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E. McANULTY

Animal Health Research Centre,
P.O. Box 24,
Entebbe, Uganda,
British East Africa.

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An Inexpensive Easily Constructed Fish-marking Tag

A SIMPLE inexpensive fish tag, after the style of the hydrostatic tag devised by Einar Lee, has been constructed as follows (Fig. 1). Transparent vinyl plastic tubing (Crystal Vinyl tubing No. 6A, supplied by Portland Plastics, Ltd.) $\frac{1}{8}$ in. int. diam. is cut in lengths of 2 in. One end of the tube is softened by heating near the edge of a very low Bunsen flame and then the walls are pressed together with large forceps. Dipping the forceps in cold water between each operation keeps them cold and thus increases the desired effect of welding the inner walls of the tube while minimizing distortion of the outer walls which cool more rapidly by contact with the cold forceps. Cooling the forceps also eliminates a tendency of the warm vinyl plastic to stick to them. A slip of white paper with the mark number and instructions in indian ink for the finder is next inserted and then the other end is closed. In one of the flattened ends a hole is made to take a 12-in. length of 0.65 mm. diam. monofilament nylon (sold for anglers as 27 $\frac{1}{2}$ pounds or 12.5 kilos breaking strain). After insertion the nylon is knotted to form a loop. The cost of materials works out at less than 4d. a tag.

The tag is attached to the back of the fish, just anterior to the dorsal fin, in the case of pike and in front of the posterior dorsal fin in the case of pollack. A darning needle (which has the eye cut open on

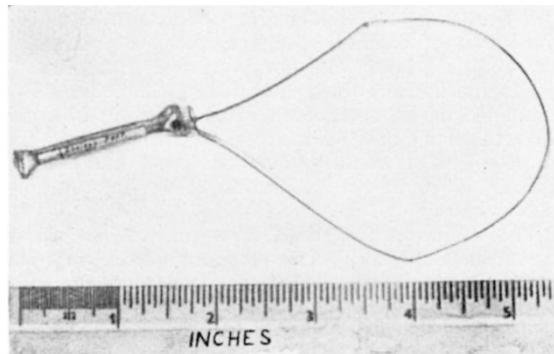


Fig. 1

one side to hold the nylon) is used for drawing the nylon loop through the skin and the muscles, and a double looped knot is made to hold the tag in place. Darning needles are now used instead of medical suture needles which were originally used. The former are easier to insert and are considerably cheaper.

We have used this tag in both freshwater (for pike) and sea water (for pollack). So far we have only had recoveries of pike; but these show that the tag is satisfactory. The wound made in the fish by tagging heals rapidly when this method is used and is completed in pike by the end of 48 hr. at water temperatures of about 10° C.

For freshwater work, at least, the tag has two advantages over the Einar Lee type; it is considerably less expensive and it is less conspicuous when submerged.

FERGUS J. O'ROURKE
P. MAKINGS

Department of Zoology,
University College,
Cork.
Dec. 3.

Chromosome Number of *Marsilea*

THE genus *Marsilea* has not previously been investigated by modern cytological methods, and we have only the early investigations of Strasburger¹ and de Litardiere² using techniques which experience has shown³ to be unreliable when applied to ferns. It is therefore perhaps of importance to record a clear count of $n = 20$ (see Fig. 1) for a race of *Marsilea minuta* from northern India. We believe this to be

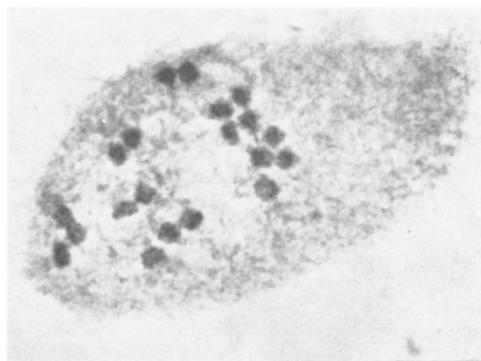


Fig. 1

a diploid and have found $2n = 40$ in squashes of root tips. Other cytotypes are, however, also present in this species, notably a sterile triploid with $2n = 60$, which reproduces vegetatively but which is otherwise very like the diploid and frequently intermixed with it. Further observations on this material will be published elsewhere.

P. N. MEHRA
D. S. LOYAL

Botany Department,
Panjab University,
Amritsar, India.

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