STEP 9 Tagging

Mizuki Matsunuma and Hiroyuki Motomura

Management of specimens varies depending on the organization possessing them. Specimens can be stored individually in bottles, with the corresponding data note included in each bottle, or specimens can be stored in bottles grouped by species/families, with register number tags. The latter method is adopted in our museum; specimens are tagged and stored in bottles, which are grouped together by species. In this section, tagging of specimens is explained.

After photographs are taken (STEP 8), the specimens should immediately be assigned tags with register numbers printed on them. Refer to STEP 5 for the materials required and method used to prepare specimen tags.

In general, a specimen tag should be threaded through the mouth from a right gill slit, trying as much as possible not to damage the fish body. In our museum, "Daruma" home-sewing, thick thread (white) by Yokota Co., Ltd., Japan, is used. Other types of textile threads can also be used, provided they are strong enough for the purpose. For threading, a general surgical needle, 1/2 circle and spring eyed (#1–#10), by Natsume Seisakusho Co., Ltd., Japan, is used. The thread is easily drawn through the needle eye, as it simply needs to slide down the groove in the needle (from spring eye);

Home-sewing, thick thread (white) by Yokota Co., Ltd., Japan. Considering its strength and price, this is the most suitable thread for tagging.

General surgical needle, 1/2 circle and spring eyed (#1–#10), by Natsume Seisakusho Co., Ltd., Japan. The spring eye (needle hole) and curve are perfect for tagging.

Typical method of tagging. The threaded needle is passed through the right gill slit to the mouth.

moreover, the half arc makes it easier to pass the needle through the gill slits.

Prepare the needle, thread, and specimen tag. Open a right gill slit with fingers, and pass a needle threaded with a tag through the gill slit to the mouth. Finally, cut the thread at a reasonable length and tie a knot to ensure that the tag does not come off. Sometimes, it is difficult to pass the needle through the gill slits to the mouth depending on the types of fishes. Different methods for different types of fishes are explained below.

■Large fishes/fishes with a long distance between gill slits and mouth

When it is difficult to pass a needle through the gill slits to the mouth because of large size of the fish, the tag can be attached through the lower jaw. For tagging in this case, the soft tissue lining around the teeth should be pierced.

Tagging through the lower jaw. The soft tissue between dentaries should be pierced.

For tagging fishes with small gill slits and a long distance between the gill slits and the mouth, such as those of Tetraodontidae, the gill slit area can be pierced.

Specimen in a Ziploc bag for preservation. Tags should be inside the bag, not attached to the fish.

Specimens preserved in screw-cap vials with tags.

For tagging sharks and rays, the base of the right pelvic fin should be pierced.

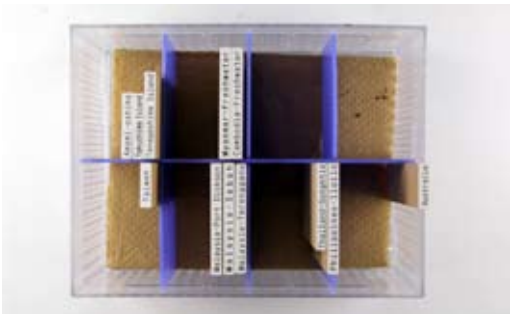
For tagging members of Syngnathidae, tie the thread at the sulcus of arthromeres.

Alternatively, for tagging members of Tetraodontidae and Lophiidae, which have small gill slits and a long distance between the gill slits and the mouth, the gill slit area can be pierced.

■Small fishes

When the body of the fish is too small and there is a risk of damage to the lower jaw while trying to pass a needle through the gill slits to the mouth, the tag can be enclosed with the fish body in plastic food-storage bags (*e.g.*, Ziploc, which is a brand of polyethylene bags with zippers). For the large range of sizes, "Unipac" by Seisannipponsha Ltd. (Seinichi) is suitable. Furthermore, specimens of high academic value and fragile larvae/fingerlings should be preserved in storage bags. In addition, screw-cap vials and test tubes can be used for storage.

A sampling-site tag is prepared in the same manner as a number tag in the Kagoshima University Museum.



Rubber stamp for sampling-site tag.

■Members of Chondrichthyes

Since sharks and rays are generally large and it is difficult to tag the mouth through the gill slits, the base of the right abdominal fin should be pierced for tagging.

Specimen with a number tag and a sampling-site tag. The latter is useful to know sampling locality of the specimen.

■Elongated fishes (such as those of Syngnathidae)

Fishes with extremely small gill slits and mouth, such as those of Syngnathidae, need to be tagged on the cauda, with a knot tied in the thread. The risk of losing tags can be reduced by tying the thread at the sulcus of arthromeres.

The unique approach adopted by our museum, that is, the use of sampling-site tags, besides number tags, can be used. Local museums (or local universities) play an important role by providing information about the local environment. It would not be worthwhile to collect fishes from the Atlantic Ocean for Kagoshima University. It is important to collect local fishes from Kagoshima and manage them. Thus, the sampling site becomes confined to an extent, and sampling-site tags can be prepared beforehand.

At central and large museums (such as National Museum of Nature and Science, Tokyo) and Western museums, specimens in bottles are managed by including labels inside the bottles (STEP 5), and thus, information about the sampling site of the specimen is instantly available. However, in our museum, the bottles are sorted by the species of the specimens, in which case it will not be possible to know the sampling site of the specimen without noting the specimen number and searching the database. Therefore, we prepare sampling-site tags prior to our main surveys and attach them to the specimens together with number tags. This method is very useful because the sampling site of the specimen can be instantly known. A sampling-site tag (rubber stamped) can be purchased for about ¥105. It is delivered within 24 h when ordered online, and thus, sudden requirement at the field can be managed.

Measurement → Step 10