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**AN IMPROVED METHOD OF SECTIONING CATFISH
SPINES FOR AGE AND GROWTH STUDIES**

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ABSTRACT

Histological sectioning has been found to be effective in age and growth determinations of catfish. This method should be of benefit in future studies.

Sneed (1951) developed a method of aging catfish by counting annular rings on cross-sections of the pectoral spine. Each spine was cut near the base, or articulating portion, of the spine. The mounting of a small saw on a sliding platform made it easy to cut a fairly thin cross-section. However, after ascertaining age and rates of growth of blue and channel catfish from a tidal bayou complex on Rockefeller Wildlife Refuge, Grand Chenier, Louisiana, the need for an improved differentiation method of sectioning spines was realized.

A formic acid decalcification method was employed and proved effective. Both pectoral spines from known-age fish were obtained for comparison of the decalcification method with that used by Sneed. The left pectoral spines were sectioned by the use of a 110 volt Dremel Moto-Tool Model No. 1, mounted on a separate block from a clamp board on which the spine was attached. Cross-sections were cut approximately 0.5 millimeters. Right pectoral spines were tied with dental floss in gauze, labeled and suspended in the decalcifying fluid for 4-7 days, depending on spine size. Cross-sections were easily obtained with a single edge razor-blade, stained, prepared and kept for future reference. Best results were obtained with Turtox CMCS Non-Resinous Mounting Medium.

The sections obtained by the saw method were immersed in a 70 per cent alcohol bath immediately prior to examination. This seemed to produce a higher degree of differentiation between the translucent and opaque zones. The methods were compared by placing prepared microscope slides in a Bausch and Lomb Tri-simplex Micro-Projector and projected at a magnification of 23 times.

Growth rates computed from sections obtained from both methods were found to be in very close agreement. A nomograph was used for computations of growth (Calander and Smith, 1944).

Not only does this decalcification method facilitate the study of larger fish but seems to have definite possibilities in age studies of larger animals.

The formic acid solution is obtained by mixing equal parts of solutions A and B. The specimen is placed in the decalcifying fluid for 4-7 days until it can be easily sectioned. Spines should be washed in water before sectioning and staining for approximately 12 hours. (Armed Forces Institute of Pathology, 1960).

This study was conducted while Graduate Assistant, Louisiana Cooperative Fishery Unit, Louisiana State University.

SOLUTION A

Sodium citrate	50.0 gm.
Distilled water	250.0 cc.

SOLUTION B

Formic acid	125.0 cc.
Distilled water	125.0 cc.

LITERATURE CITED

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- Sneed, K. E. 1951. A method for calculating the growth of channel catfish *Ictalurus lacustris punctatus*. *Trans. Amer. Fish. Soc.* 80:174-183.