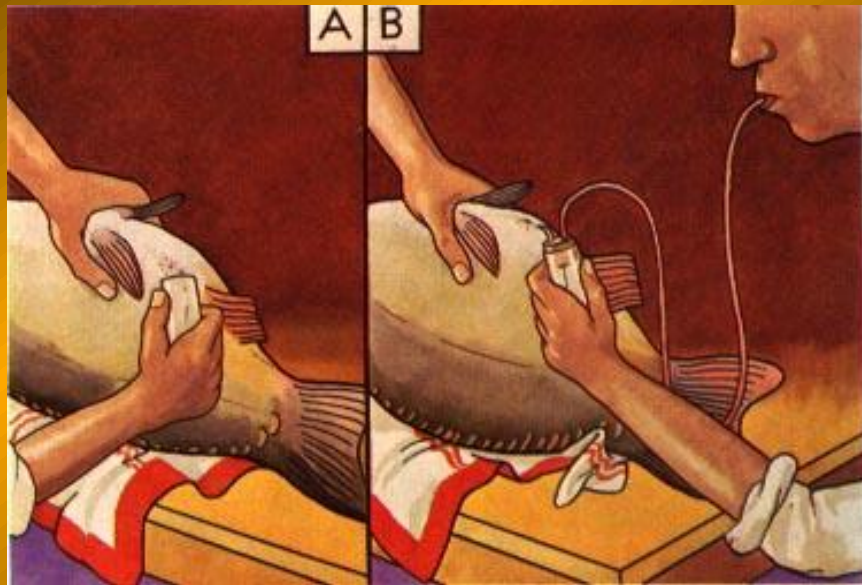
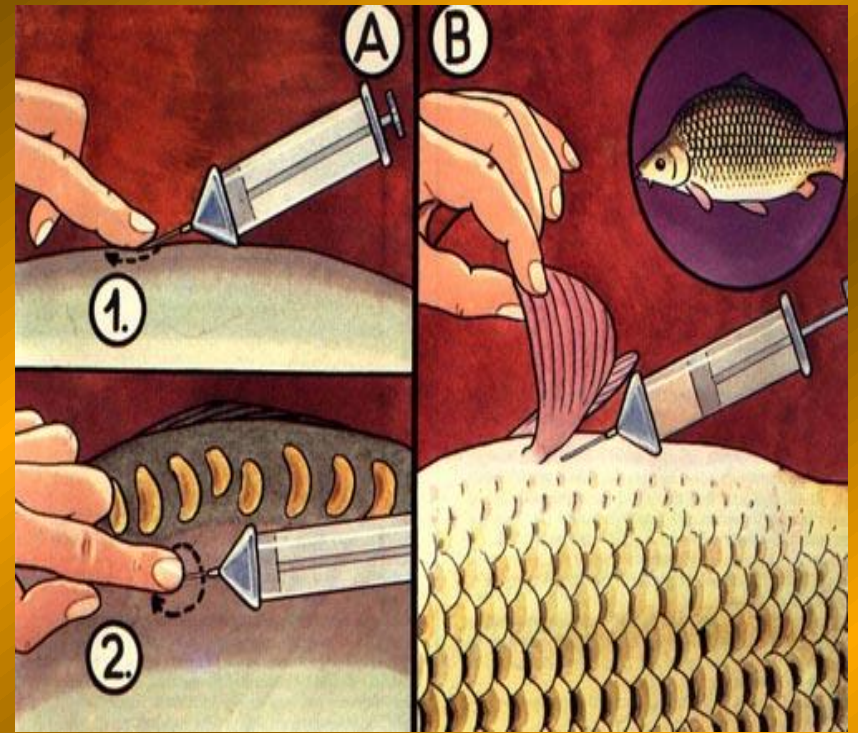
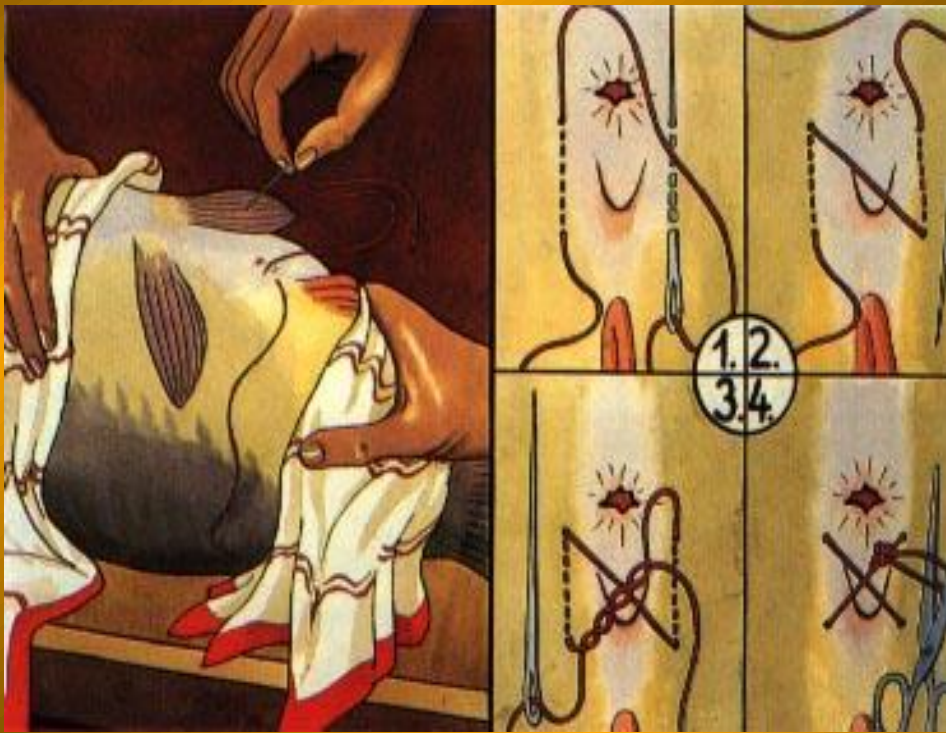


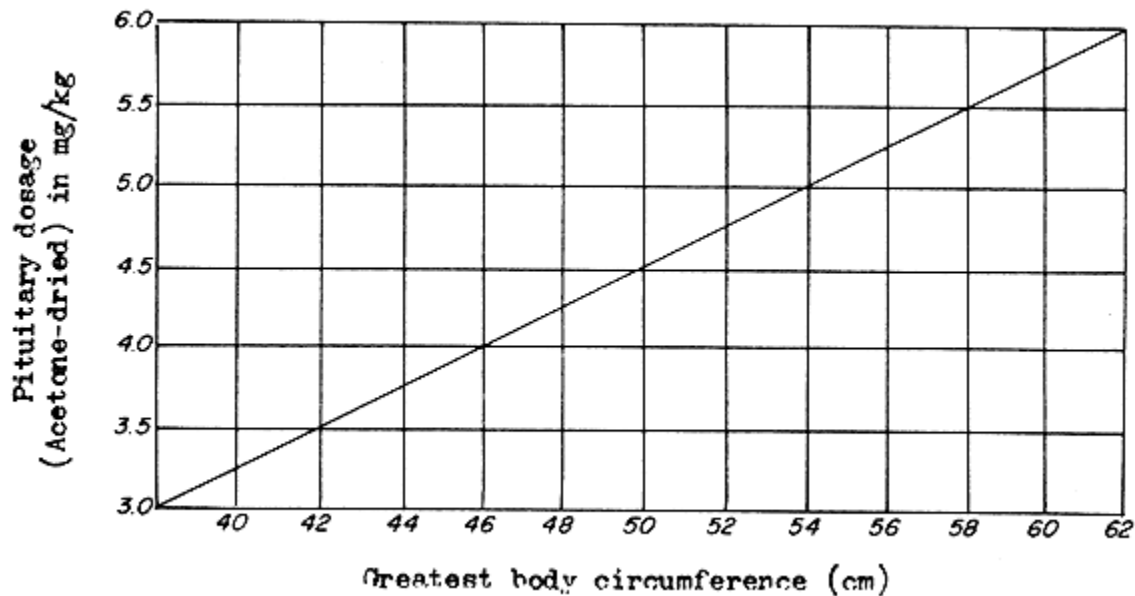
# استزراع الأسماك الرابع/ قسم الأسماك والثروة البحرية

اعداد

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المحاضرة الثالثة





**Example:** You are planning to treat 34 females (average weight 4 kg) and 17 males (average weight 2.5 kg). You will require the following quantities of dried hypophysis:

<b>Females</b>	First injection:	0.3 mg/kg
	Second injection:	3.5 mg/kg
<b>Males</b>	One injection:	2.0 mg/kg

- (a) for the first injection of the females:  $34 \text{ fish} \times 4 \text{ kg} \times 0.3 \text{ mg/kg} = 40.8 \text{ mg}$   
 (b) for the second injection of the females:  $34 \text{ fish} \times 4 \text{ kg} \times 3.5 \text{ mg/kg} = 476 \text{ mg}$   
 (c) for the injection of the males:  $17 \text{ fish} \times 2.5 \text{ kg} \times 2 \text{ mg/kg} = 85 \text{ mg}$

## تخدير الاسماك

Three chemicals may be used as fish anaesthetics:

(a) **MS 222 or tricaine methane-sulphonate** (Sandoz, Basel, Switzerland) is a very mild and safe anaesthetic from which fish easily recover. Fish may be kept in it for about 30 minutes at 20-25°C. But it is now thought to be a possible carcinogenic in man; it is rather expensive and must be used sparingly.

1:10000 or 10 g dissolved in 100 l water

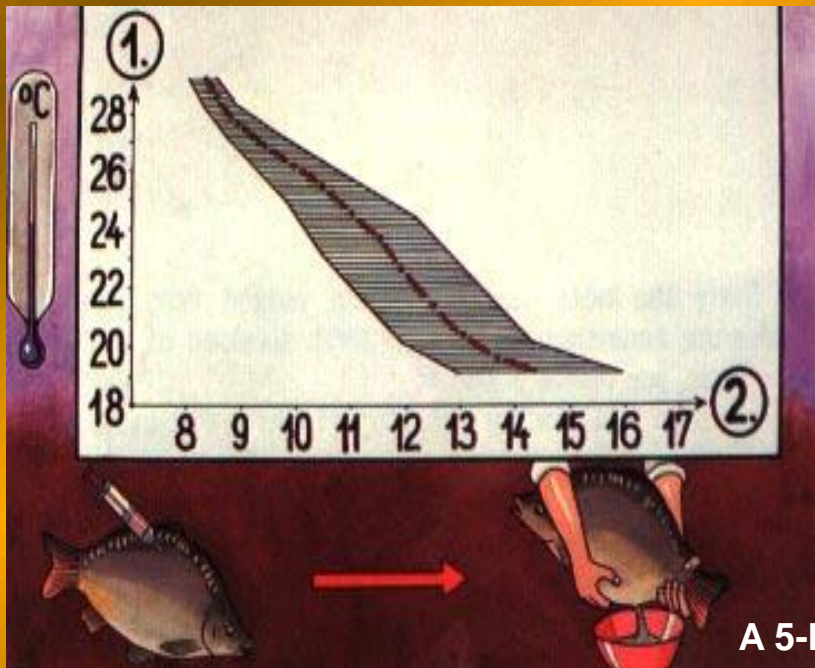
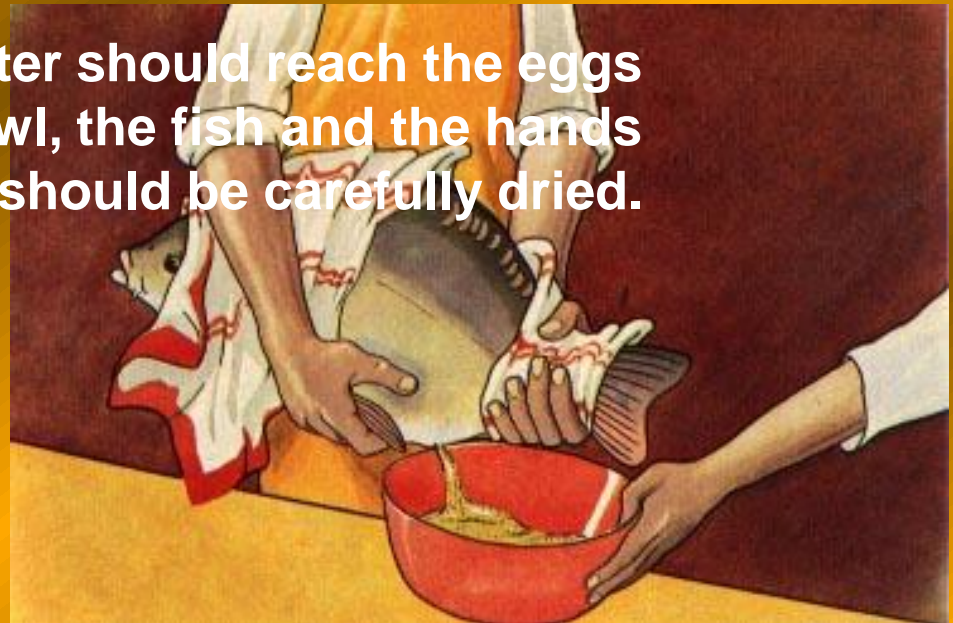
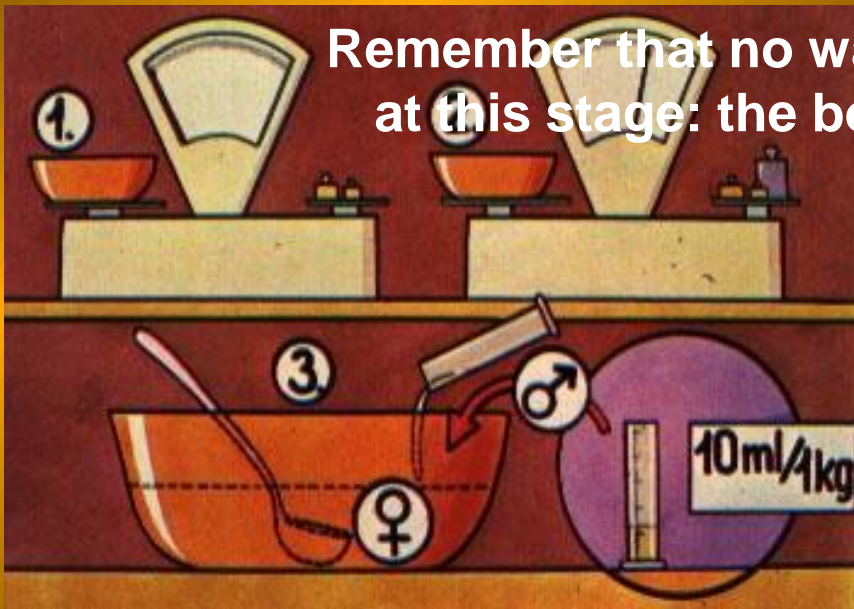
(b) **Quinaldine or 2-4 methylquinolin** is a toxic chemical which should be handled with great care and stored safely. During the treatment of the fish, they should be carefully watched and transferred quickly to well oxygenated water if necessary.

1:40000 or 2.5 ml dissolved in 100 l water

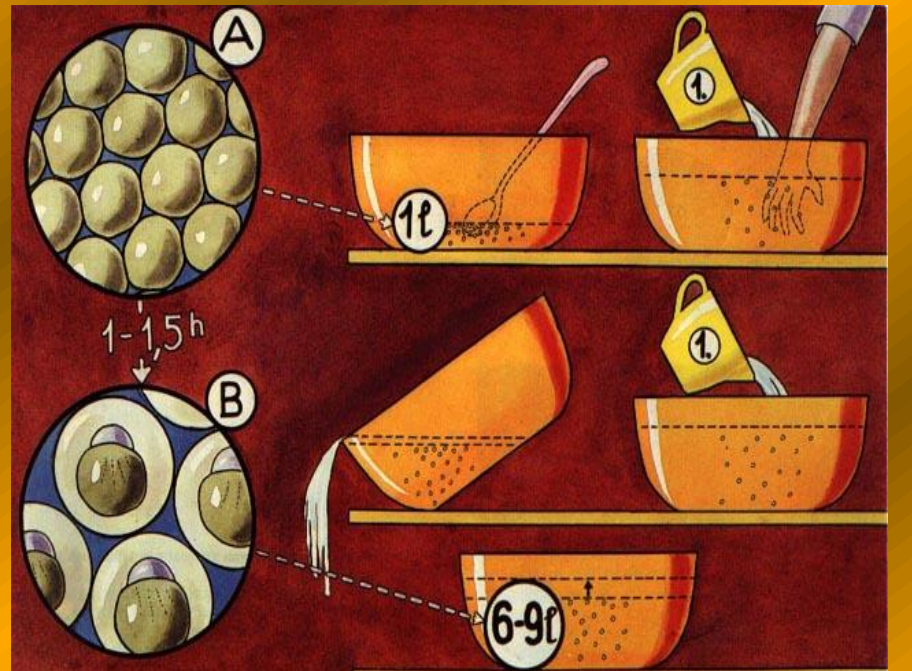
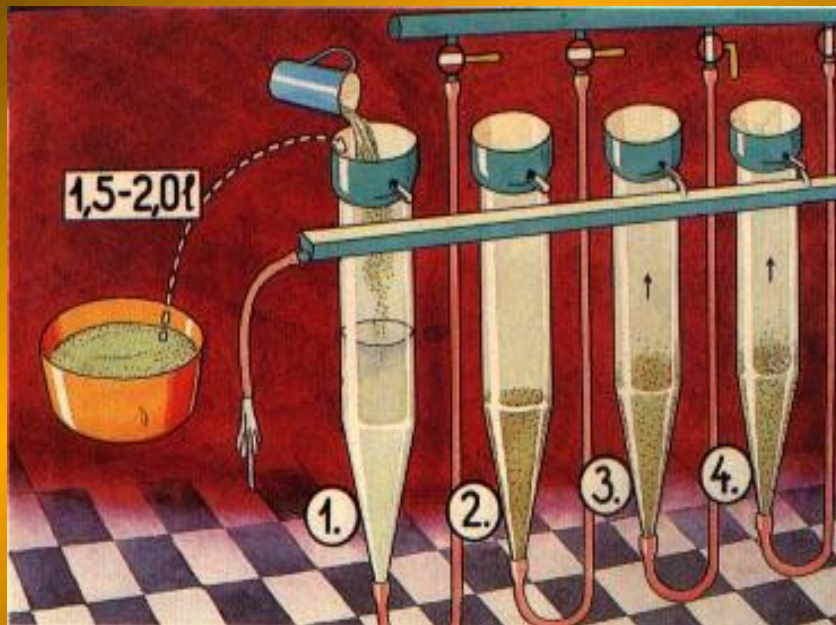
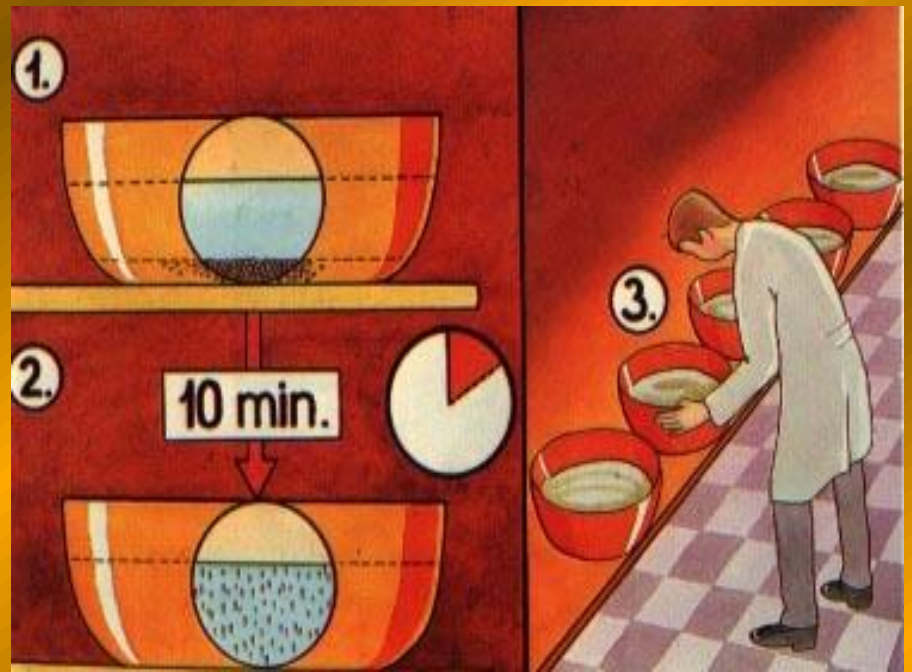
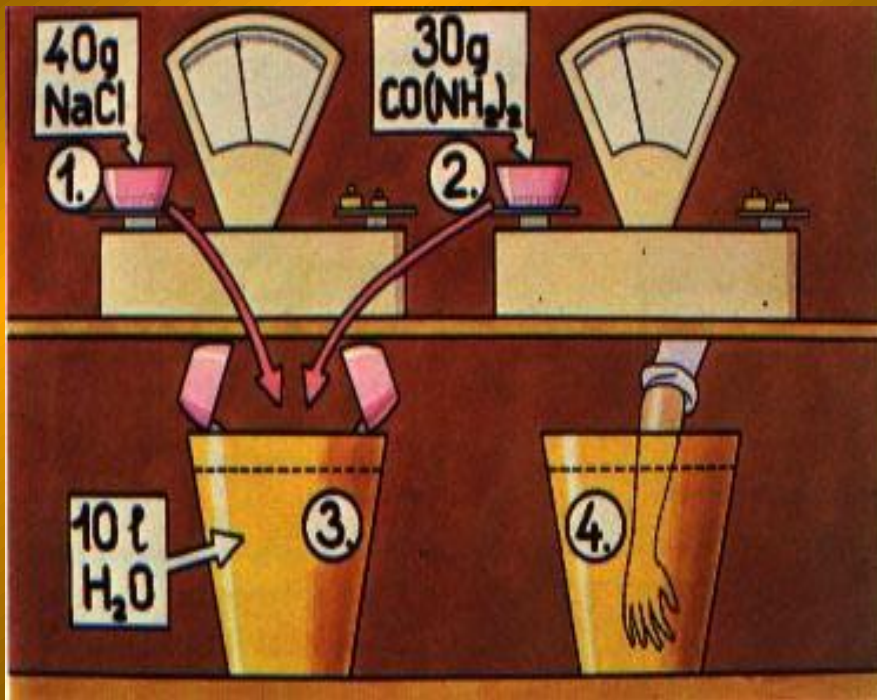
(c) **Phenoxyethanol** is milder and less effective than MS 222 but is far cheaper.

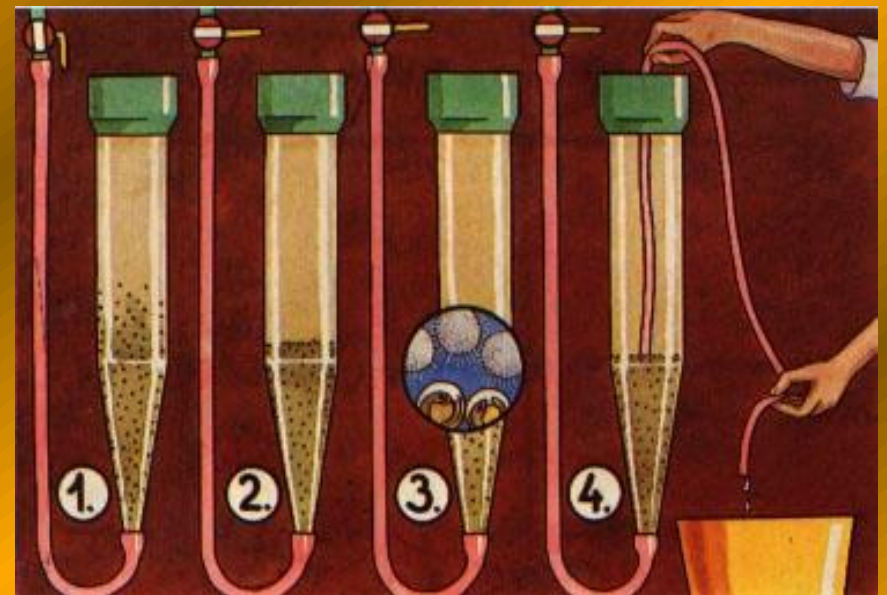
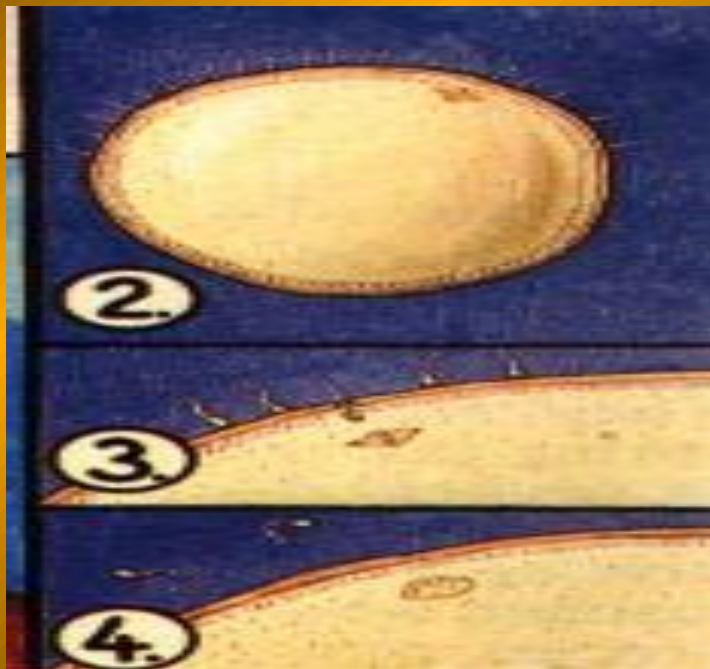
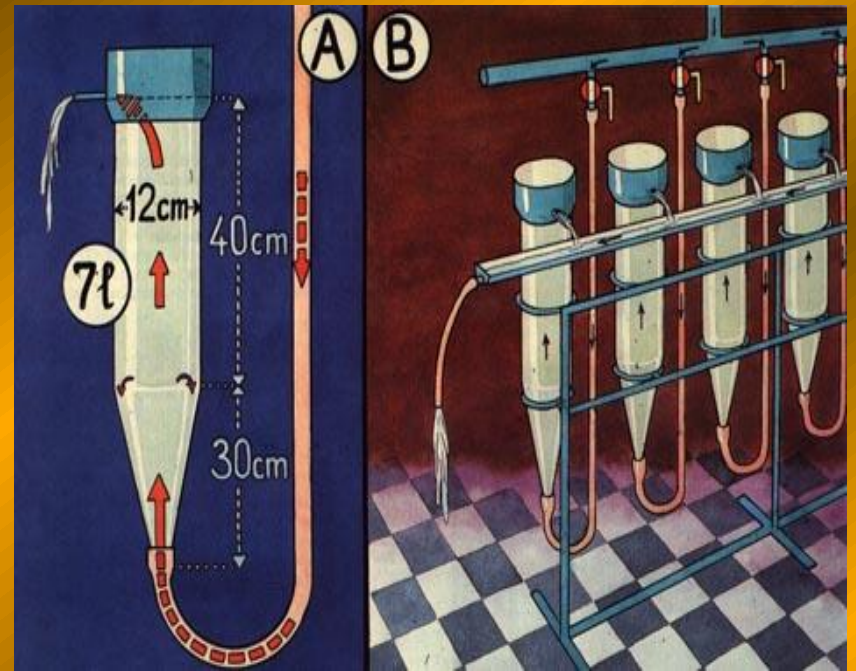
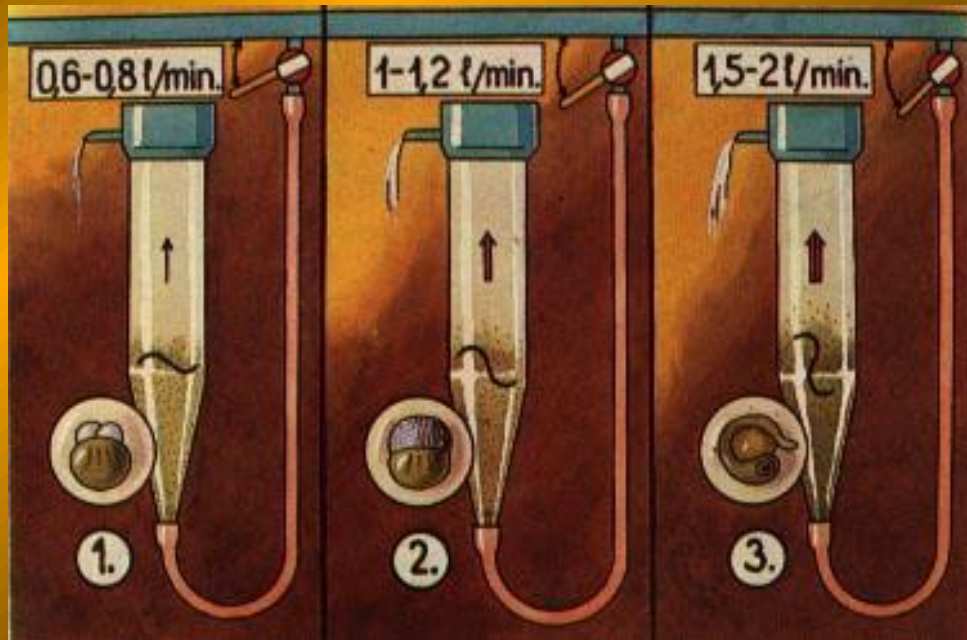
1: 5 000 or 200 ml dissolved in 100 l water

Remember that no water should reach the eggs at this stage: the bowl, the fish and the hands should be carefully dried.

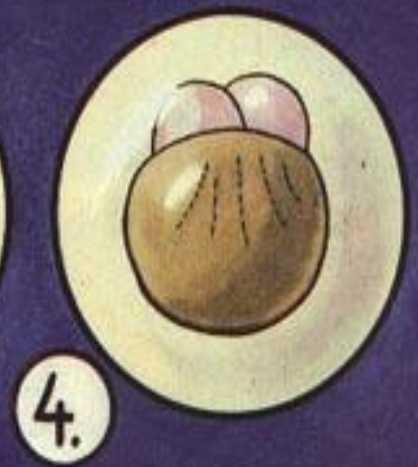


A 5-kg female for example produces about 1 kg of them, containing 700 000 to 1 000 000 eggs. A 4-5 kg male spawner provides an average of 20 ml milt

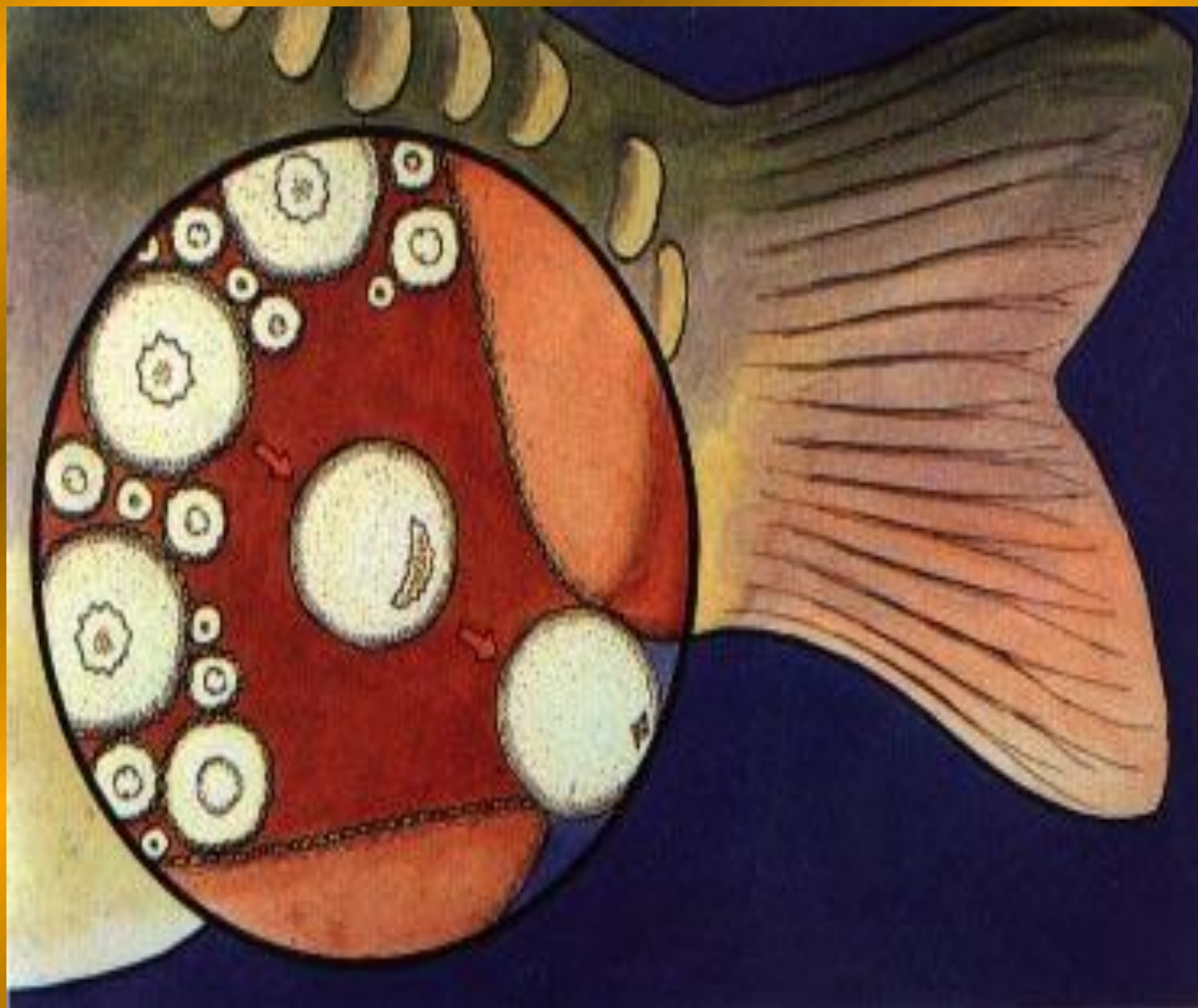


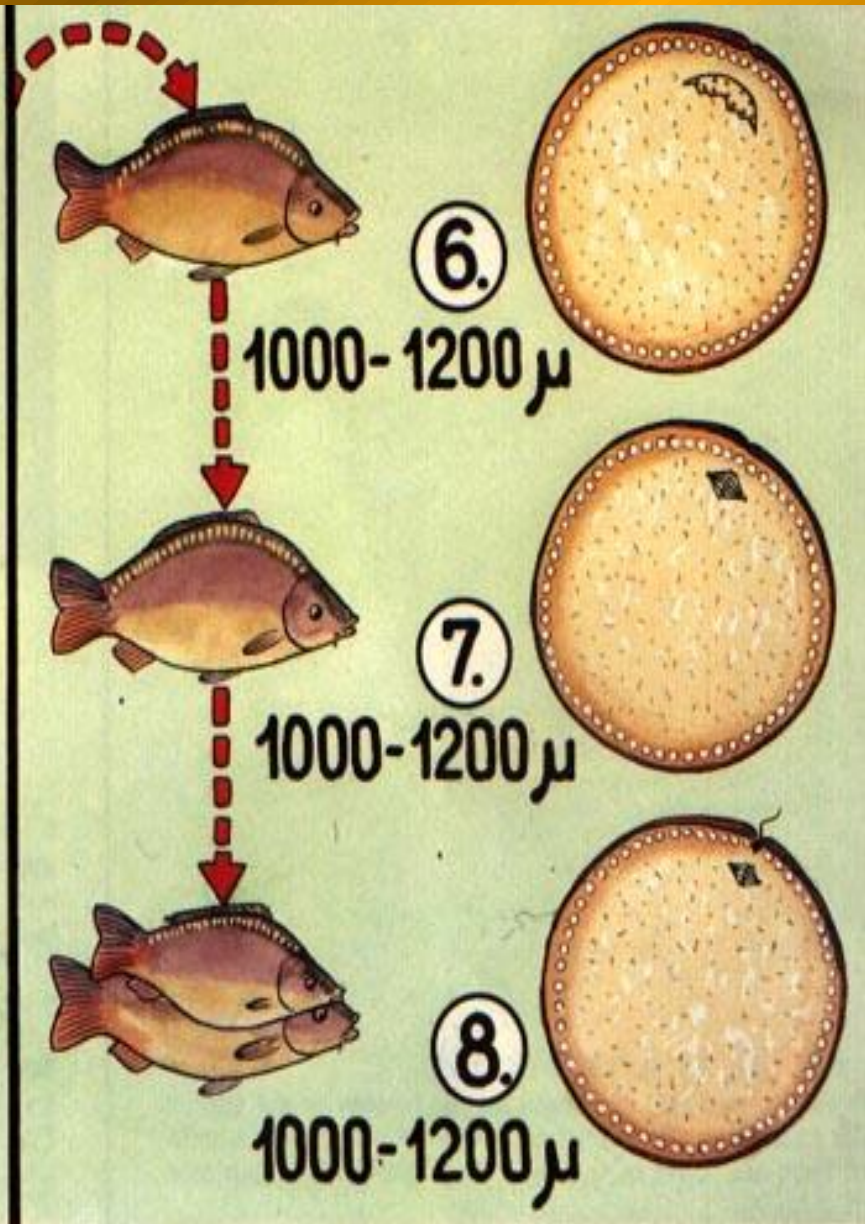
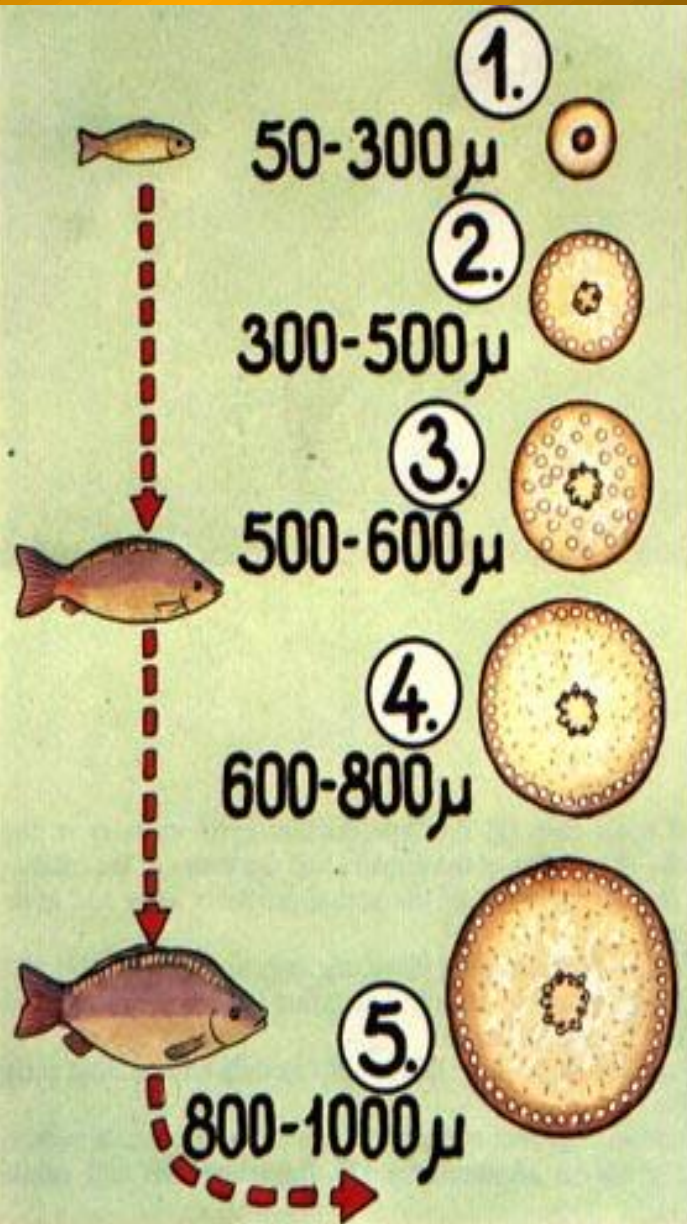


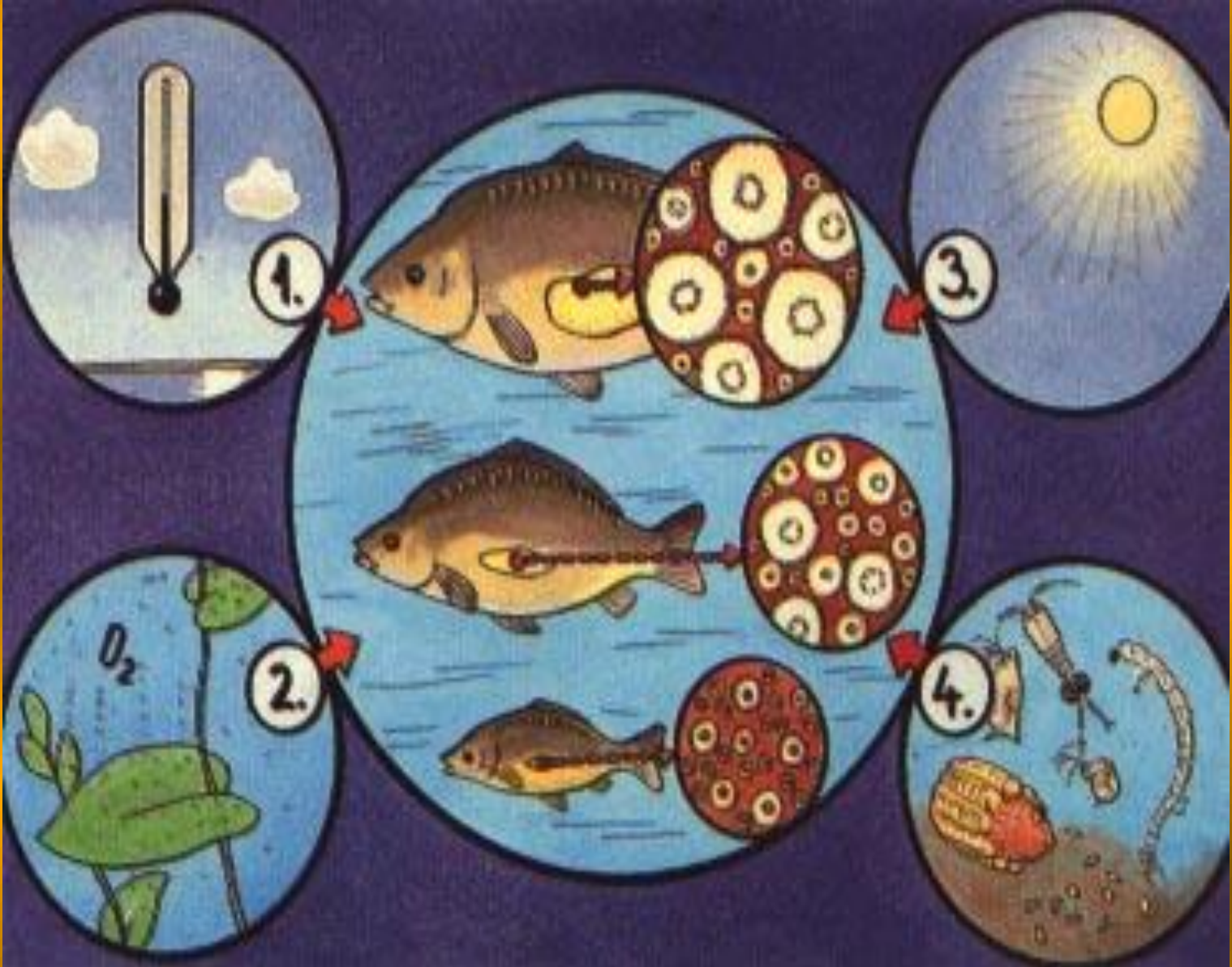
0 1 2 3 4 5 mm











السلالات الوراثية من الكارب الاعتيادي

scale

scaly" SSnn, Ssnn; "mirror" ssnn; "line" SSNn, SsNn and "leather" ssNn

pigmentation

Wild type, black, grey, blue, gold, orange, red

