991 N	12.467 E	Sweden, Alingsås, Lake Anten near Ålanda, littoral zone, gravel and decomposing leaves between boulders	4-Aug-2007	Christer Erséus
CE2722	<i>L. hoffmeisteri</i> VII	Hap63	KY369499			SMNH 159085	57.991 N	12.467 E	Sweden, Alingsås, Lake Anten near Ålanda, littoral zone, gravel and decomposing leaves between boulders	4-Aug-2007	Christer Erséus
CE2759	<i>L. hoffmeisteri</i> VII	Hap62	KY369505			SMNH 159086	56.986 N	16.876 E	Sweden, Öland, Borgholm, S of Föra, between Södra Greda and Lillholm, stream with standing water, muddy clay from lower end of bank	12-Jun-2007	Christer Erséus
CE2760	<i>L. hoffmeisteri</i> VII	Hap62	KY369506	KY369351	KY369431	SMNH 159087	56.986 N	16.876 E	Sweden, Öland, Borgholm, S of Föra, between Södra Greda and Lillholm, stream with standing water, muddy clay from lower end of bank	12-Jun-2007	Christer Erséus
CE2761	<i>L. hoffmeisteri</i> VII	Hap62	KY369507			SMNH 159088	56.986 N	16.876 E	Sweden, Öland, Borgholm, S of Föra, between Södra Greda and Lillholm, stream with standing water, muddy clay from lower end of bank	12-Jun-2007	Christer Erséus
CE2809	<i>L. hoffmeisteri</i> VII	Hap63	KY369508	KY369352	KY369432	SMNH 159089	56.575 N	16.606 E	Sweden, Öland, Mörbylånga, Stora Alvaret, Dröstorp natural reserve, dry stream on limestone, depression with clear spring(?) water, sand in water,	13-Jun-2007	Christer Erséus
CE2977	<i>L. hoffmeisteri</i> VII	Hap62	KY369510			SMNH 159090	56.986 N	16.876 E	Sweden, Öland,Borgholm commune, S of Föra, between Södra Greda and Lillholm stream with standing water grassroots and sand from bank just above water level	12-Jun-2007	Christer Erséus
CE2978	<i>L. hoffmeisteri</i> VII	Hap62	KY369511			SMNH 159091	56.986 N	16.876 E	Sweden, Öland,Borgholm commune, S of Föra, between Södra Greda and Lillholm stream with standing water grassroots and sand from bank just above water level	12-Jun-2007	Christer Erséus
CE2979	<i>L. hoffmeisteri</i> VII	Hap62	KY369512			SMNH 159092	56.986 N	16.876 E	Sweden, Öland,Borgholm commune, S of Föra, between Södra Greda and Lillholm stream with standing water grassroots and sand from bank just above water level	12-Jun-2007	Christer Erséus
CE3086	<i>L. hoffmeisteri</i> VII	Hap63	KY369513			SMNH 159093	57.697 N	11.993 E	Sweden, Västergötland, Göteborg, Mölndalsån River at Liseberg-Ullevi, mud	5-Sep-2007	Maria Lindström & Sebastian Kvist
CE3119	<i>L. hoffmeisteri</i> VII	Hap63	KY369522	KY369353	KY369433	SMNH 159094	57.481 N	12.074 E	Sweden, Halland, Kungsbacka, Kungsbackaån River, mud	13-Sep-2007	Maria Lindström & Sebastian Kvist

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Specimen ID	Species	COI haplotype	COI accession	16S accession	ITS accession	Voucher ID	Latitude	Longitude	Location and habitat	Collection date	Collector
CE3120	<i>L. hoffmeisteri</i> VII	Hap63	KY369523			SMNH 159095	57.481 N	12.074 E	Sweden, Halland, Kungsbacka, Kungsbackaån River, mud	13-Sep-2007	Maria Lindström & Sebastian Kvist
CE3138	<i>L. hoffmeisteri</i> VII	Hap63	KY369527			SMNH 159096	57.682 N	11.955 E	Sweden, Västergötland, Göteborg, Vitsippsdalen Stream, sand and gravel	10-Oct-2007	Maria Lindström & Sebastian Kvist
CE4919	<i>L. hoffmeisteri</i> VII	Hap63	KY369546	KY369354	KY369434	SMNH 159097	43.20 N	79.26 W	Canada, Ontario, from ship hull fouling in Great Lakes	Sep 2008	Francisco Sylvester
CE5198	<i>L. hoffmeisteri</i> VII	Hap63	KY369549	KY369355	KY369435	SMNH 159098	51.052 N	4.434 E	Belgium, Mechelen, Zenne River, polluted freshwater part of Schelde estuary, intertidal freshwater	28-Aug-2008	Jan Soors
CE5199	<i>L. hoffmeisteri</i> VII	Hap61	KY369550			SMNH 159099	51.052 N	4.434 E	Belgium, Mechelen, Zenne River, polluted freshwater part of Schelde estuary, intertidal freshwater	28-Aug-2008	Jan Soors
CE5200	<i>L. hoffmeisteri</i> VII	Hap61	KY369551			SMNH 159100	51.052 N	4.434 E	Belgium, Mechelen, Zenne River, polluted freshwater part of Schelde estuary, intertidal freshwater	28-Aug-2008	Jan Soors
CE5858	<i>L. hoffmeisteri</i> VII	Hap63	KY369556			SMNH 159101	57.683 N	11.955 E	Sweden, Västergötland, Göteborg, Vitsippsdalen Stream, muddy fine sand	8-Apr-2009	Christer Erséus
CE5859	<i>L. hoffmeisteri</i> VII	Hap63	KY369557			SMNH 159102	57.683 N	11.955 E	Sweden, Västergötland, Göteborg, Vitsippsdalen Stream, muddy fine sand	8-Apr-2009	Christer Erséus
CE5860	<i>L. hoffmeisteri</i> VII	Hap63	KY369558			SMNH 159103	57.683 N	11.955 E	Sweden, Västergötland, Göteborg, Vitsippsdalen Stream, muddy fine sand	8-Apr-2009	Christer Erséus
CE5862	<i>L. hoffmeisteri</i> VII	Hap63	KY369559			SMNH 159104	57.683 N	11.955 E	Sweden, Västergötland, Göteborg, Vitsippsdalen Stream, muddy fine sand	8-Apr-2009	Christer Erséus
CE604	<i>L. hoffmeisteri</i> VII	Hap63	KY369463	KY369345	KY369425	-	58.514 N	13.153 E	Sweden, Västergötland, Lidköping, Lake Vänern, at marina near Northern Harbour, littoral sand	6-Aug-2003	Christer Erséus
CE6579	<i>L. hoffmeisteri</i> VII	Hap63	KY369565	KY369356	KY369436	SMNH 159105	59.496 N	18.276 E	Sweden, Uppland, Österåker, Åkersberga, Åker Canal at Hildestrandsvägen, shallow water, sand, clay and mud	6-Jun-2009	Christer Erséus
CE7179	<i>L. hoffmeisteri</i> VII	Hap63	KY369569			SMNH 159106	43.403 N	12.978 E	Italy, Marche, Ancona, Esino River near Genga Railway Station, sediment near sulfidic spring effluent, with bacterial mat	9-Sep-2009	Christer Erséus
CE8552	<i>L. hoffmeisteri</i> VII	Hap63	KY369571			SMNH 159107	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8564	<i>L. hoffmeisteri</i> VII	Hap63	KY369572			SMNH 159108	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8570	<i>L. hoffmeisteri</i> VII	Hap63	KY369573			SMNH 159109	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8592	<i>L. hoffmeisteri</i> VII	Hap63	KY369575	KY369357	KY369437	SMNH 159110	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8594	<i>L. hoffmeisteri</i> VII	Hap63	KY369577			SMNH 159111	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8597	<i>L. hoffmeisteri</i> VII	Hap63	KY369579			SMNH 159112	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8598	<i>L. hoffmeisteri</i> VII	Hap63	KY369580			SMNH 159113	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8600	<i>L. hoffmeisteri</i> VII	Hap63	KY369581			SMNH 159114	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE8601	<i>L. hoffmeisteri</i> VII	Hap63	KY369582			SMNH 159115	49.897 N	11.244 E	Germany, Bavaria, Oberfranken, Aufseß (near Bayreuth), about 433 m a.s.l., sewage pond of salmonid hatchery	18-May-2010	Dennis Kallert
CE9014	<i>L. hoffmeisteri</i> VII	Hap63	KY369590			SMNH 159116	57.753 N	14.182 E	Sweden, Småland, Jönköping, Strömsberg natural reserve, banks of small river, rich humic soil and under stones	5-Aug-2010	Christer Erséus
CE9827	<i>L. hoffmeisteri</i> VII	Hap64	KY369593			SMNH 159117	58.945N	11.193 E	Sweden, Bohuslän, Strömstad, Strömsvattnet Lake, gravel and sand under stones	8-Sep-2010	Christer Erséus
CNJ20	<i>L. hoffmeisteri</i> VII	Hap66	KY369705			SMNH 159118	34.019 N	108.765 E	China, Shaanxi, Xi'an, Jingjia, Chanhe River	12-Jun-2013	Yingkui Liu
CNWQ42	<i>L. hoffmeisteri</i> VII	Hap63	KY369734			SMNH 159119	34.143 N	108.9 E	China, Shaanxi, Xi'an, Wenguobao, Yuhe River	12-Jun-2013	Yingkui Liu
	<i>L. hoffmeisteri</i> VII			JF783981					Germany, Aufseß, outflow of the Fisheries Council of the district of Upper Franconia, Marton and Eszterbauer 2012		
	<i>L. hoffmeisteri</i> VII			EU117547					Italy, Milano, Lambro River, Crottini et al. 2008		
	<i>L. hoffmeisteri</i> VII	Hap63	EU311397						Italy, Milano, Lambro River, Marotta et al. 2014		
	<i>L. hoffmeisteri</i> VII	Hap59	LN810387						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap59	LN810388						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap59	LN810389						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap59	LN810390						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap63	LN810391						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		

Table S1 List of studied taxa with their specimen ID, haplotype number, GenBank accession numbers for the sequences from analyzed loci (new records in bold fonts), voucher ID, location, collection data, and collector.

Specimen ID	Species	COI haplotype	COI accession	16S accession	ITS accession	Voucher ID	Latitude	Longitude	Location and habitat	Collection date	Collector
	<i>L. hoffmeisteri</i> VII	Hap65	LN810392						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap63	LN810393						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap63	LN810394						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap63	LN810395						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap63	LN810396						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap63	LN810397						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap64	LN810398						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap64	LN810399						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap64	LN810400						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap64	LN810401						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap63	LN810402						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap63	LN810403						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap63	LN810404						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap63	LN810405						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap63	LN810406						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap63	LN810407						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII	Hap63	LN810408						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> VII			AF325985					U.S.A., California, Mount Whitney, Beauchamp et al. 2001		
	<i>L. hoffmeisteri</i> VII			EF089340					U.S.A., Montana, Madison River, Beauchamp et al. 2006		
	<i>L. hoffmeisteri</i> VII			EU160486					U.S.A., New York, Mackie JA,et al.2010		
CE10614	<i>L. hoffmeisteri</i> VIII	Hap53	KY369595			SMNH 159120	63.027 N	26.654 E	Finland, Tervo, fish farm at Lake Nilakka	summer 2008	Hanna Saarikoski
CE10986	<i>L. hoffmeisteri</i> VIII	Hap55	KY369608			SMNH 159121	50.313 N	3.78 W	UK, Devon, Kingsbridge, Warcombe, The Barns, well	16-Feb-2010	Tim Jones (courtesy Lee Knight)
CE14181	<i>L. hoffmeisteri</i> VIII	Hap55	KY369615			SMNH 159122	51.836 N	5.663 E	The Netherlands, Hernen	19-Aug-2011	Ton van Haaren
CE2710	<i>L. hoffmeisteri</i> VIII	Hap55	KY369493	KY369359	KY369439	SMNH 159123	57.991 N	12.467 E	Sweden, Alingsås, Lake Anten near Ålanda, littoral zone, gravel and decomposing leaves between boulders	4-Aug-2007	Christer Erséus
CE2721	<i>L. hoffmeisteri</i> VIII	Hap55	KY369498			SMNH 159124	57.991 N	12.467 E	Sweden, Alingsås, Lake Anten near Ålanda, littoral zone, gravel and decomposing leaves between boulders	4-Aug-2007	Christer Erséus
CE2739	<i>L. hoffmeisteri</i> VIII	Hap58	KY369500			SMNH 159125	57.997 N	12.587 E	Sweden, Västergötland, Vårgårda, Lake Längen, 0.5-1 m, sand	9-Aug-2007	Christer Erséus
CE2740	<i>L. hoffmeisteri</i> VIII	Hap58	KY369501	KY369360	KY369440	SMNH 159126	57.997 N	12.587 E	Sweden, Västergötland, Vårgårda, Lake Längen, 0.5-1 m, sand	9-Aug-2007	Christer Erséus
CE2741	<i>L. hoffmeisteri</i> VIII	Hap58	KY369502			SMNH 159127	57.997 N	12.587 E	Sweden, Västergötland, Vårgårda, Lake Längen, 0.5-1 m, sand	9-Aug-2007	Christer Erséus
CE2742	<i>L. hoffmeisteri</i> VIII	Hap58	KY369503			SMNH 159128	57.997 N	12.587 E	Sweden, Västergötland, Vårgårda, Lake Längen, 0.5-1 m, sand	9-Aug-2007	Christer Erséus
CE2743	<i>L. hoffmeisteri</i> VIII	Hap58	KY369504			SMNH 159129	57.997 N	12.587 E	Sweden, Västergötland, Vårgårda, Lake Längen, 0.5-1 m, sand	9-Aug-2007	Christer Erséus
CE3139	<i>L. hoffmeisteri</i> VIII	Hap54	KY369528	KY369361	KY369441	SMNH 159130	57.682 N	11.955 E	Sweden, Västergötland, Göteborg, Vitsippsdalen Stream, sand and gravel	10-Oct-2007	Maria Lindström & Sebastian Kvist
CE3334	<i>L. hoffmeisteri</i> VIII	Hap54	KY369534	KY369362	KY369442	SMNH 159131	57.776 N	12.241 E	Sweden, Västergötland, Lerum, Aspenås, alder swamp at Seatons Strand (Lake Aspen)	21-Oct-2007	Christer Erséus
CE4295	<i>L. hoffmeisteri</i> VIII	Hap58	KY369543	KY369363	KY369443	SMNH 159132	61.189 N	14.675 E	Sweden, Dalarna, Orsa, near Rd E45, outlet of Lake Jäsen, sand	21-Jun-2008	Maria Lindström
CE608	<i>L. hoffmeisteri</i> VIII	Hap58	KY369464	KY369358	KY369438	-	57.997 N	12.587 E	Sweden, Västergötland, Vårgårda, Lake Längen, littoral sand	26-Jun-2003	Christer Erséus
	<i>L. hoffmeisteri</i> VIII	Hap56	EF089357						(undescribe loction), Beauchamp et al. 2006		
	<i>L. hoffmeisteri</i> VIII	Hap57	EU311398						Italy, Milano, Lambro River, Marotta et al. 2014		
CE10774	<i>L. hoffmeisteri</i> IX	Hap45	KY369600			SMNH 159133	5.367 N	100.233 E	Malaysia, Penang , pet shop in George Town	sometime in 2010	Csaba Székely (courtesy Tarmo Timm)
CE10775	<i>L. hoffmeisteri</i> IX	Hap45	KY369601			SMNH 159134	5.367 N	100.233 E	Malaysia, Penang , pet shop in George Town	sometime in 2010	Csaba Székely (courtesy Tarmo Timm)
CE10776	<i>L. hoffmeisteri</i> IX	Hap45	KY369602			SMNH 159135	5.367 N	100.233 E	Malaysia, Penang , pet shop in George Town	sometime in 2010	Csaba Székely (courtesy Tarmo Timm)
CE12492	<i>L. hoffmeisteri</i> IX	Hap44	KY369609			SMNH 159136	30.55 N	114.358 E	China, Hubei, Wuhan, Donghu Lake, lake sediment	15-Jun-2011	Hong-zhu Wang
CE12493	<i>L. hoffmeisteri</i> IX	Hap44	KY369610			SMNH 159137	30.55 N	114.358 E	China, Hubei, Wuhan, Donghu Lake, lake sediment	15-Jun-2011	Hong-zhu Wang
CE12498	<i>L. hoffmeisteri</i> IX	Hap48	KY369611			SMNH 159138	30.55 N	114.358 E	China, Hubei, Wuhan, Donghu Lake, lake sediment	15-Jun-2011	Hong-zhu Wang
CE12499	<i>L. hoffmeisteri</i> IX	Hap44	KY369612			SMNH 159139	30.55 N	114.358 E	China, Hubei, Wuhan, Donghu Lake, lake sediment	15-Jun-2011	Hong-zhu Wang
CE14187	<i>L. hoffmeisteri</i> IX	Hap46	KY369617			SMNH 159140	51.801 N	5.158 E	The Netherlands, Zuilichem, Uilkerweg	1-Sep-2011	Ton van Haaren
CE1784	<i>L. hoffmeisteri</i> IX	Hap46	KY369477	KY369326	KY369406	SMNH 159141	39.933 N	140.082 E	Japan, Akita refection, Minamiakita-gun, Gojōme-machi, Lake Hachiro-gata	9-Jul-2005	Akifumi Ohtaka
CE1840	<i>L. hoffmeisteri</i> IX	Hap47	KY369478	KY369327	KY369407	SMNH 159142	13.7 N	100.5 E	Thailand, Bangkok, Chao Phraya River	28-Apr-2006	Warucha Kanchana-Aksorn
CE1841	<i>L. hoffmeisteri</i> IX	Hap44	KY369479	KY369328	KY369408	SMNH 159143	13.7 N	100.5 E	Thailand, Bangkok, Chao Phraya River	28-Apr-2006	Warucha Kanchana-Aksorn
CE1842	<i>L. hoffmeisteri</i> IX	Hap48	KY369480			SMNH 159144	13.7 N	100.5 E	Thailand, Bangkok, Chao Phraya River	28-Apr-2006	Warucha Kanchana-Aksorn
CE1843	<i>L. hoffmeisteri</i> IX	Hap44	KY369481	KY369329	KY369409	SMNH 159145	13.7 N	100.5 E	Thailand, Bangkok, Chao Phraya River	28-Apr-2006	Warucha Kanchana-Aksorn
CE1844	<i>L. hoffmeisteri</i> IX	Hap46	KY369482			SMNH 159146	13.7 N	100.5 E	Thailand, Bangkok, Chao Phraya River	28-Apr-2006	Warucha Kanchana-Aksorn

Table S1 List of studied taxa with their specimen ID, haplotype number, GenBank accession numbers for the sequences from analyzed loci (new records in bold fonts), voucher ID, location, collection data, and collector.

Specimen ID	Species	COI haplotype	COI accession	16S accession	ITS accession	Voucher ID	Latitude	Longitude	Location and habitat	Collection date	Collector
CE1845	<i>L. hoffmeisteri</i> IX	Hap48	KY369483			SMNH 159147	13.7 N	100.5 E	Thailand, Bangkok, Chao Phraya River	28-Apr-2006	Warucha Kanchana-Aksorn
CE2126	<i>L. hoffmeisteri</i> IX	Hap45	KY369487	KY369330	KY369410	SMNH 159148	52.283 N	8.033 E	Germany, Osnabrück, lab culture at Zool Dep, Univ Osnabrück	16-Nov-2006	Annette Bergter
CE22806	<i>L. hoffmeisteri</i> IX	Hap42	KY369623	KY369333	KY369413	SMNH Type Coll. 8838	46.199 N	6.194 E	Switzerland, Chêne-Bougeries, Chemin de la Montagne 22C, organic (mostly leaf) matter (10-25 cm) Seymaz river	24-Aug-2014	Yingkui Liu
CE22807	<i>L. hoffmeisteri</i> IX	Hap46	KY369624			SMNH 159149	46.199 N	6.194 E	Switzerland, Chêne-Bougeries, Chemin de la Montagne 22C, organic (mostly leaf) matter (10-25 cm) Seymaz river	24-Aug-2014	Yingkui Liu
CE22808	<i>L. hoffmeisteri</i> IX	Hap45	KY369625	KY369334	KY369414	SMNH 159150	46.199 N	6.194 E	Switzerland, Chêne-Bougeries, Chemin de la Montagne 22C, organic (mostly leaf) matter (10-25 cm) Seymaz river	24-Aug-2014	Yingkui Liu
CE22809	<i>L. hoffmeisteri</i> IX	Hap46	KY369626	KY369335	KY369415	SMNH 159151	46.199 N	6.194 E	Switzerland, Chêne-Bougeries, Chemin de la Montagne 22C, organic (mostly leaf) matter (10-25 cm) Seymaz river	24-Aug-2014	Yingkui Liu
CE22811	<i>L. hoffmeisteri</i> IX	Hap44	KY369627	KY369336	KY369416	SMNH 159152	46.199 N	6.194 E	Switzerland, Chêne-Bougeries, Chemin de la Montagne 22C, organic (mostly leaf) matter (10-25 cm) Seymaz river	24-Aug-2014	Yingkui Liu
CE3087	<i>L. hoffmeisteri</i> IX	Hap42	KY369514	KY369331	KY369411	SMNH 159153	57.697 N	11.993 E	Sweden, Västergötland, Göteborg, Mölndalsån River at Liseberg-Ullevi, mud	5-Sep-2007	Maria Lindström & Sebastian Kvist
CE3088	<i>L. hoffmeisteri</i> IX	Hap42	KY369515			SMNH 159154	57.697 N	11.993 E	Sweden, Västergötland, Göteborg, Mölndalsån River at Liseberg-Ullevi, mud	5-Sep-2007	Maria Lindström & Sebastian Kvist
CE3089	<i>L. hoffmeisteri</i> IX	Hap42	KY369516			SMNH 159155	57.697 N	11.993 E	Sweden, Västergötland, Göteborg, Mölndalsån River at Liseberg-Ullevi, mud	5-Sep-2007	Maria Lindström & Sebastian Kvist
CE3090	<i>L. hoffmeisteri</i> IX	Hap42	KY369517			SMNH 159156	57.697 N	11.993 E	Sweden, Västergötland, Göteborg, Mölndalsån River at Liseberg-Ullevi, mud	5-Sep-2007	Maria Lindström & Sebastian Kvist
CE3091	<i>L. hoffmeisteri</i> IX	Hap42	KY369518			SMNH 159157	57.697 N	11.993 E	Sweden, Västergötland, Göteborg, Mölndalsån River at Liseberg-Ullevi, mud	5-Sep-2007	Maria Lindström & Sebastian Kvist
CE3093	<i>L. hoffmeisteri</i> IX	Hap42	KY369520			SMNH 159158	57.697 N	11.993 E	Sweden, Västergötland, Göteborg, Mölndalsån River at Liseberg-Ullevi, mud	5-Sep-2007	Maria Lindström & Sebastian Kvist
CE3094	<i>L. hoffmeisteri</i> IX	Hap42	KY369521	KY369332	KY369412	SMNH 159159	57.697 N	11.993 E	Sweden, Västergötland, Göteborg, Mölndalsån River at Liseberg-Ullevi, mud	5-Sep-2007	Maria Lindström & Sebastian Kvist
CE4924	<i>L. hoffmeisteri</i> IX	Hap43	KY369547			SMNH 159160	43.20 N	79.26 W	Canada, Ontario, from ship hull fouling in Great Lakes	Sep 2008	Francisco Sylvester
CE778	<i>L. hoffmeisteri</i> IX	Hap44	KY369465			SMNH 159161	49.58 N	11.02 E	Germany, Bavaria, Erlangen, Badstraße, pet shop	sometime in 2004	Dennis Kallert
CNAS1	<i>L. hoffmeisteri</i> IX	Hap46	KY369662			SMNH 159162	30.41 N	116.64 E	China, Anhui, Huaining Co., Shipai, paddy field	1-Jul-2013	Yingkui Liu
CNAS14	<i>L. hoffmeisteri</i> IX	Hap46	KY369670			SMNH 159163	30.41 N	116.64 E	China, Anhui, Huaining Co., Shipai, paddy field	1-Jul-2013	Yingkui Liu
CNAS18	<i>L. hoffmeisteri</i> IX	Hap46	KY369671			SMNH 159164	30.41 N	116.64 E	China, Anhui, Huaining Co., Shipai, paddy field	1-Jul-2013	Yingkui Liu
CNAS23	<i>L. hoffmeisteri</i> IX	Hap46	KY369672	KY369337	KY369417	SMNH 159165	30.41 N	116.64 E	China, Anhui, Huaining Co., Shipai, paddy field	1-Jul-2013	Yingkui Liu
CNAS51	<i>L. hoffmeisteri</i> IX	Hap46	KY369673			SMNH 159166	30.41 N	116.64 E	China, Anhui, Huaining Co., Shipai, paddy field	1-Jul-2013	Yingkui Liu
CNJ3	<i>L. hoffmeisteri</i> IX	Hap46	KY369699			SMNH 159167	34.019 N	108.765 E	China, Shaanxi, Xi'an, Jingjia, Chanhe River	12-Jun-2013	Yingkui Liu
CNJ4	<i>L. hoffmeisteri</i> IX	Hap46	KY369700			SMNH 159168	34.019 N	108.765 E	China, Shaanxi, Xi'an, Jingjia, Chanhe River	12-Jun-2013	Yingkui Liu
CNJ7	<i>L. hoffmeisteri</i> IX	Hap46	KY369702			SMNH 159169	34.019 N	108.765 E	China, Shaanxi, Xi'an, Jingjia, Chanhe River	12-Jun-2013	Yingkui Liu
CNJ8	<i>L. hoffmeisteri</i> IX	Hap46	KY369703	KY369338	KY369418	SMNH 159170	34.019 N	108.765 E	China, Shaanxi, Xi'an, Jingjia, Chanhe River	12-Jun-2013	Yingkui Liu
	<i>L. hoffmeisteri</i> IX			JF783982					Germany, Aufseß, outflow of the Fisheries Council of the district of Upper Franconia, Marton and Eszterbauer 2012		
	<i>L. hoffmeisteri</i> IX			EU117546					Italy, Milano, Lambro River, Crottini et al. 2008		
	<i>L. hoffmeisteri</i> IX			EU160464					U.S.A., New York, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160467					U.S.A., New York, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160471					U.S.A., New York, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160473					U.S.A., New York, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160474					U.S.A., New York, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160468					U.S.A., New York, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160462					U.S.A., New York, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160477					U.S.A., New York, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160476			41.413 N	73.955 W	U.S.A., New York, Hudson River, Foundry Cove, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160469			41.413 N	73.955 W	U.S.A., New York, Hudson River, Foundry Cove, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160475			41.413 N	73.955 W	U.S.A., New York, Hudson River, Foundry Cove, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160481			41.413 N	73.955 W	U.S.A., New York, Hudson River, Foundry Cove, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160483			41.413 N	73.955 W	U.S.A., New York, Hudson River, Foundry Cove, Mackie JA,et al.2010		

Table S1 List of studied taxa with their specimen ID, haplotype number, GenBank accession numbers for the sequences from analyzed loci (new records in bold fonts), voucher ID, location, collection data, and collector.

Specimen ID	Species	COI haplotype	COI accession	16S accession	ITS accession	Voucher ID	Latitude	Longitude	Location and habitat	Collection date	Collector
	<i>L. hoffmeisteri</i> IX			EU160472			41.413 N	73.955 W	U.S.A., New York, Hudson River, Foundry Cove, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160480			41.413 N	73.955 W	U.S.A., New York, Hudson River, Foundry Cove, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160478			41.413 N	73.955 W	U.S.A., New York, Hudson River, Foundry Cove, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160484			41.413 N	73.955 W	U.S.A., New York, Hudson River, Foundry Cove, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160479			41.413 N	73.955 W	U.S.A., New York, Hudson River, Foundry Cove, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160487			41.413 N	73.955 W	U.S.A., New York, Hudson River, Foundry Cove, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160482			41.413 N	73.955 W	U.S.A., New York, Hudson River, Foundry Cove, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			EU160463			41.413 N	73.955 W	U.S.A., New York, Hudson River, Foundry Cove, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> IX			AJ225912					U.S.A., New York, Hudson River, Foundry Cove, Sturmbauer et al., 1999		
CE10613	<i>L. hoffmeisteri</i> X	Hap25	KY369594			SMNH 159171	63.027 N	26.654 E	Finland, Tervo, fish farm at Lake Nilakka	summer 2008	Hanna Saarikoski
CE10615	<i>L. hoffmeisteri</i> X	Hap25	KY369596			SMNH 159172	63.027 N	26.654 E	Finland, Tervo, fish farm at Lake Nilakka	summer 2008	Hanna Saarikoski
CE10616	<i>L. hoffmeisteri</i> X	Hap25	KY369597			SMNH 159173	63.027 N	26.654 E	Finland, Tervo, fish farm at Lake Nilakka	summer 2008	Hanna Saarikoski
CE10649	<i>L. hoffmeisteri</i> X	Hap18	KY369599			SMNH 159174	62.315 N	25.73 E	Finland, Jyväskylä, Lake Alvajärvi	fall 2009	Hanna Saarikoski
CE10783	<i>L. hoffmeisteri</i> X	Hap16	KY369603	KY369372	KY369453	SMNH 159175	30.777 N	90.498 W	U.S.A., Louisiana, Tangipahoa Co., Tangipahoa River at bridge on Rd 10 near Arcola, sandy river bank	16-Jan-2011	Christer Erséus
CE10835	<i>L. hoffmeisteri</i> X	Hap17	KY369605			SMNH 159176	30.777 N	90.498 W	U.S.A., Louisiana, Tangipahoa Co., Tangipahoa River at bridge on Rd 10 near Arcola, sandy river bank	16-Jan-2011	Christer Erséus
CE10845	<i>L. hoffmeisteri</i> X	Hap17	KY369606	KY369373	KY369454	SMNH 159177	30.777 N	90.498 W	U.S.A., Louisiana, Tangipahoa Co., Tangipahoa River at bridge on Rd 10 near Arcola, sandy river bank	16-Jan-2011	Christer Erséus
CE14185	<i>L. hoffmeisteri</i> X	Hap21	KY369616			SMNH 159178	51.836 N	5.663 E	The Netherlands, Hernen	19-Aug-2011	Ton van Haaren
CE14191	<i>L. hoffmeisteri</i> X	Hap25	KY369618			SMNH 159179	51.784 N	5.774 E	The Netherlands, Wijchen, Zandbergseweg	21-Apr-2011	Ton van Haaren
CE1990	<i>L. hoffmeisteri</i> X	Hap24	KY369484	KY369364	KY369445	SMNH 159180	58.011 N	12.582 E	Sweden, Västergötland, Vårgårda, Lake Lången, 0.3 m, gravel and sand	6-Aug-2006	Christer Erséus
CE1991	<i>L. hoffmeisteri</i> X	Hap19	KY369485	KY369365	KY369446	SMNH 159181	58.011 N	12.582 E	Sweden, Västergötland, Vårgårda, Lake Lången, 0.3 m, gravel and sand	6-Aug-2006	Christer Erséus
CE1992	<i>L. hoffmeisteri</i> X	Hap24	KY369486	KY369366	KY369447	SMNH 159182	58.011 N	12.582 E	Sweden, Västergötland, Vårgårda, Lake Lången, 0.3 m, gravel and sand	6-Aug-2006	Christer Erséus
CE22883	<i>L. hoffmeisteri</i> X	Hap28	KY369635			SMNH 159183	46.191 N	6.188 E	Switzerland, Chêne-Bourg, Route de Malagnou 251, fine sand (5-10cm) with black organic matter, Seymaz river	24-Aug-2014	Yingkui Liu
CE2886	<i>L. hoffmeisteri</i> X	Hap21	KY369509	KY369367	KY369448	SMNH 159184	59.085 N	16.043 E	Sweden, Södermanland, Vingåker, Österåker, Lake Lättern at Valltrand, littoral sand	30-Jul-2007	Christer Erséus
CE290	<i>L. hoffmeisteri</i> X	Hap26	HM460271	AY885613	KY369444	-	58.4 N	26.728 E	Estonia, Tartu, Emajõgi River (kept in Timm's lab culture)	1-Dec-2000	Tarmo Timm
CE3124	<i>L. hoffmeisteri</i> X	Hap22	KY369526			SMNH 159185	57.481 N	12.074 E	Sweden, Halland, Kungsbacka, Kungsbackaån River, mud	13-Sep-2007	Maria Lindström & Sebastian Kvist
CE3931	<i>L. hoffmeisteri</i> X	Hap23	KY369541	KY369368	KY369449	SMNH 159186	57.776 N	12.241 E	Sweden, Västergötland, Lerum, Aspenås, alder swamp at Seatons Strand (Lake Aspen), muddy ditch	28-Apr-2008	Christer Erséus & K. Lundin
CE3932	<i>L. hoffmeisteri</i> X	Hap23	KY369542			SMNH 159187	57.776 N	12.241 E	Sweden, Västergötland, Lerum, Aspenås, alder swamp at Seatons Strand (Lake Aspen), muddy ditch	28-Apr-2008	Christer Erséus & K. Lundin
CE4673	<i>L. hoffmeisteri</i> X	Hap24	KY369544	KY369369	KY369450	SMNH 159188	59.117 N	14.179 E	Sweden, Värmland, Kristinehamn, Visnan River at Visnum Valls Gärd, muddy sand	16-Jul-2008	Christer Erséus
CE4674	<i>L. hoffmeisteri</i> X	Hap24	KY369545			SMNH 159189	59.117 N	14.179 E	Sweden, Värmland, Kristinehamn, Visnan River at Visnum Valls Gärd, muddy sand	16-Jul-2008	Christer Erséus
CE5863	<i>L. hoffmeisteri</i> X	Hap19	KY369560	KY369370	KY369451	SMNH 159190	57.683 N	11.955 E	Sweden, Västergötland, Göteborg, Vitsippsdalen Stream, muddy fine sand	8-Apr-2009	Christer Erséus
CE6575	<i>L. hoffmeisteri</i> X	Hap25	KY369561	KY369371	KY369452	SMNH 159191	59.496 N	18.276 E	Sweden, Uppland, Österåker, Åkersberga, Åker Canal at Hildestrandsvägen, shallow water, sand, clay and mud	6-Jun-2009	Christer Erséus
CE6577	<i>L. hoffmeisteri</i> X	Hap25	KY369563			SMNH 159192	59.496 N	18.276 E	Sweden, Uppland, Österåker, Åkersberga, Åker Canal at Hildestrandsvägen, shallow water, sand, clay and mud	6-Jun-2009	Christer Erséus

Table S1 List of studied taxa with their specimen ID, haplotype number, GenBank accession numbers for the sequences from analyzed loci (new records in bold fonts), voucher ID, location, collection data, and collector.

Specimen ID	Species	COI haplotype	COI accession	16S accession	ITS accession	Voucher ID	Latitude	Longitude	Location and habitat	Collection date	Collector
CE6581	<i>L. hoffmeisteri</i> X	Hap21	KY369566			SMNH 159193	59.496 N	18.276 E	Sweden, Uppland, Österåker, Åkersberga, Åker Canal at Hildestrandsvägen, shallow water, sand, clay and mud	6-Jun-2009	Christer Erséus
CE7157	<i>L. hoffmeisteri</i> X	Hap28	KY369568			SMNH 159194	43.403 N	12.978 E	Italy, Marche, Ancona, Esino River near Genga Railway Station, river bank	9-Sep-2009	Christer Erséus
CE9004	<i>L. hoffmeisteri</i> X	Hap18	KY369589			SMNH 159195	57.753 N	14.182 E	Sweden, Småland, Jönköping, Strömsberg natural reserve, banks of small river, rich humic soil and under stones	5-Aug-2010	Christer Erséus
CE9019	<i>L. hoffmeisteri</i> X	Hap21	KY369591			SMNH 159196	57.753 N	14.182 E	Sweden, Småland, Jönköping, Strömsberg natural reserve, banks of small river, rich humic soil and under stones	5-Aug-2010	Christer Erséus
CE9773	<i>L. hoffmeisteri</i> X	Hap24	KY369592			SMNH 159197	59.008 N	11.441 E	Sweden, Bohuslän, Strömstad, Krokstrand, at harbour, sand bank at edge of a stream, fine sand	8-Sep-2010	Christer Erséus
CNAS12	<i>L. hoffmeisteri</i> X	Hap20	KY369668	KY369376	KY369457	SMNH 159198	30.41 N	116.64 E	China, Anhui, Huaining Co., Shipai, paddy field	1-Jul-2013	Yingkui Liu
CNAS13	<i>L. hoffmeisteri</i> X	Hap20	KY369669	KY369377	KY369458	SMNH 159199	30.41 N	116.64 E	China, Anhui, Huaining Co., Shipai, paddy field	1-Jul-2013	Yingkui Liu
CNAS2	<i>L. hoffmeisteri</i> X	Hap18	KY369663			SMNH 159200	30.41 N	116.64 E	China, Anhui, Huaining Co., Shipai, paddy field	1-Jul-2013	Yingkui Liu
CNAS4	<i>L. hoffmeisteri</i> X	Hap27	KY369664	KY369374	KY369455	SMNH 159201	30.41 N	116.64 E	China, Anhui, Huaining Co., Shipai, paddy field	1-Jul-2013	Yingkui Liu
CNAS5	<i>L. hoffmeisteri</i> X	Hap20	KY369665			SMNH 159202	30.41 N	116.64 E	China, Anhui, Huaining Co., Shipai, paddy field	1-Jul-2013	Yingkui Liu
CNAS8	<i>L. hoffmeisteri</i> X	Hap20	KY369666			SMNH 159203	30.41 N	116.64 E	China, Anhui, Huaining Co., Shipai, paddy field	1-Jul-2013	Yingkui Liu
CNAS9	<i>L. hoffmeisteri</i> X	Hap18	KY369667	KY369375	KY369456	SMNH 159204	30.41 N	116.64 E	China, Anhui, Huaining Co., Shipai, paddy field	1-Jul-2013	Yingkui Liu
	<i>L. hoffmeisteri</i> X	Hap28	LN810410						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> X	Hap28	LN810411						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> X	Hap28	LN810412						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> X	Hap28	LN810413						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> X	Hap25	LN810414						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> X			EU160470					U.S.A., New York, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> X			EU160465					U.S.A., New York, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> X			EU160466					U.S.A., New York, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> X			EU160491					U.S.A., New York, Mackie JA,et al.2011		
	<i>L. hoffmeisteri</i> X			EU160492			42.295 N	73.777 W	U.S.A., New York, Hudson River, Stockport Flats, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> X			EU160490			42.046 N	73.927 W	U.S.A., New York, Hudson River, Tivoli Bays, Mackie JA,et al.2010		
	<i>L. hoffmeisteri</i> X			EU160489			42.046 N	73.927 W	U.S.A., New York, Hudson River, Tivoli Bays, Mackie JA,et al.2010		
CE1112	<i>L. clapedianus</i>	Hap2	KY369466	KY369302	KY369382	-	57.751 N	14.149 E	Sweden, Småland, Jönköping, Lillån, Kättilstorp, small river	18-Sep-2005	Daniel Gustafsson
CE13837	<i>L. clapedianus</i>	Hap2	KY369614			SMNH 159205	57.588 N	11.95 E	Sweden, Västergötland, Göteborg, Bildal, Park area S of Skintebo, stream at small bridge for pedestrians, sand	9-Nov-2011	Marcus Svensson
CE16622	<i>L. clapedianus</i>	Hap6	KY369619			ZMBN 115350	59.924 N	10.698 E	Norway, Oslo, Majorstua, stream at Vigelandsbadet (Frogner Park)	10-Oct-2012	Christer Erséus, Svante Martinsson & Yingkui Liu
CE16738	<i>L. clapedianus</i>	Hap2	KY369621			SMNH 159206	51.241 N	5.819 E	The Netherlands, Limburg, Mildert	25-Apr-2012	Ton van Haaren
CE17984	<i>L. clapedianus</i>	Hap6	KY369622			SMNH 159207	58.51 N	13.164 E	Sweden, Västergötland, Lidköping, Lake Vänern, mouth of River Lidan in Lidköping Harbour, 6.6 m, muddy sand	2-Nov-2011	Martin Liungman & Ragnar Bergh
CE2283	<i>L. clapedianus</i>	Hap2	KY369490	KY369303	KY369383	SMNH 159208	57.695 N	12.909 E	Sweden, Västergötland, Borås, Rydboholm, Lake Djupasjön, organic sediment	7-Mar-2007	J-E Svensson
CE22837	<i>L. clapedianus</i>	Hap5	KY369628			SMNH 159209	46.199 N	6.194 E	Switzerland, Chêne-Bougeries, Chemin de la Montagne 22C, organic (mostly leaf) matter (10-25 cm) Seymaz river	24-Aug-2014	Yingkui Liu
CE2284	<i>L. clapedianus</i>	Hap2	KY369491			SMNH 159210	57.695 N	12.909 E	Sweden, Västergötland, Borås, Rydboholm, Lake Djupasjön, organic sediment	7-Mar-2007	J-E Svensson
CE22879	<i>L. clapedianus</i>	Hap6	KY369632			SMNH 159211	46.191 N	6.188 E	Switzerland, Chêne-Bourg, Route de Malagnou 251, fine sand (5-10cm) with black organic matter, Seymaz river	24-Aug-2014	Yingkui Liu
CE22880	<i>L. clapedianus</i>	Hap6	KY369633			SMNH 159212	46.191 N	6.188 E	Switzerland, Chêne-Bourg, Route de Malagnou 251, fine sand (5-10cm) with black organic matter, Seymaz river	24-Aug-2014	Yingkui Liu
CE22892	<i>L. clapedianus</i>	Hap6	KY369642			SMNH 159213	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE22902	<i>L. clapedianus</i>	Hap6	KY369650			SMNH 159214	46.19 N	6.186 E	Switzerland,Thônex, Route de Malagnou 200, sand and small rocks (5-10cm) water, Seymaz river	24-Aug-2014	Yingkui Liu
CE3122	<i>L. clapedianus</i>	Hap2	KY369524	KY369304	KY369384	SMNH 159215	57.481 N	12.074 E	Sweden, Halland, Kungsbacka, Kungsbackaån River, mud	13-Sep-2007	Maria Lindström & Sebastian Kvist
CE3123	<i>L. clapedianus</i>	Hap2	KY369525			SMNH 159216	57.481 N	12.074 E	Sweden, Halland, Kungsbacka, Kungsbackaån River, mud	13-Sep-2007	Maria Lindström & Sebastian Kvist

Table S1 List of studied taxa with their specimen ID, haplotype number, GenBank accession numbers for the sequences from analyzed loci (new records in bold fonts), voucher ID, location, collection data, and collector.

Specimen ID	Species	COI haplotype	COI accession	16S accession	ITS accession	Voucher ID	Latitude	Longitude	Location and habitat	Collection date	Collector
CE6576	<i>L. clapedianus</i>	Hap6	KY369562	KY369305	KY369385	SMNH 159217	59.496 N	18.276 E	Sweden, Uppland, Österåker, Åkersberga, Åker Canal at Hildestrandsvägen, shallow water, sand, clay and mud	6-Jun-2009	Christer Erséus
CE6578	<i>L. clapedianus</i>	Hap3	KY369564			SMNH 159218	59.496 N	18.276 E	Sweden, Uppland, Österåker, Åkersberga, Åker Canal at Hildestrandsvägen, shallow water, sand, clay and mud	6-Jun-2009	Christer Erséus
CE6598	<i>L. clapedianus</i>	Hap3	KY369567			SMNH 159219	59.496 N	18.276 E	Sweden, Uppland, Österåker, Åkersberga, Åker Canal at Hildestrandsvägen, shallow water, sand, clay and mud	6-Jun-2009	Christer Erséus
CNJ21	<i>L. clapedianus</i>	Hap4	KY369706	KY369306	KY369386	SMNH 159220	34.019 N	108.765 E	China, Shaanxi, Xi'an, Jingjia, Chanhe River	12-Jun-2013	Yingkui Liu
	<i>L. clapedianus</i>			JF783979					Hungary, Százhalombatta, Temperate Water Fish Hatchery (TEHAG), Marton and Eszterbauer 2012		
	<i>L. clapedianus</i>			AF325983*					U.S.A., Colorado, Windy Gap, Beauchamp et al. 2001		
	<i>L. clapedianus</i>			AF325984*					U.S.A., Colorado, Windy Gap, Beauchamp et al. 2001		
CE1177	<i>L. maumeensis</i>	Hap30	KY369474	KY369378	KY369459	SMNH 159221	31 N	93 W	U.S.A., Louisiana, Turtle-rearing pond	8-Oct-2005	Stephen Atkinson
CE1178	<i>L. maumeensis</i>	Hap30	KY369475	KY369379	KY369460	SMNH 159222	31 N	93 W	U.S.A., Louisiana, Turtle-rearing pond	8-Oct-2005	Stephen Atkinson
CE1179	<i>L. maumeensis</i>	Hap30	KY369476	KY369380	KY369461	SMNH 159223	31 N	93 W	U.S.A., Louisiana, Turtle-rearing pond	8-Oct-2005	Stephen Atkinson
CE4925	<i>L. maumeensis</i>	Hap29	KY369548	KY369381	KY369462	SMNH 159224	43.20 N	79.26 W	Canada, Ontario, from ship hull fouling in Great Lakes	Sep 2008	Francisco Sylvester
CE16725	" <i>L. clapedianus-cervix</i> "	Hap32	KY369620			SMNH 159225	46 N	21 E	Collected somewhere in Romania; but obtained from petshop in Pécs, Hungary	1-Nov-2012	Lászlo Molnár
CE2128	" <i>L. clapedianus-cervix</i> "	Hap31	KY369488	KY369307	KY369387	SMNH 159226	52.283 N	8.033 E	Germany, Osnabrück, lab culture at Zool Dep, Univ Osnabrück	16-Nov-2006	Annette Bergter
CNH1	" <i>L. clapedianus-cervix</i> "	Hap34	KY369678			SMNH 159227	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH18	" <i>L. clapedianus-cervix</i> "	Hap33	KY369686			SMNH 159228	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH23	" <i>L. clapedianus-cervix</i> "	Hap33	KY369689			SMNH 159229	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH31	" <i>L. clapedianus-cervix</i> "	Hap33	KY369692	KY369309	KY369389	SMNH 159230	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH32	" <i>L. clapedianus-cervix</i> "	Hap33	KY369693			SMNH 159231	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH37	" <i>L. clapedianus-cervix</i> "	Hap36	KY369694			SMNH 159232	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH40	" <i>L. clapedianus-cervix</i> "	Hap35	KY369696			SMNH 159233	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH45	" <i>L. clapedianus-cervix</i> "	Hap34	KY369698			SMNH 159234	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNH8	" <i>L. clapedianus-cervix</i> "	Hap33	KY369682	KY369308	KY369388	SMNH 159235	34.106 N	108.646 E	China, Shaanxi, Xi'an, Huxian, a small river	12-Jun-2013	Yingkui Liu
CNJ5	" <i>L. clapedianus-cervix</i> "	Hap34	KY369701			SMNH 159236	34.019 N	108.765 E	China, Shaanxi, Xi'an, Jingjia, Chanhe River	12-Jun-2013	Yingkui Liu
CNK43	" <i>L. clapedianus-cervix</i> "	Hap33	KY369707			SMNH 159237	34.011 N	109.172 E	China, Shaanxi, Xi'an, Ku Yu valley above 1000 m a s l)	12-Jun-2013	Yingkui Liu
CNK45	" <i>L. clapedianus-cervix</i> "	Hap36	KY369708			SMNH 159238	34.011 N	109.172 E	China, Shaanxi, Xi'an, Ku Yu valley above 1000 m a s l)	12-Jun-2013	Yingkui Liu
CNK47	" <i>L. clapedianus-cervix</i> "	Hap36	KY369709	KY369310	KY369390	SMNH 159239	34.011 N	109.172 E	China, Shaanxi, Xi'an, Ku Yu valley above 1000 m a s l)	12-Jun-2013	Yingkui Liu
CNK48	" <i>L. clapedianus-cervix</i> "	Hap33	KY369710			SMNH 159240	34.011 N	109.172 E	China, Shaanxi, Xi'an, Ku Yu valley above 1000 m a s l)	12-Jun-2013	Yingkui Liu
CNK49	" <i>L. clapedianus-cervix</i> "	Hap33	KY369711	KY369311	KY369391	SMNH 159241	34.011 N	109.172 E	China, Shaanxi, Xi'an, Ku Yu valley above 1000 m a s l)	12-Jun-2013	Yingkui Liu
CNWQ37	" <i>L. clapedianus-cervix</i> "	Hap33	KY369733			SMNH 159242	34.143 N	108.9 E	China, Shaanxi, Xi'an, Wenguobao, Yuhe River	12-Jun-2013	Yingkui Liu
CNWQ6	" <i>L. clapedianus-cervix</i> "	Hap36	KY369723			SMNH 159243	34.143 N	108.9 E	China, Shaanxi, Xi'an, Wenguobao, Yuhe River	12-Jun-2013	Yingkui Liu
	" <i>L. clapedianus-cervix</i> "			JF783983					(undescribe loction), Marton and Eszterbauer 2012		
	" <i>L. clapedianus-cervix</i> "			EU160485					U.S.A., New York, Mackie JA,et al.2010		
CE10860	<i>L. hoffmeisteri</i> unlabelled	Hap1	KY369607			SMNH 159244	30.971 N	90.289 W	U.S.A., Louisiana, Washington Co., Silver Creek, at bridge near Mount Hermon, muddy sand on banks and in water	17-Jan-2011	Christer Erséus
CE7448	<i>L. hoffmeisteri</i> unlabelled	Hap52	KY369570			SMNH 159245	13.15 N	80.17 E	India,Tamil Nadu, Chennai, freshwater lake	1-Mar-2010	Mohammed I. Naveed
CNJ16	<i>L. hoffmeisteri</i> unlabelled	Hap37	KY369704			SMNH 159246	34.019 N	108.765 E	China, Shaanxi, Xi'an, Jingjia, Chanhe River	12-Jun-2013	Yingkui Liu
	<i>L. hoffmeisteri</i> unlabelled	Hap8	LN810314						Switzerland, stream in the canton of Vaud, Vivien et al. 2015		
	<i>L. hoffmeisteri</i> unlabelled			AF325978					U.S.A., Colorado, Windy Gap, Beauchamp et al. 2001		
	<i>L. hoffmeisteri</i> unlabelled			AF325981					U.S.A., Colorado, Windy Gap, Beauchamp et al. 2001		
	<i>L. hoffmeisteri</i> unlabelled			AF325976					U.S.A., Colorado, Windy Gap, Beauchamp et al. 2006		
	<i>L. hoffmeisteri</i> unlabelled			AF325977					U.S.A., Colorado, Windy Gap, Beauchamp et al. 2006		
	<i>L. hoffmeisteri</i> unlabelled			EU160488					U.S.A., New York, Hudson River, Mackie JA,et al.2010		

