

Note

An improved Hongve sampler for surface sediments*

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The simple drop sampler ingeniously designed by Dag Hongve (1972, Wright, 1980) is effective in recovering the upper *ca.* 10 cm of organic lake sediment. As recently modified it consists of a tube of clear polycarbonate partially wrapped in lead sheeting (Fig. 1). The tube is dropped into the sediment with a light rope, which is attached to the tube with a hose clamp and thence back to a wooden cross-piece at the top. When the rope is tightly pulled it serves to emplace firmly in the top of the tube a rubber stopper that is attached to the cross-piece. A threaded rod with two metal spacers extends down from the stopper to guide the latter as it is emplaced. The top of the tube is machined to fit a standard stopper, and the base is beveled to facilitate penetration into the mud.

The original Hongve sampler employed a bent wire of coat-hanger type to hold the wooden cross-piece up while the sampler was falling, thus preventing the stopper from prematurely closing the top of the tube. When the sampler ceased to fall and the rope became slack, the forked wire would release the cross-piece, and a jerk on the rope would force the stopper down into the top of the tube.

In the modified version, suggested by E. B. Swain, the wire is eliminated and the wooden cross-piece is made of thicker wood, which provides sufficient buoyancy to keep the stopper above the tube as the sampler descends through

the water. When the rope is jerked the reversing course of the rope seats the stopper neatly into the top of the beveled tube.

The sampler can be used in water of any depth. It does not always recover sand, but it generally penetrates fine organic muds 10–15 cm, with good preservation of the flocculent surface. Before the sampler is withdrawn above the water surface, a hand must be placed at the base to prevent the loss of the core. After the cross-piece with its stopper is withdrawn, some of the water may be siphoned or poured off, and as much as the core as desired may then be allowed to slip out the bottom into a suitable container. If several subsamples at set intervals are desired, it is better to insert a plunger in the bottom of the tube (again beneath the water surface). After the stopper is released, the core can be pushed up to the top of the tube, and subsamples can be carefully collected with a syringe or as they flow into a gutter emplaced around the top of the tube.

In projects involving preparation of transfer functions relating microfossil assemblages to water chemistry, this device is a convenient tool for obtaining a surface sample that integrates a few years of sediment accumulation, thereby masking seasonal or annual variability. The sample is also useful in rapidly determining the distribution of surface sediment types over a lake bottom.

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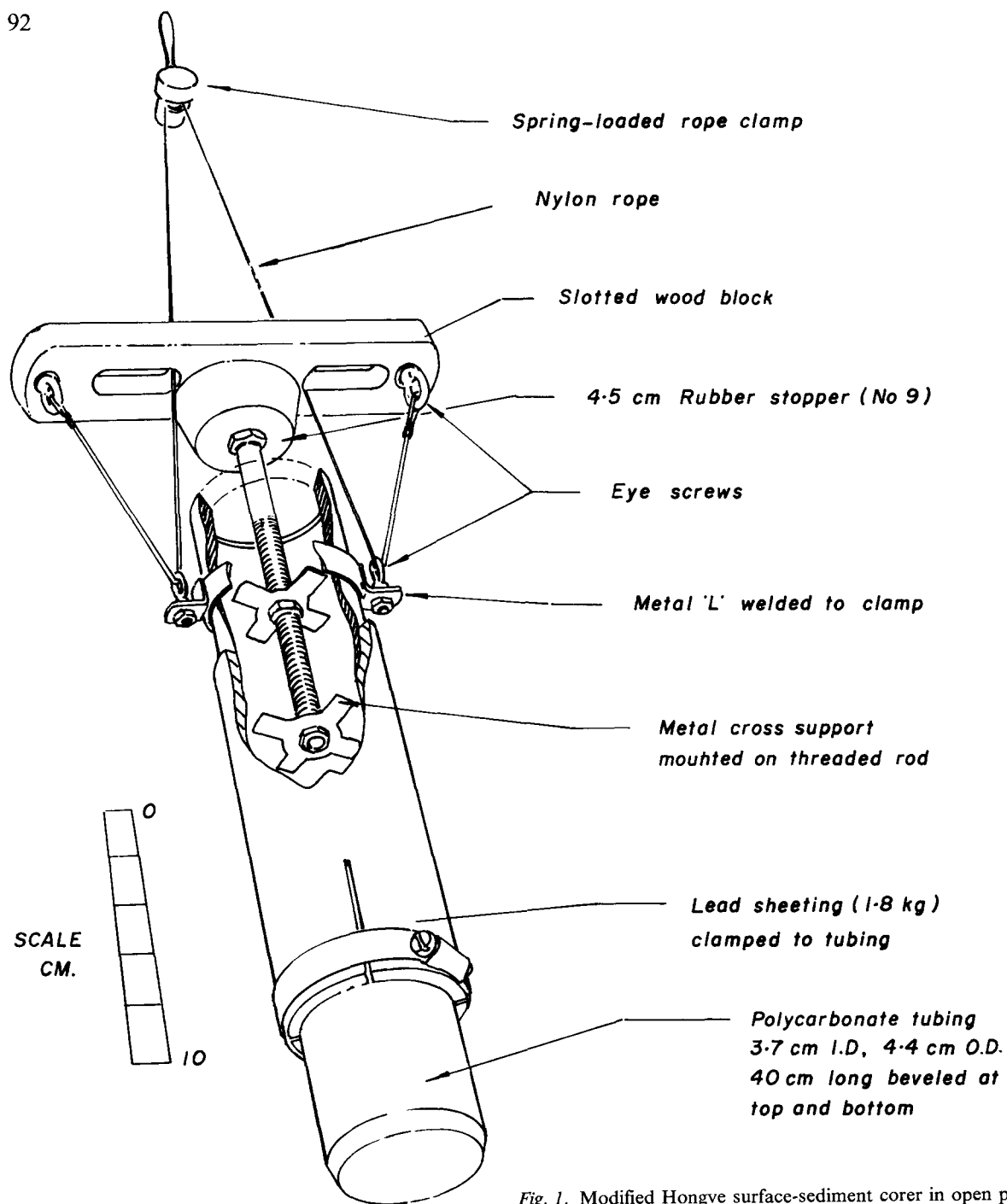


Fig. 1. Modified Hongve surface-sediment corer in open position.

Acknowledgements

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References

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