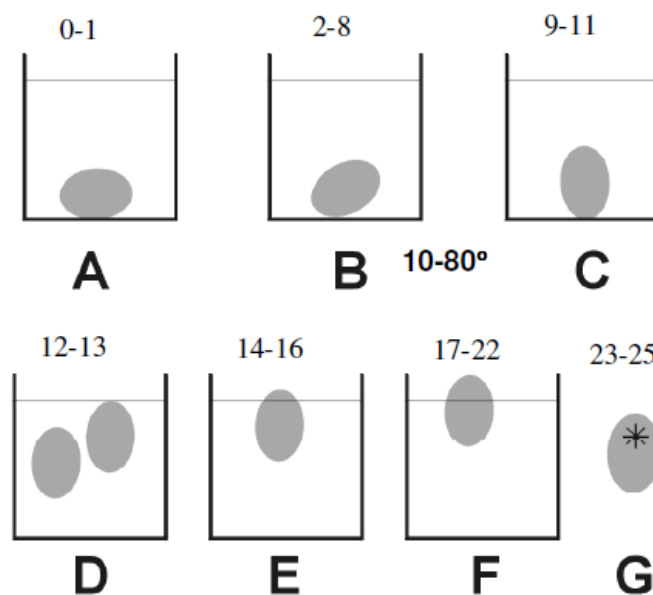


## How to measure eggs in gulls

### 1. Sequence of laying

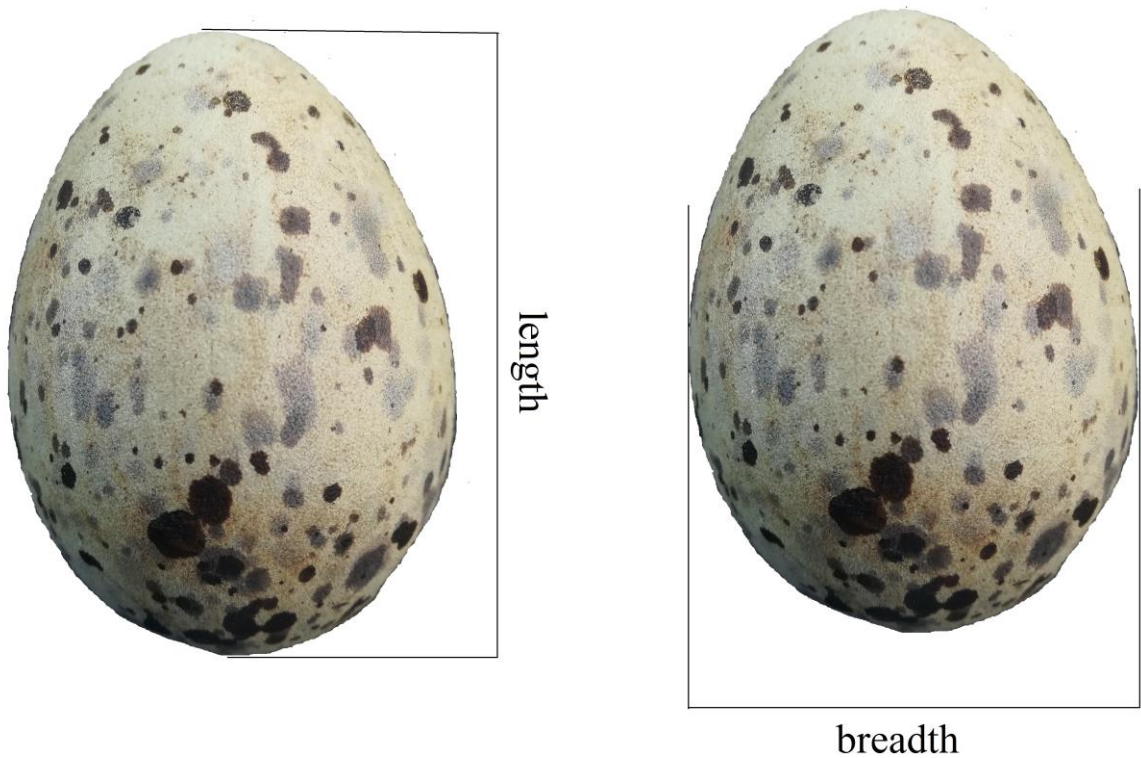
It's very important to know which egg was laid as first one (A-egg), second one (B-egg) and third one (C-egg). To do that, we have to do a 'water test'. Put the egg into the water and notice 'degree of slope' (for stage B only) or 'degree of elation' (A – the freshest egg, laid this day or 1 day ago; 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 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](mailto:marcin.przymencki@wp.pl) ☺

Example:

	A_length	A_breadth	B_length	B_breadth	C_length	C_breadth
nest 1						
nest 2						