

*Animal Biology*

**Cerebellum size is positively correlated with geographic distribution range in  
anurans**

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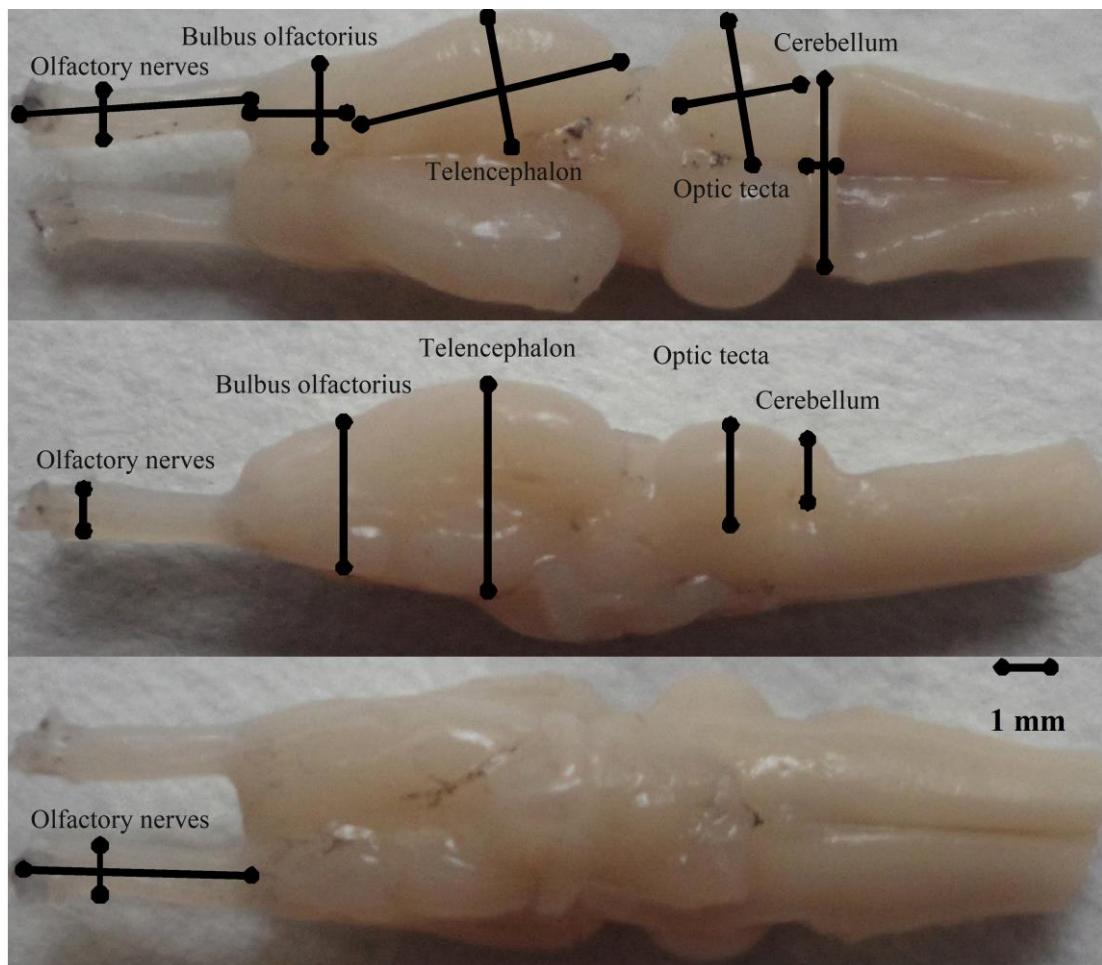
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**Supplementary Material**



**Figure S1.** Dorsal, ventral and lateral views of the brain in anurans. Olfactory nerves, Bulbus olfactorius, telencephalon, optic tectum and cerebellum of length, width and height are shown.

**Table S1.** Descriptive information about species, mean body size, and overall brain size and the size of brain regions in 42 species of anurans.

Species	Snout–vent length (mm)	Olfactory nerves (mm <sup>3</sup> )	Olfactory bulbs (mm <sup>3</sup> )	Telencephalon (mm <sup>3</sup> )	Optic tectum (mm <sup>3</sup> )	Cerebellum (mm <sup>3</sup> )	Brain size (mm <sup>3</sup> )	Geographic centroid's latitude	Geographical range (km <sup>2</sup> )
<i>Amolops granulosus</i>	32.6	0.12	0.22	3.53	3.66	0.67	13.37	30.917	141005
<i>Amolops lisanensis</i>	52.8 ± 1.6	0.54 ± 0.18	0.45 ± 0.07	9.07 ± 1.15	5.29 ± 0.82	0.48 ± 0.08	28.84 ± 3.48	31.265	14981
<i>Amolops looensis</i>	52.4 ± 0.8	0.27 ± 0.07	1.38 ± 0.18	14.27 ± 0.04	6.82 ± 0.26	0.64 ± 0.04	35.81 ± 1.96	28.938	35253
<i>Amolops mantzorum</i>	53.8 ± 1.2	0.33 ± 0.08	0.89 ± 0.18	10.47 ± 1.41	5.33 ± 0.77	0.39 ± 0.08	29.73 ± 2.30	29.963	95633
<i>Bombina maxima</i>	58.1 ± 1.1	0.27 ± 0.03	1.05 ± 0.09	13.16 ± 0.78	2.59 ± 0.14	0.27 ± 0.06	23.59 ± 1.25	27.120	185542
<i>Brachytarsophrys chuannanensis</i>	101.9 ± 7.6	1.37 ± 0.86	0.94 ± 0.07	19.62 ± 0.41	6.55 ± 0.50	0.27 ± 0.06	43.23 ± 0.54	28.645	503
<i>Brachytarsophrys feae</i>	95.6	1.26	1.73	7.28	3.46	0.47	23.11	24.722	3479
<i>Bufo gargarizans</i>	99.5 ± 3.6	1.29 ± 0.26	4.75 ± 0.41	30.6 ± 2.22	8.87 ± 0.58	0.92 ± 0.08	66.86 ± 3.55	38.713	4695602
<i>Bufo melanostictus</i>	54.6	0.44	1.22	13.73	3.26	0.5	25.96	23.627	1002245
<i>Chaparana quadrana</i>	71.1 ± 3.9	0.42 ± 0.03	0.43 ± 0.12	12.35 ± 0.67	7.49 ± 1.33	0.48 ± 0.07	33.60 ± 2.17	31.955	294841
<i>Fejervarya multistriata</i>	38.1 ± 1.3	0.12 ± 0.06	0.68 ± 0.11	7.66 ± 0.55	4.61 ± 0.23	0.26 ± 0.07	21.07 ± 1.23	29.200	5397
<i>Hyla annectans jingdongensis</i>	33.5 ± 0.9	0.01 ± 0.06	0.45 ± 0.04	5.93 ± 0.33	2.18 ± 0.20	0.36 ± 0.02	11.43 ± 0.58	26.911	1040706
<i>Hyla tsinlingensis</i>	32.1 ± 0.5	0.05 ± 0.01	0.41 ± 0.03	3.29 ± 0.27	1.39 ± 0.04	0.18 ± 0.04	7.99 ± 0.17	33.074	113665
<i>Hylarana dauchina</i>	43.7 ± 0.2	0.15 ± 0.04	0.48 ± 0.08	6.70 ± 0.31	4.74 ± 0.46	0.29 ± 0.05	19.66 ± 1.13	29.409	98207
<i>Hylarana guentheri</i>	58.8 ± 0.7	1.01 ± 0.10	1.06 ± 0.08	14.24 ± 0.77	10.47 ± 0.49	0.67 ± 0.04	40.49 ± 1.68	25.269	1621372
<i>Kaloula rugifera</i>	38.9 ± 1.3	0.08 ± 0.01	0.71 ± 0.03	4.21 ± 0.22	1.10 ± 0.17	0.30 ± 0.01	8.18 ± 0.17	30.765	62759
<i>Kaloula verrucosa</i>	39.2 ± 0.9	0.38 ± 0.02	0.77 ± 0.10	9.23 ± 0.79	3.02 ± 0.40	0.35 ± 0.03	20.02 ± 1.22	25.816	377976
<i>Megophryshapingensis</i>	72.6 ± 2.1	0.61 ± 0.22	0.74 ± 0.28	9.51 ± 1.32	3.28 ± 0.77	0.40 ± 0.02	22.55 ± 0.62	29.487	85886
<i>Microhyla ornata</i>	20.6 ± 0.4	0.01 ± 0.00	0.06 ± 0.02	2.56 ± 0.13	0.76 ± 0.03	0.06 ± 0.01	4.90 ± 0.32	26.996	2471739

<i>Nanorana parkeri</i>	54.7 ± 1.0	0.16 ± 0.01	0.74 ± 0.11	7.23 ± 1.17	3.34 ± 0.37	0.23 ± 0.02	17.86 ± 2.37	31.865	304052
<i>Nanorana ventripunctata</i>	35.5 ± 0.5	0.05 ± 0.01	0.19 ± 0.03	6.92 ± 1.35	2.77 ± 0.12	0.16 ± 0.39	14.03 ± 1.10	27.758	13065
<i>Odorrana grahami</i>	67.6 ± 2.5	1.24 ± 0.14	1.66 ± 0.14	18.4 ± 01.31	11.68 ± 0.53	1.02 ± 0.12	55.83 ± 2.28	26.173	362017
<i>Odorrana hejiangensis</i>	46.6 ± 1.1	0.35 ± 0.01	0.65 ± 0.15	7.94 ± 0.85	4.47 ± 0.23	0.33 ± 0.04	20.74 ± 1.53	26.462	2704
<i>Odorrana margaretae</i>	72.0 ± 0.6	0.63 ± 0.19	1.93 ± 0.46	19.96 ± 1.82	16.98 ± 1.24	0.67 ± 0.09	61.82 ± 1.01	28.702	610542
<i>Odorrana schmackeri</i>	44.55 ± 0.47	0.04 ± 0.001	0.45 ± 0.02	4.25 ± 0.14	2.70 ± 0.07	0.71 ± 0.02	39.92 ± 0.83	28.547	1414748
<i>Oreolalax rugosus</i>	52.7	0.25	1.22	15.68	2.94	0.72	33.56	27.750	45317
<i>Paa boulengeri</i>	73.5 ± 6.3	3.44 ± 0.11	1.89 ± 0.14	12.93 ± 1.48	7.60 ± 0.42	0.89 ± 0.20	41.57 ± 0.45	28.500	822140
<i>Paa yunnanensis</i>	60.6 ± 4.8	2.29 ± 1.05	1.90 ± 0.10	12.87 ± 2.45	7.05 ± 0.08	1.00 ± 0.18	41.07 ± 7.54	25.340	12159
<i>Pelophylax hubeiensis</i>	38.01 ± 0.55	0.03 ± 0.001	0.27 ± 0.02	2.69 ± 0.11	2.44 ± 0.10	0.48 ± 0.04	28.88 ± 1.08	29.159	295589
<i>Pelophylax nigromaculatus</i>	67.9 ± 2.2	0.19 ± 0.01	0.42 ± 0.04	17.71 ± 1.32	6.44 ± 0.57	0.92 ± 0.08	39.70 ± 2.50	38.777	3065698
<i>Pelophylax plancyi</i>	55.3 ± 1.6	0.54 ± 0.08	0.43 ± 0.02	8.70 ± 0.13	7.39 ± 0.22	0.23 ± 0.03	27.41 ± 0.78	33.881	561843
<i>Pelophylax pleuraden</i>	45.4 ± 0.8	0.15 ± 0.08	0.48 ± 0.09	10.12 ± 1.18	6.71 ± 1.08	0.40 ± 0.07	25.76 ± 3.18	25.966	337240
<i>Polypedates megacephalus</i>	43.6 ± 1.2	0.20 ± 0.07	0.44 ± 0.07	10.64 ± 0.81	9.72 ± 0.73	0.87 ± 0.25	30.99 ± 1.91	25.911	1568015
<i>Rana chaochiaoensis</i>	50.4 ± 2.6	0.25 ± 0.04	0.74 ± 0.13	6.53 ± 0.55	5.38 ± 0.59	0.31 ± 0.05	22.87 ± 1.53	25.797	333387
<i>Rana kukunoris</i>	45.6 ± 1.8	0.15 ± 0.02	1.10 ± 1.18	8.24 ± 0.63	3.51 ± 0.28	0.22 ± 0.02	21.11 ± 1.23	35.077	322253
<i>Rana omeimontis</i>	48.0 ± 1.6	0.87 ± 0.11	1.28 ± 0.20	13.14 ± 1.42	10.99 ± 1.20	0.77 ± 0.09	39.42 ± 2.74	29.723	457698
<i>Rana zhenhaiensis</i>	52.7 ± 2.9	0.38 ± 0.11	0.71 ± 0.31	8.58 ± 1.71	3.45 ± 1.21	0.50 ± 0.10	21.04 ± 1.89	27.224	671128
<i>Rhacophorus chenfui</i>	38.6 ± 0.7	0.09 ± 0.02	0.60 ± 0.23	7.92 ± 1.00	3.42 ± 0.43	0.26 ± 0.01	17.70 ± 72.96	29.384	159407
<i>Rhacophorus dennysi</i>	74.9 ± 3.37	0.46 ± 0.08	2.15 ± 0.32	13.55 ± 2.09	7.53 ± 0.38	0.73 ± 0.08	94.78 ± 2.65	26.600	805179
<i>Rhacophorus dugritei</i>	42.2 ± 0.6	0.07 ± 0.01	0.31 ± 0.03	10.64 ± 0.40	4.43 ± 0.35	0.45 ± 0.04	23.18 ± 0.83	26.647	196790
<i>Rhacophorus omeimontis</i>	59.8 ± 1.7	0.31 ± 0.04	0.99 ± 0.16	15.81 ± 0.75	9.79 ± 0.79	0.90 ± 0.16	44.69 ± 2.88	28.087	196604
<i>Scutiger muliensis</i>	62.5 ± 0.40	1.13 ± 0.05	1.83 ± 0.02	14.45 ± 2.61	3.98 ± 0.84	0.33 ± 0.09	33.86 ± 5.91	28.265	2784