

**The shell measurements that best describe sexual dimorphism in the spur-thighed
tortoise *Testudo graeca* from Algeria**

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SUPPLEMENTARY MATERIAL

Table S1: Abbreviations and explanations of the 34 morphometric measurements assessed for *T. g. whitei*. See Fig. 2 for a visual identification.

Carapace		Plastron	
Abbreviation	Description	Abbreviation	Description
SCL	The right length from the outer limit of the nuchal plate to the outer limit of the supracaudal	APW	Widest anterior plastral lobe width
CCL	Longer curvilinear carapace length	GSL	Longest gular scute length
NL	The longest nuchal scute length	GSW	Widest gular scute width
NW1	The narrowest nuchal scute width	HSL	Longest humeral scute length
NW2	The widest nuchal scute width	HSW	Widest humeral scute width
ACW	Anterior carapace width (between the right and left seams between the first and second marginal scutes)	PSL	Longest pectoral scute length
ML1	First marginal scute length	PSW	Widest pectoral scute width
MW1	First marginal scute width	ABSL	Longest abdominal scute length
MW2	Second marginal scute width	ABSW	Widest abdominal scute width
COSL2	Second costal scute length	FSL	Longest femoral scute length
VW3	Third vertebral scute width	FSW	Widest femoral scute width
VAW5	Fifth vertebral scute anterior width	PW	Widest plastron width (at the level of the seam between the pectoral and abdominal plastral scutes)
VL5	Fifth vertebral scute length	PPW1	Posterior plastron width between the tips of anal scutes
SCW1	Narrowest supracaudal scute width	PPW2	Widest posterior plastral lobe width
SCW2	Widest supracaudal scute width	CW1	Medial carapace width
SSL	Medial the supracaudal scute length	CW2	Widest carapace width
VLL	Vertebral curvilinear length (the medial line across all five vertebral scutes)	PL	Longest plastron length (from the tip of the right gular scute to that of the right anal scute)

Table S2: Measurement means after size correction in ANCOVAs.

	Female (mean)	Female (sd)	Male (mean)	Male (sd)
SCL	NA	NA	NA	NA
CCL	5,29	0,16	5,17	0,09
NL	2,47	0,10	2,40	0,09
NW1	1,13	0,03	1,18	0,05
NW2	1,78	0,02	1,66	0,02
ACW	3,72	0,13	3,71	0,10
ML1	3,09	0,13	2,98	0,06
MW1	3,19	0,14	3,12	0,09
MW2	3,15	0,15	3,05	0,08
COSL2	3,46	0,21	3,24	0,07
VW3	3,84	0,19	3,68	0,09
VAW5	3,09	0,18	3,02	0,14
VL5	3,54	0,16	3,46	0,12
SCW1	3,16	0,14	3,05	0,12
SCW2	3,73	0,14	3,72	0,12
SSL	3,15	0,13	3,16	0,10
VLL	5,09	0,17	4,92	0,09
APW	2,98	0,01	3,05	0,03
GSL	2,97	0,20	2,88	0,10
GSW	2,56	0,11	2,56	0,04
HSL	3,47	0,14	3,42	0,09
HSW	3,57	0,14	3,49	0,08
PSL	3,44	0,16	3,25	0,05
PSW	3,97	0,16	3,86	0,09
ABSL	3,90	0,19	3,70	0,09
ABSW	3,99	0,16	3,88	0,09
FSL	3,56	0,19	3,42	0,10
FSW	3,62	0,15	3,52	0,08
PW	4,57	0,15	4,50	0,09
PPW1	3,47	0,08	3,62	0,11
PPW2	4,31	0,16	4,20	0,08
CW1	4,70	0,15	4,59	0,09
CW2	4,74	0,16	4,65	0,09
PL1	NA	NA	NA	NA

Table S3: Loadings of the retained PC axes.

	PC1	PC2
SCL	-0,199	0,028
CCL	-0,198	0,019
NL	-0,133	0,062
NW1	-0,035	0,143
NW2	-0,016	0,274
ACW	-0,175	-0,119
ML1	-0,166	0,118
MW1	-0,190	-0,059
MW2	-0,185	-0,002
COSL2	-0,185	0,229
VW3	-0,194	0,120
VAW5	-0,165	-0,082
VL5	-0,180	-0,114
SCW1	-0,165	-0,026
SCW2	-0,170	-0,307
SSL	-0,157	-0,280
VLL	-0,193	0,112
APW	-0,034	-0,340
GSL	-0,183	-0,002
GSW	-0,136	-0,243
HSL	-0,161	-0,139
HSW	-0,195	-0,004
PSL	-0,171	0,151
PSW	-0,197	0,050
ABSL	-0,189	0,160
ABSW	-0,198	0,034
FSL	-0,194	0,074
FSW	-0,197	0,023
PW	-0,159	0,032
PPW1	-0,069	-0,573
PPW2	-0,198	0,042
CW1	-0,198	0,057
CW2	-0,199	0,031
PL1	-0,196	0,091
Standard deviation	4,963	1,363
Proportion of Variance	0,724	0,055
Cumulative Proportion	0,724	0,779

Table S4: PCA scores of analyzed tortoises.

Id	Sex	PC1	PC2
2	Female	-8,598	2,506
3	Female	-9,813	0,419
4	Female	-9,828	0,737
5	Female	-5,877	0,184
6	Female	-6,926	-0,785
8	Female	-6,221	-0,012
10	Female	-5,545	0,517
11	Female	-6,869	-0,349
12	Female	-6,704	0,039
13	Female	-6,703	0,052
14	Female	-5,733	-0,394
15	Female	-6,711	-0,497
17	Female	-4,482	0,799
18	Female	-3,824	-0,164
19	Female	-4,641	0,189
20	Male	-3,908	-3,5
21	Female	-2,508	0,689
22	Male	-3,113	-2,268
23	Female	-0,942	0,406
25	Female	-1,247	2,398
26	Female	-2,331	0,906
27	Female	-1,923	2,745
29	Female	-1,328	1,115
30	Female	0,009	1,947
31	Male	-0,422	-1,726
32	Male	-0,042	-0,738
33	Female	0,148	1,656
35	Female	1,776	1,802
36	Female	0,089	1,126
37	Male	0,198	-1,467
38	Male	1,509	-1,789
39	Male	1,773	-2,417
40	Male	1,498	-1,312
41	Male	1,534	-1,97
43	Male	1,879	-1,173
44	Male	2,447	-1,659
45	Female	3,536	0,571
46	Male	3,428	-0,148
47	Female	4,14	-0,661
48	Male	3,983	-0,56
49	Male	3,98	0,465
50	Female	3,417	-1,613
51	Male	4,558	-1,066
52	Male	3,883	0,058
53	Male	4,99	-0,814
54	Male	3,717	-0,91
55	Male	3,647	-0,642
56	Female	4,672	-0,791
58	Female	5,299	-0,328
59	Female	4,554	1,075
61	Female	5,978	0,648
62	Female	7,198	3,197
63	Female	7,578	0,905
64	Male	6,773	-0,105
65	Female	8,75	1,646
67	Female	9,299	1,062