

Manufacturing of wet preparation

.Objective: To learn the method of manufacturing the wet preparation of fish

Materials and Equipment: Fresh fish with length of 20–30 cm. Tools: glass cylinder with bung, glass plate, needle, nylon thread, scissors, scalpel, dissecting needles, electric stove, distilled water, 5% solution of formalin

Basic theoretical information

For manufacturing of wet preparations internal organs of large fish can be used (gills, gastrointestinal tract, genitalia, swim bladder, etc.) as well as sections of the fish with the designation of internal organs, whole specimens of fish in order to create collections of members of fish fauna, fish in various stages of development in order to show clearly periods of ontogeny

:In the manufacturing of wet preparations there are certain rules

1. The work should be done in anatomical rubber gloves. 2. The material for the manufacturing of preparations should be taken from the recently dead fish, but without obvious disease or injury. 3. At the beginning of work it is necessary to clean the fish from dirt and gently wash away mucus, without damaging the fins and scales. 4. For rapid penetration of fixing fluid it is necessary to inject it into the tissues or organs by syringe piercing the body (tissue) in different locations or through natural openings - blood vessels, gastrointestinal tract etc. 5. Volume of fixing fluid should be 10 times more than the amount of material. 6. Fixation of the material occurs within 3–7 days. 7. If the preparation is for exposition, the fish (or an organ) must be properly straightened, and placed in a glass cylinder so that it can be shown well

It is easier to straighten the fresh specimens; they are very flexible and change shape or position well. After long-term preservation in the fixing liquids (alcohol, formalin) fish harden highly. For some softening of fixed specimens they should be put for some time in the water, which must be replaced periodically to remove the fixing liquid. For straightening fish is put on the dissecting cuvette on a thin plate. To impart the required position, fish is fixed by needles and thin strips of parchment. Fins of fish are fixed by needles and wooden plates. Needles cannot be stuck directly into the body of the animal, as they rust and leave stains on the surface of the fish that are impossible to be washed off

When the fish is straightened cuvette is poured with 5% formalin solution, and if it was placed on the board, it is lowered horizontally to capacity with formalin, where it is fixed for 3–7 days. Then it can be moved to the exposition cylinder. Capacity, which is used for exposure do not need to be cylindrical, it can also be rectangular. Everything depends on the shape and size of the preparation. The size of the exposure containers must meet the size of the exhibit, which should not exceed 2/3 of the volume of the vessel. This is important because reliable storage of the preparation requires a certain amount of preserving liquid. In addition, large specimens of fish that are placed to small vessels have very bad shape, their shape and size of the object is curved. Usually the fish is not just put into cylinder, but it is attached to the glass, which is inserted into the tank by means of threads. Glass is chosen by the form and size of the cylinder its length should reach the edge of the stopper or lid and occupy the entire width of the cylinder. If the glass is narrower than the cylinder it is necessary to be fixed by thread or plugs (Fig. 12). The fish must be seen with all the details, the background, on which object is placed helps with it. Light fish should be placed to the dark glasses and dark fish to white. Mounted specimens are fixed to glass by sewing. The fish is pierced by needle near the side that will be on the glass, tightening and knotted by threads. Color of thread should be selected similar with color of glass or preparation or they would not fall into the eyes

Figure 12. Fixed fish in a glass cylinder. A – glass which is strengthened using yarns; B – glass, which is strengthened by using cork

All wet preparations should be well sealed. For this, the glass cover of cylinder should be carefully solder by paraffin. A label containing the following information: name of the species, the name of the preparation (internal structure, external structure, digestive system, etc.), date of manufacturing and name the one who made it should be attached to the preparation

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Thoroughly wash the glass cylinder, where the preparation will be, and rinse it with .1 distilled water. 2. Thoroughly but gently wash the fish. 3. If you plan to manufacture wet preparation with a clear anatomical structure of the fish, it is necessary to make an anatomical a dissection of fish. 4. By using a long needle stretch nylon thread through the body of the fish (in the front and back of the body). The ends of the strands capture fish on a glass plate. 5. Open and if it is necessary fix all systems and organs of the fish so that they were visible. 6. To place the preparation in the cylinder and gently pour filtered 5% solution of formalin. 7. Within several days, change the solution until the residue disappears completely. 8. Heat the wax in a water bath and solder cover of cylinder. 9. Make and stick .the label

Questions for individual work

- .1 Provide a detailed description of the method of fixing of fish
- .2 List the stages of production of wet preparations
- .3 Provide a description of the organs (systems) of fish (according to manufactured .(drug
- .4 ?How to fix fish in glass tanks
- .5 ?What fixing solutions should be used in the manufacturing of preparations of fish
- .6 ?How should wet preparations be kept