

STEP 10

Measurement

Gota Ogihara

After photography (STEP 8) and tagging (STEP 9), measure the size of the specimen with a caliper. Use millimeters (mm) as the measuring unit, and record up to one decimal place.

Measurement methods used for fishes vary depending on the taxonomic groups. The projective method, which measures the three-dimensional figure as flat figure, is used for sharks; the total length (distance between the tip of the rostrum and the end of the caudal fin) is also measured for sharks. In case of rays, the tip of the tail is often removed (especially in markets), which does not allow accurate measurement of the total length. In this case, the disk width (the longest distance between the right and left pectoral fins) is also measured. For teleosts, the standard length (the shortest distance between the lower jaw and the end of the hypural) is measured. The end of the hypural can be ascertained by flexing the caudal fin to the left side and observing the line on the peduncle. In fishes with the lower jaw longer than the upper jaw, such as those

of Synanceiidae, Serranidae, and Hemiramphidae, measurement should be taken from the top of the upper jaw. In fishes with scutes, such as those of Carangidae, the end of the hypural cannot be easily ascertained; therefore, fork length (the shortest distance between the top of the upper jaw and the most indented part of the caudal fin) is alternatively measured.

Measurement data are eventually input and registered into a computer database. Therefore, it is very useful in many ways to measure and process specimens simultaneously. For instance, if it is known how big a particular specimen is, it can easily be identified from the numerous individual specimens in bottles with the registered size information. Further, if a request is received to investigate the specimen collection, the specimens will not require to be physically rechecked, but database search will provide the answers. Furthermore, by checking body length and sampling date in the database, valuable information such as growth speed and appearance time of a particular species can be deduced at one glance. For large specimens, it is particularly better to measure the size while processing them, since such specimens cannot be removed from and placed in bottles frequently.



Caliper used in the Kagoshima University Museum. Above: VC-30, M-type standard caliper by Mitutoyo, Japan. Below: CD-SC, series 500 ABS digimatic solar caliper by Mitutoyo, Japan.

Identification

→ Step 11