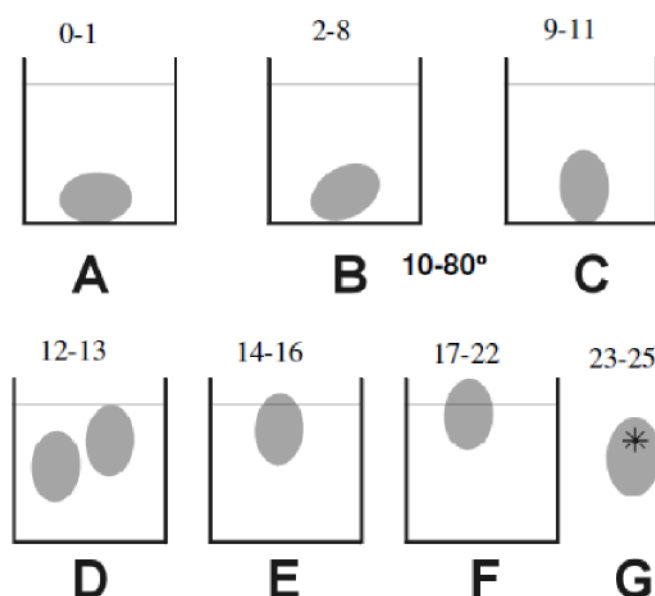


How to measure eggs in gulls

1. Sequence of laying

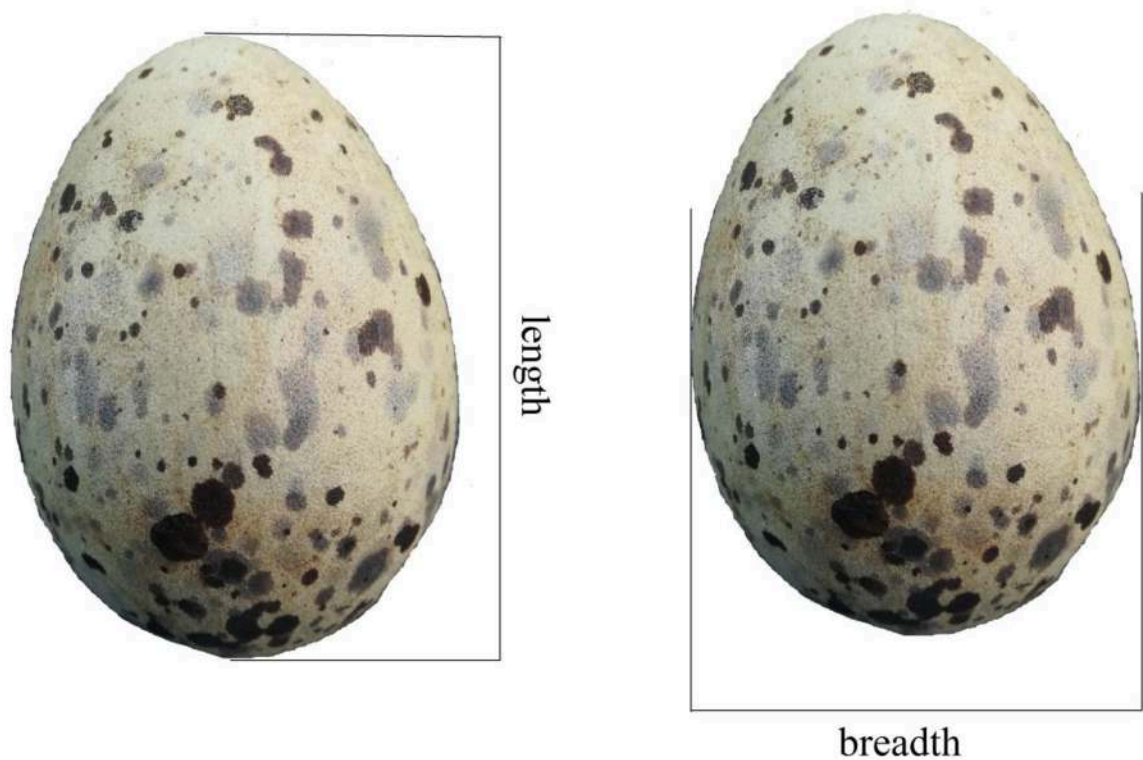
It's very important to know which egg was laid as first one (A-egg), second one (B-egg) and third one (C-egg). To do that, we have to do a 'water test'. Put the egg into the water and notice 'degree of slope' (for stage B only) or 'degree of elation' (A – the freshest egg, laid this day or 1 day ago; F – laid 17-22 days ago; G - hatching). The A-egg, laid as first, should be more advanced in embryo development than B-egg, and the B-egg should be more advanced than C-egg. For example: **A-egg** is in **F-stage**, **B-egg** is in **D-stage** and **C-egg** is in **D-stage** (but isn't touching the water surface – as in the graph below). Then you are able to notice the sequence of laying.



Ryc. 8. Skala stadiów rozwoju zarodka wg testu wodnego. Dla stadium B wyróżniano 8 faz, opisywanych przez kąt nachylenia (10-80°) osi długiej jaja do poziomu (dno naczynia). Podano przybliżony wiek jaja w dniach od złożenia. Rycinę wykonał dr Jacek Betleja (Muzeum Górnośląskie w Bytomiu)

2. Measuring

When you noticed the sequence of laying, mark the eggs by a permanent pen (A, B, C – **to remember which egg you measure**). Then go to measurements. Do it with caliper to 0.1 mm (the best). Measure length and breadth of each egg. You can also measure their masses.



3. Other things

From such measurements we can calculate volume of each egg. Note if there are some 4-, 5- or 6-eggs clutches. There are some predictors (like volume and others) which can be used to determine female's fitness and individual quality. You may also measure nests: height, depth, outer and inner diameters and notice laying dates (what you do now). Later send it to me: marcin.przymencki@wp.pl ☺

Example:

	A_length	A_breadth	B_length	B_breadth	C_length	C_breadth
nest 1						
nest 2						