



Table A1. Two independent sample *t*-test results. Tests on U^H/S^0 results at 4 and 8 spans points along the urostyle (at left and right sides of the table respectively) using data from Table 1 (pairs 1–6). Pairs 7–22 compare the 4 Greyfriars' urostyles (GF1–GF4) with known species (N.B. these are separated by horizontal lines). Closest matches are bolded and underlined; least matching are bold italic. Key; SEM=standard error on the mean, *t*=Student's statistic, *df*=degrees of freedom, sig.=significance. Sample numbers available (*n*), *R. arvalis* 10, *R. temporaria* 12 (except rows 23–24 (later tests) where *n*=20), *P. lessonae* 20, *R. dalmatina* 6, and 4 sub-fossils from the Greyfriars' well (GF1–GF4).

Pair	2-tailed t-tests on urostyle height: at 4 SPANS							At 8 SPANS				
	Species	Mean	SD	SEM	t	df	Sig.	Mean	SD	SEM	t	Sig.
1	<i>R. temporaria</i>	1.36	0.20	0.06	8.79	30	<0.0005	0.97	0.13	0.04	-6.64	<0.0005
	<i>P. lessonae</i>	1.97	0.18	0.04				1.54	0.28	0.06		
2	<i>R. arvalis</i>	1.74	0.16	0.05	4.79	20	<0.0005	1.38	0.19	0.06	5.95	<0.0005
	<i>R. temporaria</i>	1.36	0.20	0.06				0.97	0.13	0.04		
3	<i>P. lessonae</i>	1.97	0.18	0.04	3.42	28	0.002	1.54	0.28	0.06	-1.62	0.117
	<i>R. arvalis</i>	1.74	0.16	0.05				1.38	0.19	0.06		
4	<i>R. dalmatina</i>	1.78	0.17	0.07	2.19	24	0.04 *	1.34	0.15	0.06	-1.68	0.10
	<i>P. lessonae</i>	1.97	0.18	0.04				1.54	0.28	0.06		
5	<i>R. dalmatina</i>	1.78	0.17	0.07	-4.42	16	<0.0005	1.34	0.15	0.06	5.55	<0.0005
	<i>R. temporaria</i>	1.36	0.20	0.06				0.97	0.13	0.04		
6	<i>R. dalmatina</i>	1.78	0.17	0.07	-0.58	14	0.57	1.34	0.15	0.06	-0.14	0.89
	<i>R. arvalis</i>	1.74	0.16	0.05				1.38	0.19	0.06		
7	Greyfriars GF1	1.60	.	.	1.11	11	0.29	1.15	.	.	1.29	0.23
	<i>R. temporaria</i>	1.37	0.20	0.06				0.97	0.13	0.04		
8	Greyfriars GF1	1.60	.	.	-0.81	9	<u>0.44</u>	1.15	.	.	-1.06	<u>0.32</u>
	<i>R. arvalis</i>	1.74	0.16	0.05				1.38	0.19	0.06		
9	Greyfriars GF1	1.60	.	.	-1.97	19	<u>0.06</u>	1.15	.	.	-1.37	<u>0.19</u>
	<i>P. lessonae</i>	1.97	0.18	0.04				1.54	0.28	0.06		
10	Greyfriars GF1	1.60	.	.	-1.00	5	0.36	1.15	.	.	-1.18	0.29
	<i>R. dalmatina</i>	1.78	0.17	0.07				1.34	0.15	0.06		
11	Greyfriars GF2	2.20	.	.	-4.04	11	<u><0.0005</u>	1.70	.	.	5.23	<u><0.0005</u>
	<i>R. temporaria</i>	1.36	0.20	0.06				0.97	0.13	0.04		
12	Greyfriars GF2	2.20	.	.	-2.80	9	0.02	1.70	.	.	1.60	0.14
	<i>R. arvalis</i>	1.74	0.16	0.05				1.38	0.19	0.06		
13	Greyfriars GF2	2.20	.	.	-1.27	19	<u>0.22</u>	1.70	.	.	0.56	<u>0.58</u>
	<i>P. lessonae</i>	1.97	0.18	0.04				1.54	0.28	0.06		
14	Greyfriars GF2	2.20	.	.	2.26	5	0.07	1.70	.	.	-1.93	0.11
	<i>R. dalmatina</i>	1.78	0.17	0.07				1.34	0.15	0.06		

Table A1. Continued.

Pair	2-tailed t-tests on urostyle height: at 4 SPANS							At 8 SPANS				
	Species	Mean	SD	SEM	t	df	Sig.	Mean	SD	SEM	t	Sig.
15	Greyfriars GF3	1.75	.	.	1.83	11	0.09	1.25	.	.	2.00	0.07
	<i>R. temporaria</i>	1.37	0.20	0.06				0.97	0.13	0.04		
16	Greyfriars GF3	1.75	.	.	0.09	9	0.93	1.25	.	.	-0.59	0.57
	<i>R. arvalis</i>	1.74	0.16	0.05				1.38	0.19	0.06		
17	Greyfriars GF3	1.75	.	.	-1.16	19	0.26	1.25	.	.	-1.02	0.32
	<i>P. lessonae</i>	1.97	0.18	0.04				1.54	0.28	0.06		
18	Greyfriars GF3	1.75	.	.	-0.18	5	0.86	1.25	.	.	-0.56	0.60
	<i>R. dalmatina</i>	1.78	0.17	0.07				1.34	0.15	0.06		
19	Greyfriars GF4	1.90	.	.	2.54	11	0.03	1.65	.	.	4.87	<0.0005
	<i>R. temporaria</i>	1.37	0.20	0.06				0.97	0.13	0.04		
20	Greyfriars GF4	1.90	.	.	0.99	9	0.35	1.65	.	.	1.30	0.23
	<i>R. arvalis</i>	1.74	0.16	0.05				1.38	0.20	0.06		
21	Greyfriars GF4	1.90	.	.	-0.35	19	0.73	1.65	.	.	0.39	0.70
	<i>P. lessonae</i>	1.97	0.18	0.04				1.54	0.28	0.06		
22	Greyfriars GF4	1.90	.	.	0.63	5	0.55	1.65	.	.	1.92	0.11
	<i>R. dalmatina</i>	1.78	0.17	0.07				1.34	0.15	0.06		
23	GF2-4	1.95	0.23	0.13	-4.89	21	<0.0001	1.53	0.25	0.14	-6.70	<0.00001
	<i>R. temporaria</i>	1.34	0.20	0.04				0.94	0.13	0.03		
24	GF2-4 MATURE	2.22	0.25	0.14	-7.33	21	< 1x10 ⁻⁸	1.81	0.25	0.14	-10.4	< 1x10 ⁻⁹
	<i>R. temporaria</i>	1.34	0.13	0.03				0.94	0.13	0.03		

* Holm's sequential Bonferroni test showed that p for Pair 4 at 4 spans (0.04) is now not significant.

Table A2. Summary of sample population measurement, statistics and abbreviations. Urostyle statistics are displayed at A-C & F, ilial statistics at D-E & G. H gives bone proportions relative to body lengths (SVL). Estimated proportions and size at maturity for GF2-4 are given at J and an abbreviation reference at K.

A LENGTH DATA: ALL UROSTYLES					
SPECIES	<i>R. arvalis</i>		<i>R. temporaria</i>		<i>P. lessonae</i>
Mean Length mm	12.03		19.19		15.38
Number (n) & s.d. (italics)	12	4.49	11	3.75	45 4.5
B UROSTYLES OF ESTIMATED MATURE LENGTH ≥ 13.97 mm					
Mean Length mm	15.95		19.79		17.74
Number (n) & s.d. (italics)	6	0.8	10	3.35	32 2.36
C <i>R. arvalis</i> & <i>P. lessonae</i> individuals combined; avg. U ^l 17.46 mm.					
D LENGTH DATA: ALL ILIA					
Mean Length (mm) *	12.17		19.28		15.71
Number (n) & s.d. (italics)	12	4.48	12	3.66	45 4.51
* Measured from anterior tip to acetabulum anterior edge					
E ILIA OF ESTIMATED MATURE LENGTH ≥ 14 mm					
Mean (mm)	16.32		19.81		18.82
Number (n) & s.d. (italics)	5	0.86	11	3.31	25 2.44
F ESTIMATED AVG. U ^h CHANGE (ΔU ^h) PER MM U ^l CHANGE (ΔU ^l) (= ΔU ^h /ΔU ^l) (Fig. 9A-C) IN UNITS OF S ^ø (posterior shaft diameter (Fig 4))					
	<i>R. arvalis</i>		<i>R. temporaria</i>		<i>P. lessonae</i>
At 4S	0.04		0.006		0.047
At 8S	0.033		-0.009		0.043
G ESTIMATED AVG. I ^h CHANGE PER MM CHANGE IN I ^l (= ΔI ^h /ΔI ^l). GIVEN AS FRACTIONS OF DISTANCE A'-A (Fig 6)					
At point b	0.018		0.0002		0.0085
At point c	0.013		0.0018		0.0036
H BODY LENGTH (SVL) DIVIDED BY U ^l & I ^l					
SVL/U ^l = 3.58 (n=12 {9 x <i>P. less.</i> , 3 x <i>R. arv.</i> } s.d. 0.2). SVL/I ^l = 3.57 (s.d. 0.23)					
J* SUB-FOSSIL (GF2-4) UROSTYLES					
	GF2	GF3	GF4	Unit	
1 Length of fragment found	13.4	11.6	10.6	mm	
2 Extrapolated "in-life" U ^l length	16.75	13.2	12.67	mm	
3 17.46mm (row C) minus row 2 U ^l (above)	0.71	4.31	4.79	mm	
4 Original height at 4 spans (4S)	2.2	1.75	1.9	S ^ø	
5 Original height at 8 spans (8S)	1.7	1.25	1.65	S ^ø	
6 Extrapolated new U ^h , 4S, if <i>R. arvalis</i>	2.23	1.92	2.09	S ^ø	
7 Extrapolated new U ^h , 8S, if <i>R. arvalis</i>	1.72	1.39	1.81	S ^ø	
8 Extrapolat. new U ^h , 4S, if <i>P. lessonae</i>	2.23	1.95	2.13	S ^ø	
9 Extrapolat. new U ^h , 8S, if <i>P. lessonae</i>	1.73	1.44	1.86	S ^ø	
10 Extrapolated SVLs	60	47	45	mm	
* A section headed "I" was avoided to remove confusion with "1".					
K TERMS & ABBREVIATIONS REFERENCE					
Avg. =Average, df=degrees of freedom, S ^ø =shaft diameter, U ^l =Urostyle length, U ^h =urostyle height, I ^h =ilial height, I ^l =ilial length (for measuring positions see Methods). ΔU ^h =change in U ^h . Δy/Δx=change in y in relation to quantity x, here, ΔU ^h relative to per mm ΔU ^l .					

Table A3. T-test results comparing I^H differences at points *b* and *c* on the ilium (Fig. 7). The closest matches to the Greyfriars ilium is bolded and underlined, the least similar is in bold italic. Sample numbers: 16 *R. arvalis*, 14 *R. temporaria*, 24 *P. lessonae*, 6 *R. dalmatina*, and 1 sub-fossil ilium from the Greyfriars' well.

Ilium Statistics: 2-tailed t-tests on relative Ala + Vexillum height												
Pair	Species	Height b-b'						Height c-c'				
		Mean	SD	SEM	t	df	Sig.	Mean	SD	SEM	t	Sig.
1	<i>R. temporaria</i>	0.70	0.12	0.03	-11.30	36	<0.0005	0.71	0.08	0.02	-5.2	<0.0005
	<i>P. lessonae</i>	1.06	0.08	0.02				0.84	0.07	0.01		
2	<i>R. arvalis</i>	1.09	0.09	0.02	1.31	38	0.20	0.92	0.12	0.03	2.84	0.01
	<i>P. lessonae</i>	1.06	0.08	0.02				0.84	0.07	0.01		
3	<i>R. arvalis</i>	1.09	0.09	0.02	10.20	28	<0.0005	0.92	0.12	0.03	5.75	<0.0005
	<i>R. temporaria</i>	0.70	0.12	0.03				0.71	0.08	0.02		
4	<i>R. dalmatina</i>	1.15	0.10	0.04	2.25	27	0.03	1.09	0.11	0.04	6.98	<0.0005
	<i>P. lessonae</i>	1.06	0.08	0.02				0.84	0.07	0.01		
5	<i>R. dalmatina</i>	1.15	0.10	0.04	7.87	18	<0.0005	1.09	0.11	0.04	8.74	<0.0005
	<i>R. temporaria</i>	0.70	0.12	0.03				0.71	0.08	0.02		
6	<i>R. dalmatina</i>	1.15	0.10	0.04	1.14	20	0.27	1.09	0.11	0.04	3.08	0.01
	<i>R. arvalis</i>	1.09	0.09	0.02				0.92	0.12	0.03		
7	Greyfriars ilium	0.79	.	.	-0.74	13	<u>0.47</u>	0.73	.	.	0.27	<u>0.79</u>
	<i>R. temporaria</i>	0.70	0.12	0.03				0.71	0.08	0.02		
8	Greyfriars ilium	0.79	.	.	3.24	15	0.01	0.73	.	.	-1.6	0.13
	<i>R. arvalis</i>	1.09	0.09	0.02				0.92	0.12	0.03		
9	<i>R. dalmatina</i>	1.15	0.10	0.04	3.20	5	0.02	1.09	0.11	0.04	3.14	<u>0.03</u>
	Greyfriars ilium	0.79	.	.				0.73	.	.		
10	<i>P. lessonae</i>	1.06	0.08	0.02	3.30	22	<0.003	0.84	0.07	0.01	1.58	0.13
	Greyfriars ilium	0.79	.	.				0.73	.	.		