Table S1.

Individual-level morphometric and hydrological covariates used in the analysis of shell inflation/convexity. PC1 scores were obtained from elliptical Fourier analysis of the dorsal/articulated-valve shell profile. Stream order, long-term average discharge, and upstream area were extracted from the nearest mapped HydroRIVERS river reach [52].

#	Sample ID	Species label	PC1	Shell length (mm)	Stream order	Long-term average discharge (m^3/s)	Upstream area (km^2)
1	O-03	*Obovalis omiensis*	−0.0475068223153354	32.05	1	0.158	4
2	O-04	*O. omiensis*	−0.00714822856086318	49.91	1	0.528	13.5
3	O-05	*O. omiensis*	−0.0508877355510682	63.8	2	0.547	13.6
4	O-06	*O. omiensis*	−0.0375910399773605	43.62	3	7.346	209.7
5	O-07	*O. omiensis*	−0.0476253863692988	55.88	3	7.346	209.7
6	O-08	*O. omiensis*	−0.0362460886354441	45.07	3	7.346	209.7
7	O-09	*O. omiensis*	−0.0254342648236841	48.06	3	12.406	343.2
8	O-10	*O. omiensis*	−0.0158982338043909	73.87	3	12.406	343.2
9	O-11	*O. omiensis*	−0.00912345716263671	50.79	3	12.406	343.2
10	O-12	*O. omiensis*	−0.00780392837743301	38.95	3	12.406	343.2
11	O-13	*O. omiensis*	−0.0145843014911696	83.71	3	11.488	312.7
12	O-14	*O. omiensis*	−0.0254228404627412	50.22	4	32.418	1168.6
13	O-15	*O. omiensis*	−0.0333380534881724	59.7	1	0.194	9.5
14	O-16	*O. omiensis*	−0.0592897293413757	78.23	1	0.194	9.5
15	O-17	*O. omiensis*	−0.0711738462567897	111.37	1	0.252	9.7
16	O-18	*O. omiensis*	−0.0502917468117932	88.71	1	0.252	9.7
17	O-19	*O. omiensis*	−0.0336125925736194	52.4	1	0.252	9.7
18	O-20	*O. omiensis*	−0.027690271916518	68.38	1	0.252	9.7
19	O-21	*O. convexum* Sano & Kondo sp. nov.	0.011726368337458	85.9	1	0.252	9.7
20	O-22	*O. convexum* Sano & Kondo sp. nov.	0.008719416736018	80.59	1	1.083	17.6
21	O-23	*O. convexum* Sano & Kondo sp. nov.	0.030516148089530	98.86	2	2.07	56.7
22	O-24	*O. convexum* Sano & Kondo sp. nov.	0.023778758056460	112.76	2	2.07	56.7
23	O-25	*O. convexum* Sano & Kondo sp. nov.	0.002195570594439	71.72	2	2.07	56.7
24	O-26	*O. convexum* Sano & Kondo sp. nov.	0.004871836435148	88.98	1	1.083	17.6
25	O-27	*O. convexum* Sano & Kondo sp. nov.	0.019406664913859	68.81	1	1.083	17.6
26	O-28	*O. convexum* Sano & Kondo sp. nov.	0.038483345240876	73.05	1	1.083	17.6
27	O-29	*O. convexum* Sano & Kondo sp. nov.	0.045112305371027	77.43	1	1.083	17.6
28	O-30	*O. convexum* Sano & Kondo sp. nov.	0.015205597413546	83.81	1	1.083	17.6
29	O-31	*O. convexum* Sano & Kondo sp. nov.	0.043673911627034	72.28	1	1.083	17.6
30	O-32	*O. convexum* Sano & Kondo sp. nov.	0.062788125025130	78.13	1	0.998	18.2
31	O-33	*O. convexum* Sano & Kondo sp. nov.	0.092874817371382	72.48	1	0.998	18.2
32	O-34	*O. convexum* Sano & Kondo sp. nov.	0.045926336348587	79.96	1	0.998	18.2
33	O-35	*O. convexum* Sano & Kondo sp. nov.	0.048546132990862	75.79	1	0.998	18.2
34	O-36	*O. convexum* Sano & Kondo sp. nov.	0.055129181484177	73.44	1	0.998	18.2
35	O-37	*O. convexum* Sano & Kondo sp. nov.	0.060860391333164	71.24	1	0.998	18.2
36	O-38	*O. convexum* Sano & Kondo sp. nov.	0.001790909392677	50.7	1	0.885	22.5
37	O-39	*O. convexum* Sano & Kondo sp. nov.	−0.010937248841678	60.07	1	0.885	22.5

[52] Lehner B, Grill G. 2013. Global river hydrography and network routing: baseline data and new approaches to study the world's large river systems. *Hydrological Processes* 27(15):2171−2186