

upon the completion of this step. *All remaining steps may be completed in the lighted room with the cover off the tank.* (d) Discard the dilute reversal solution.

Wash: The film should be washed 3 to 5 minutes with running water.

Reversal Exposure: (a) Remove the film from the reel and expose the film to a light. An ordinary 60 watt light bulb or a desk reflector lamp will work very well for this operation. (b) Slowly move the film back and forth in front of the light for one minute to insure even and complete exposure. (c) Re-load the film on the reel.

Note: If the wet film sticks, immerse the reel and film into water. The water will act as a lubricant and permit easier loading.

Second Development: (a) Add D-11 developer

(same as used in the first step of the procedure) to just cover the film and reel. (b) Develop for ten minutes with brief agitation every one minute.

Note: The used developer should be discarded after this step.

Wash: Wash the film 5 to 10 minutes in running water.

Finishing: (a) For best results the film should be placed in a wetting agent (Kodak photo-flo) for one minute. This will reduce the surface tension of any clinging wash water and allow the film to dry free of water spots. (b) Hang the film in a dust free area to dry. (c) The slides are now ready for mounting and projection.

The transparencies can be mounted in Kodak cardboard 2 x 2 holders. These can be purchased at any camera store.

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## RECORDINGS OF FEEDING FISH

The ultimate fish lure may have been developed by Japanese scientists who have drawn fish to waiting nets by broadcasting through the water sounds of feeding fish schools. The sonic lure may prove a boon to commercial fishermen for it can be employed selectively, since schools of different species produce feeding noises peculiar to their own kind.

The underwater sound technique was described by Tomiju Hashimoteo and Yoshinobu Maniwa of the Japanese government Fisheries Agency.

Essentially, the sonic lure works on the same principle as the "moose horn" sounded by hunters to attract game. The scientists toss bait into the water, then record the sounds made by fishes which swarm to the bait. When the sounds are replayed beneath the surface, they attract fish of the same species as those which were recorded.

The technique hinges on selection of the sound produced by the desired species from a bleary garble of underwater noise. "If the luring sound can be picked out and classified, control of fish shoals in a considerable large area is quite possible," the scientists said.

Initial studies of the method were made in January 1962, at Ingashira Park, Tokyo. The scientists threw flour bait into a fish pond and, using a hydrophone as a noise collector, recorded the sounds of feeding carp.

"About forty carp which were swimming freely in the pond before the experiment turned their attention toward the sound projector when playback was emitted," the scientists told their colleagues at the seminar. The carp quickly swam toward the projector, the researchers added.

When the sound was increased, however, the carp veered away from the projector.

Another experiment, a year after the first, produced similar results. When tapes of fish feeding in a pond were played in the water, fish of several species, carp, dace, and trout, responded.

"The pond owner and local people who came to witness the experiment mentioned that they had never noticed such vigorous response of fish so instantly, even to real baits," the Japanese researchers said.

In a follow-up experiment, the scientists used the sonic lure to trap carp which had been released in an artificial lake. The fish swam into a wooden net trap after a projector, stationed at the mouth of the net, played feeding sounds.

A similar experiment was conducted on the open sea, with equally successful results.

The scientists also reported on a sound technique whereby some species of fish can be driven into nets, as land game is flushed by beating the brush. The scientists broadcast sounds of a dolphin which preys on many species of fish. Large numbers of barracuda and jack mackerel were pressured into nets by the dolphin noises.

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## DOGS AND TOOTH DECAY

Dog's teeth are apparently very resistant to tooth decay. Dr. Thompson M. Lewis, Seattle, Washington, reported that during a two-year study of dogs exposed to artificial inducement of caries lesions, caries never was manifested clinically, radiographically or histologically. Previous studies, however, have sometimes shown carious lesions in dogs.