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APPARATUS FOR RECOVERY OF LOST PEAT BORERS

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INTRODUCTION

The loss of peat borers, by mechanical failure or by forgetfulness in assembly, is embarrassing and expensive. The availability of a recovery apparatus may therefore be of some interest. This apparatus was used to recover 5 m of borer, lost after mechanical failure of one section, the top of which was 2.7 m below the surface.

THE APPARATUS AND ITS USE

A brass tube 66 cm long and 7 cm diameter contains a hollow conical guide into its bottom end, with a 2.4 cm diameter hole at the top of the cone. Two gripping devices operate inside the centre part of the tube (Fig. 1A). These will work on rods up to 2.3 cm diameter.

First, three serrate steel jaws may be driven down and inwards on inclined planes by screwing in a steel plug at the top of the brass tube. This plug is turned by the remaining borer rods and handle. Fins at the side prevent the brass tube turning. Secondly, just above the jaws a pair of brass rings sandwich five rubber washers with central holes decreasing in diameter upwards. The topmost hole is slightly smaller than the diameter of the lost borer rod. It is easy to push a rod up through this seal but attempts to withdraw the rod tend to wedge the rubber tightly between brass ring and rod.

In use, the hole made by the borer in the peat is enlarged by pushing down an 8 cm diameter wooden cone fixed to the end of the remaining borer rods. Provided that the hole can be found, it is not difficult at this stage to locate the end of the lost borer as the wooden cone follows a borer hole fairly easily.

If the recoverer is used at this stage it may prove difficult to find the lost borer end, because roots and other obstructions catch under the fins and deflect the recoverer. It is better to attach a guide rod to the lost borer end. To do this the wooden cone is replaced with a wire cage with open bottom end 20 cm long and 6 cm diameter (Fig. 1B). Round this cage is a loop of nylon cord attached at one end to a second parallel set of borer rods. The other end of the cord is kept at the surface. The second set of rods have a pair of horizontal semicircular locating horns attached to the bottom end.

Both rods are pushed down together; the cage carries the loop of cord over the lost end and, after the cage and its rod are withdrawn, the free end of cord is pulled tight. This secures the second rod to the side of the lost rod.

The recoverer is then attached to the second (guide) rod, pushed down over the lost end, and tightened on it. Guide, recoverer and lost rods can then be hauled up together.

The apparatus weighs about 8 kg, and may need two operators, though it has been used by one.

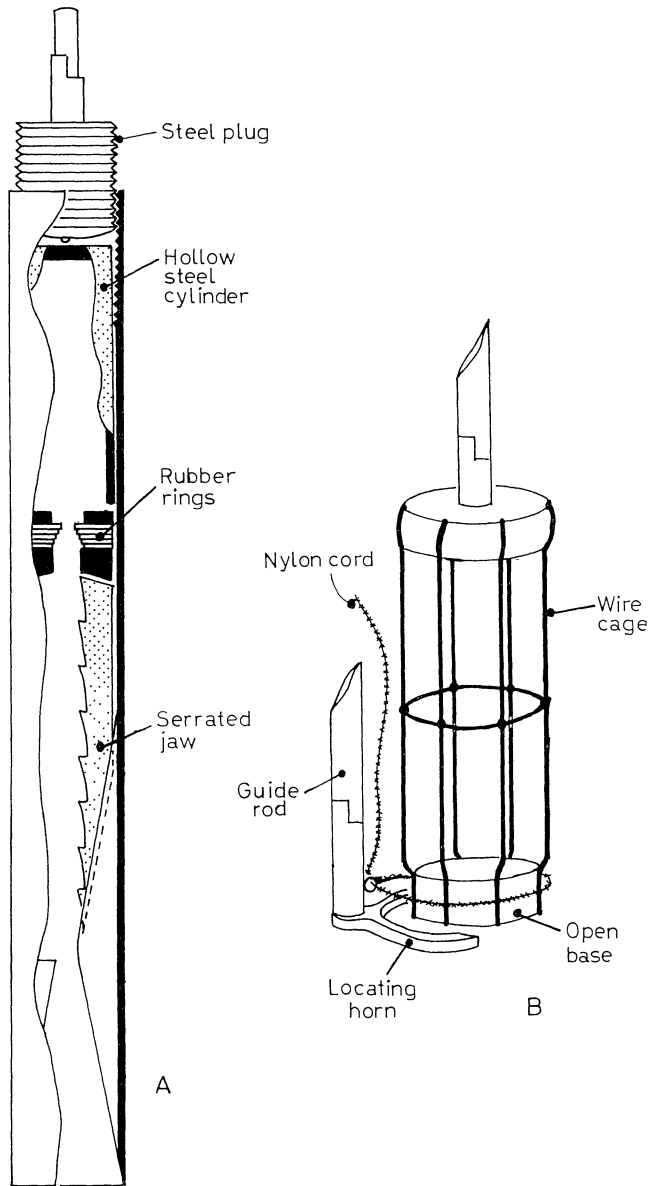


Fig. 1. (A) Cutaway diagram of recoverer. Side fins not shown. (B) Apparatus for attaching guide rod to lost borer end.

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