

# The impact of domestication process on eggshell microstructure in *Gallus gallus*, *Anser anser* and *Anas platyrhynchos*

JOANNA ROSENBERGER<sup>1</sup> , ŁUKASZ PAWELEC<sup>2</sup> , REGINA GRUGEL<sup>1</sup> \*

<sup>1</sup>*Institute of Animal Breeding, Division of Poultry Breeding, Wrocław University of Environmental and Life Sciences, Wrocław, Poland*

<sup>2</sup>*Division of Anthropology, Institute of Environmental Biology, Wrocław University of Environmental and Life Sciences, Wrocław, Poland*

\*Corresponding author: [regina.grugel@upwr.edu.pl](mailto:regina.grugel@upwr.edu.pl)

The authors are fully responsible for both the content and the formal aspects of the electronic supplementary material. No editorial adjustments were made.

## Electronic Supplementary Material (ESM)

Figure S1. Example SEM photographs of the mammillary layer of the ancestor and domesticated forms of *Gallus gallus*

Figure S2. Example SEM photographs of the mammillary layer of the ancestor and domesticated forms of *Anser anser*

Figure S3. Example SEM photographs of the mammillary layer of the ancestor and domesticated forms of *Anas platyrhynchos*

Table S1. Two-way ANOVA (factors: 'species' and 'domestication', dependent effect: knob area, *n* knobs, coverage inner surface with knobs, mean thickness of palisade and crystalline layer, mean thickness of mammillary layer, palisade to mammillary layer ratio)



Figure S1. Example SEM photographs of the mammillary layer of the ancestor and domesticated forms of *Gallus gallus*

Each photo panel is labeled with the breed/line it refers to



Figure S2. Example SEM photographs of the mammillary layer of the ancestor and domesticated forms of *Anser anser*

Each photo panel is labeled with the breed it refers to



Figure S3. Example SEM photographs of the mammillary layer of the ancestor and domesticated forms of *Anas platyrhynchos*

Each photo panel is labeled with the breed/line it refers to

Table S1. Two-way ANOVA (factors: 'species' and 'domestication', dependent effect: knob area,  $n$  knobs, coverage inner surface with knobs, mean thickness of palisade and crystalline layer, mean thickness of mammillary layer, palisade to mammillary layer ratio)

Effect	F	P-value	Partial $\eta^2$
Knob area ( $\mu\text{m}^2$ )			
Intercept	36 578.27	<0.001	0.86
Species	995.11	<0.001	0.25
Domestication	360.66	<0.001	0.06
Species $\times$ domestication	143.51	<0.001	0.05
$n$ knobs per $\text{mm}^2$			
Intercept	3 699.33	<0.001	0.92
Species	138.46	<0.001	0.46
Domestication	5.21	0.023	0.02
Species $\times$ domestication	0.33	0.718	0.002
Coverage inner surface with knobs (%)			
Intercept	26 650.06	<0.001	0.99
Species	24.95	<0.001	0.13
Domestication	17.73	<0.001	0.05
Species $\times$ domestication	4.28	0.015	0.03
Mean thickness of palisade and crystalline layer ( $\mu\text{m}$ )			
Intercept	17 224.08	<0.001	0.97
Species	989.66	<0.001	0.77
Domestication	69.47	<0.001	0.10
Species $\times$ domestication	33.37	<0.001	0.10
Mean thickness of mammillary layer ( $\mu\text{m}$ )			
Intercept	8 685.53	<0.001	0.94
Species	885.55	<0.001	0.75
Domestication	2.53	0.112	0.004
Species $\times$ domestication	23.92	<0.001	0.07
Palisade to mammillary layer ratio			
Intercept	7 351.82	<0.001	0.93
Species	46.68	<0.001	0.14
Domestication	15.33	<0.001	0.03
Species $\times$ domestication	4.09	0.017	0.01