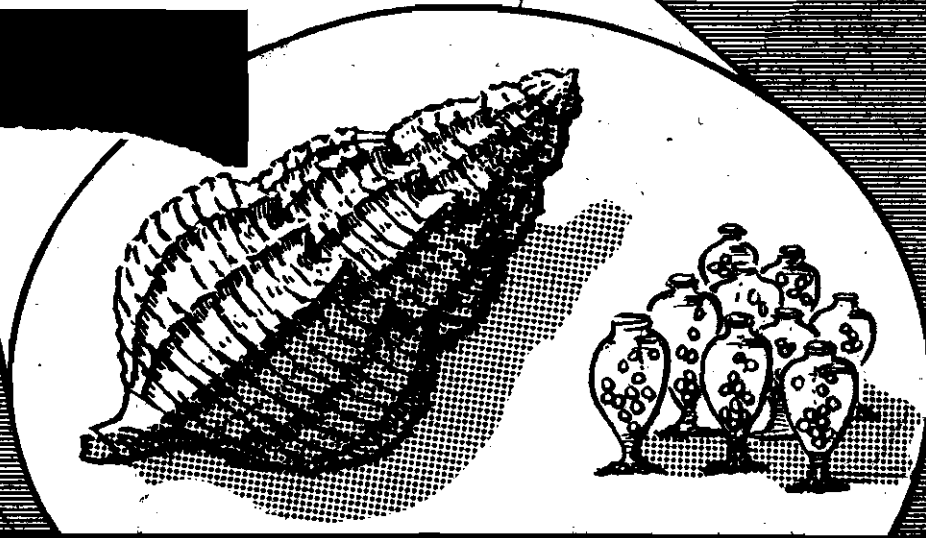


MINISTRY OF AGRICULTURE, FISHERIES AND FOOD

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SPOTLIGHT ON THE AMERICAN WHELK TINGLE



LABORATORY LEAFLET (NEW SERIES) No. 2

FISHERIES LABORATORY

BURNHAM ON CROUCH

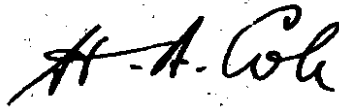
ESSEX

DECEMBER, 1962

MINISTRY OF AGRICULTURE,
FISHERIES AND FOOD
RECEIVED
15 JAN 1963

FISHERIES
LOWE

This leaflet by Dr. D. A. Hancock of the Ministry's Burnham-on-Crouch Laboratory calls attention to the serious damage done to our oyster fisheries by a pest from America. Methods of control are described; they are simple and easy to apply, and the benefits to be obtained are substantial.



H. A. Cole

Director of Fishery Research

TO OYSTER GROWERS IN ESSEX AND KENT

This is the AMERICAN WHELK TINGLE

Egg capsules



The American whelk tingle and its egg capsules
on a market-sized oyster. (Natural size)

DID YOU KNOW:

THAT in its native America the tingle is one of the worst enemies of the oyster, and destroys one million dollars' worth of oysters every year.

THAT the American tingle has been on oyster beds in this country only since about 1920 when it was introduced with relaid American Bluepoint oysters.

THAT so far it is limited to the coasts of Essex and Kent. It has not spread more than this because there is no free swimming stage in its life history.

THAT on one oyster bed, where only fifteen years ago it was hardly known, it has multiplied so rapidly that there are now 10,000 to the acre.

THAT it prefers to eat oysters, and particularly oyster spat of thumbnail size, to any other food.

THAT it attacks an oyster by drilling a hole through the shell and sucking out the flesh.

THAT during each feeding season, from April to October each year, one tingle will eat at least 40 oyster spat.

THAT each female tingle lays about 25 egg capsules each year, from each of which 10 young tingles hatch. It can thus produce more than 1,000 young during its lifetime.

THAT every newly hatched tingle can immediately eat young oyster spat, and will itself lay spawn when only two years old.

THAT a tingle lives to six or more years of age: during this time it will eat at least 240 young oysters.

THAT if introduced onto a well stocked ground one breeding pair of tingles can multiply to give more than 30,000 tingles in only three years.

THAT in Essex rivers tingles destroy more than half the oyster spat each year.

THAT on one Essex oyster ground in less than one year over 500,000 oyster spat were eaten by tingles - on another, 25,000 brood and 1,200 marketable oysters were eaten.

THAT EVERY TINGLE OR EGG CAPSULE LEFT ON YOUR GROUNDS WILL COST YOU MONEY

YOU CAN GET RID OF TINGLES:

BY DREDGING

Tingles CAN be caught in oyster dredges. If the size of the rigging is large many will be lost, and smaller or brood-rigged dredges are much more effective. The best catches of tingles are made in dredges from May to August when the tingles are most active. Large quantities of their egg capsules will be taken at this time attached to oysters and shells. This is also the time when native oysters are out of season and little dredging is usually done. It is in the best interests of every oyster planter who suspects he has American tingles to include the use of dredges with brood rigging in the programme of summer cultivation.

Every egg capsule taken should be scraped off and taken ashore or killed in hot water.

Remember a tingle can live out of water for 8 days, so it is not enough to return it to the water after a day or two. Keep a container handy, and make sure it is emptied on to the land above high tide.

BY TRAPPING

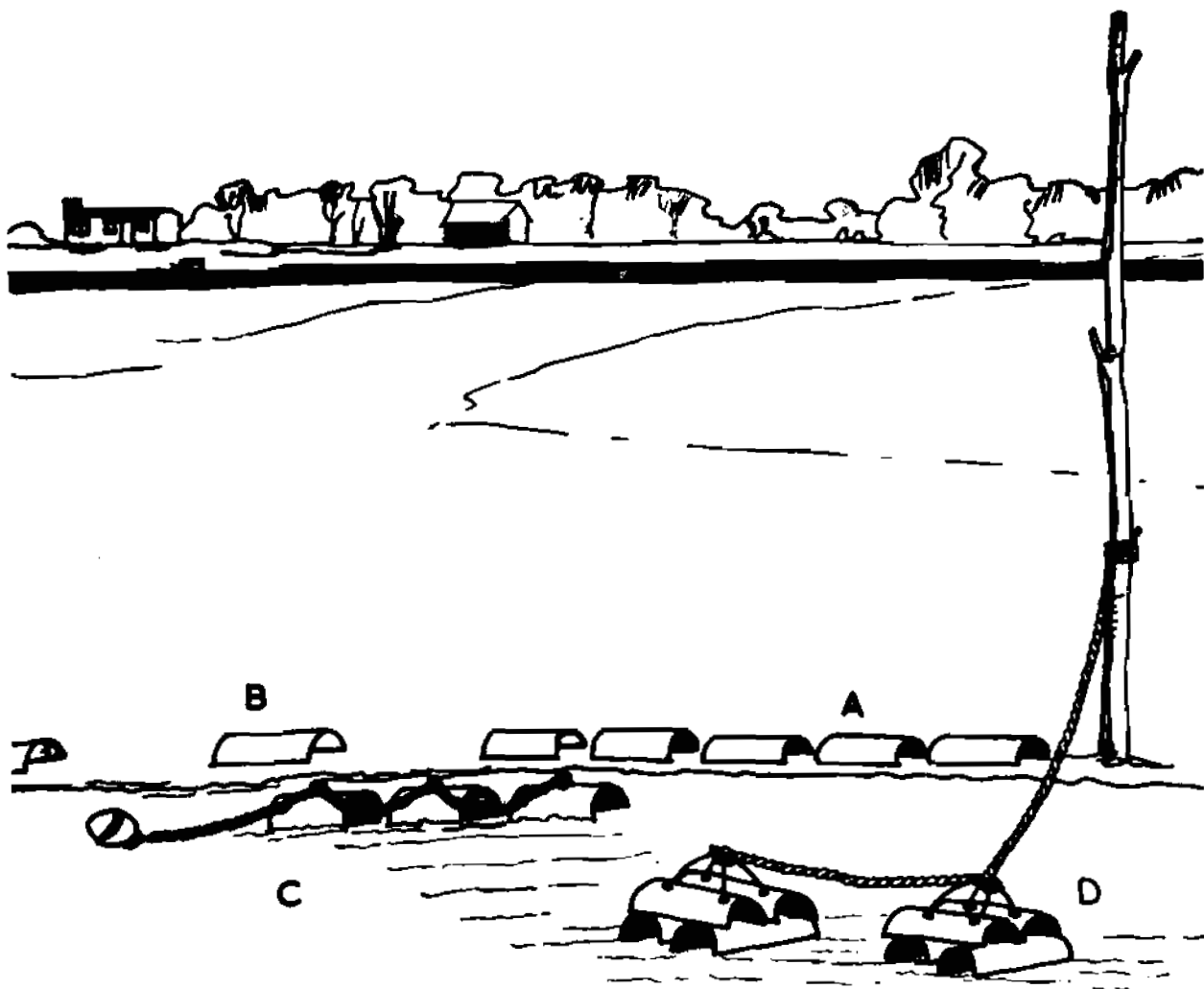
Tingles CAN be caught in traps

SHORE TRAPS

The most effective traps are curved roofing tiles or ridge tiles. They are very cheap, easy to handle and require no baiting. Their efficiency depends on the fact that tingles move on to the shore above low water mark every spring, and like to lay their egg capsules in raised, shaded places.

For best catches tiles should be used as follows:-

1. Choose a shore which is reasonably firm near low water mark - tingles cannot crawl over soft mud. It is well worth while scattering shells and shram along the water's edge to make it firm enough to prevent tiles from sinking into the mud.
2. Put tiles on the shore early in the first year, say about January, to allow them to "naturalise". Each year following lift them in spring to scrape off excess fouling, and then replace in line.
3. Lay them in a straight line at mean low water of spring tides with the tiles parallel to the water's edge, rounded surfaces uppermost to allow tingles to enter the hollow underneath (see diagram).
4. If sufficient tiles are available, lay them end to end along the whole length of the laying (A). If there are not enough, they may be placed at a distance of up to one pace apart (B, see diagram).
5. Tiles should be inspected at least once a fortnight at low water of a spring tide, commencing in April and continuing as long as it seems worth while, usually until October.
6. Tingles should be removed and egg capsules carefully scraped into a container, using a knife or cultack. If the ground under a tile has become soft by silting, the tile should be replaced on a firmer piece of shore.
7. Care should be taken not to trample the ground on the seaward side of the tile as this causes disturbance of the surface and may impede the shoreward migration of tingles.
8. Dispose of the tingles and egg capsules ashore.



The shore at low water mark of a typical oyster bed showing curved roofing tiles above low water mark, placed (A) side by side, (B) about a pace apart. (C) shows larger roofing tiles roped together and buoyed, and (D) "bouquets" of smaller tiles roped together and tied to a beacon at low water mark.

UNDERWATER TRAPS

These may be used below low water mark, especially where shores have proved unsuitable for the use of tiles. "Bouquets" of tiles, that is two tiers of tiles wired together so that the lower pair raises the upper ones out of the mud, or large single ridge tiles can be used. These are best roped together in a trot and either buoyed (C) or attached to a beacon (D); they can thus be recovered at any state of the tide.

HOW EFFECTIVE CAN THESE METHODS BE?

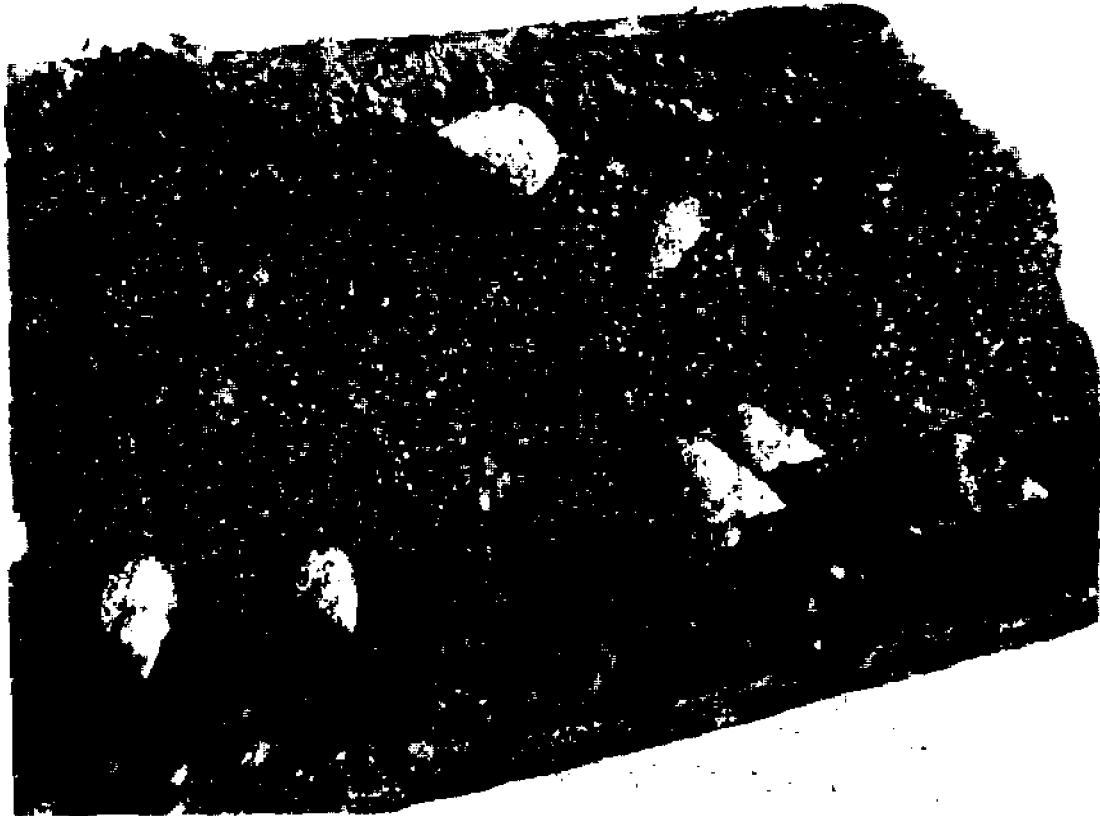
DREDGING

Dredging with two power dredges on a moderately infected ground in Essex yielded over 500 tangles in less than one day in summer, and this figure would have been greatly increased by the use of brood rigging.

On one occasion four hours' dredging with two power dredges yielded 79,000 egg capsules in addition to 250 tangles.

TRAPPING

225 roofing tiles on one shore caught 4,000 tangles and over 30,000 egg capsules in eight inspections during one year. Each inspection took half an hour by two men - that is, the total work was only eight man hours during the year. This photograph shows the underside of a single roofing tile with its catch of tangles and egg capsules.



One oysterman alone collected 15,000 tangles and countless egg capsules from only 100 tiles in two years. Suppose each tangle destroys one shilling's worth of oysters each year - in about eight hours' work this man had saved £750 worth of oysters, apart from the damage which would have been caused in later years by these tangles and their offspring.

You can reduce the numbers of tingles on your oyster beds - look at these results with 200 tiles:-

1954	3,752 tingles + 16,100 egg capsules
1955	2,369 tingles
1956	1,119 tingles + 4,960 egg capsules

If these methods of control are applied rigorously, damage by American tingles can be reduced to a minimum. Meanwhile scientists in this country and America will continue to seek methods for the complete eradication of this pest.

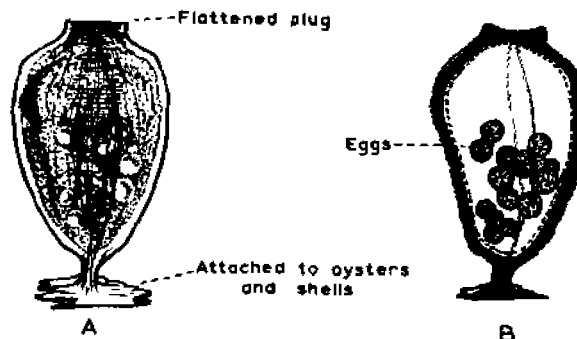
LOOK FOR THE SIGNS

The American Tingle



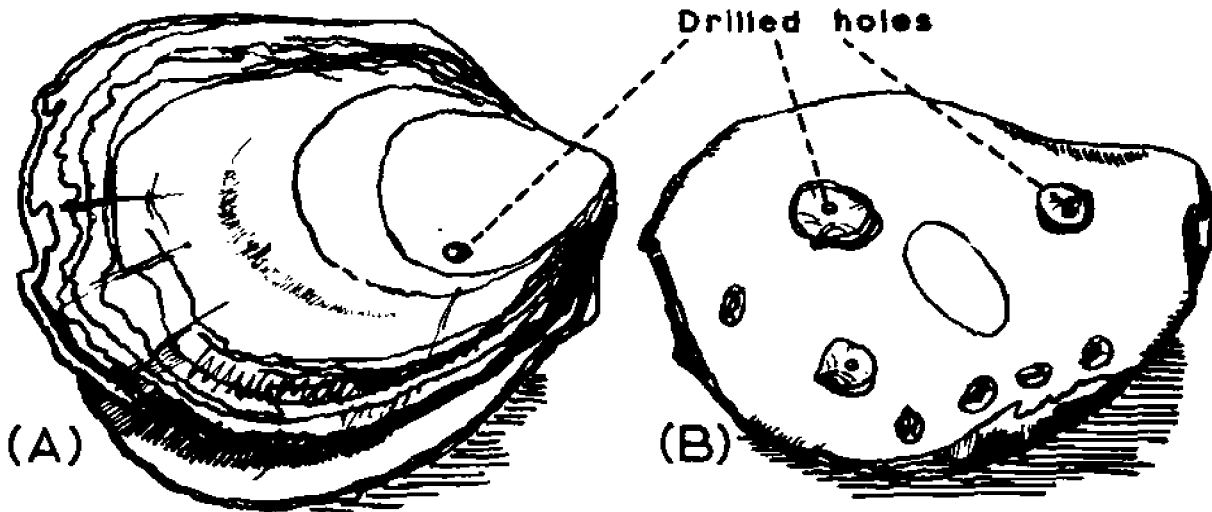
Shell of the American whelk tingle. (Natural size)

Its Egg Capsules



Egg capsules of the American whelk tingle (magnified five times)
(A) in surface view, (B) in section.
They are normally yellow in colour.

Or drilled oysters and oyster spat



Oyster (A) and oyster spat (B) drilled by the American whelk tingle.

and deal with it NOW!!

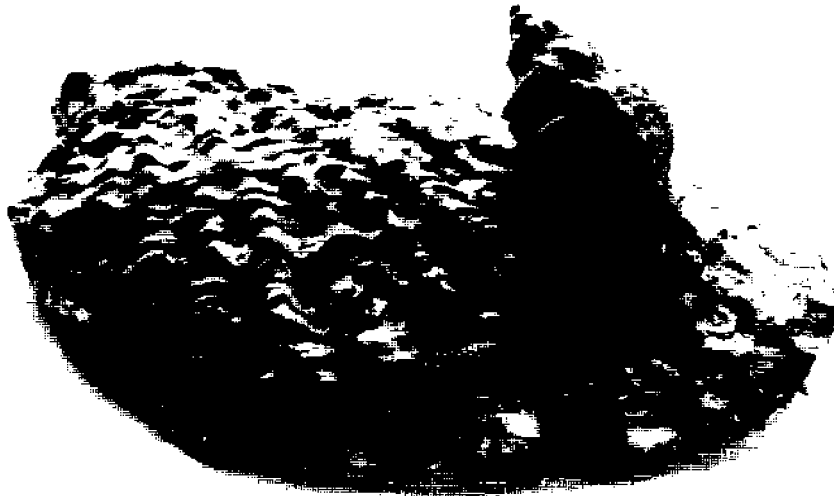
TO OYSTER GROWERS IN OTHER AREAS

American tingles are at present found only in Essex and Kent. Don't risk importing them to your grounds. To prevent this the following authorities have already made it illegal to import oysters for relaying from Essex and Kent without their permissions:-

East Suffolk and Norfolk River Board
Sussex Sea Fisheries Committee
Southern Sea Fisheries Committee
Devon Sea Fisheries Committee
Cornwall River Board
South Wales Sea Fisheries Committee

Support their action in your district

Even if your oysters are not affected by the American tingle, they may still be killed by its cousin, the European rough tingle:



Photograph of a European rough tingle

WHICH while not doing as much damage as the American tingle, takes a steady toll of oysters.

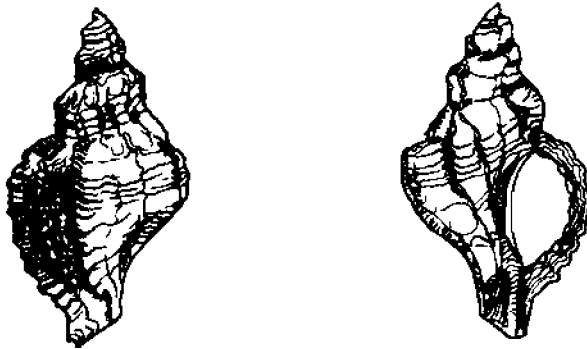
WHICH has a more corrugated shell than the American tingle.

WHICH used to be found on oyster beds all round the coast. It is now less abundant on the south-east coast but flourishes on oyster beds in Suffolk, Hampshire, Dorset, Devon, Cornwall and South Wales.

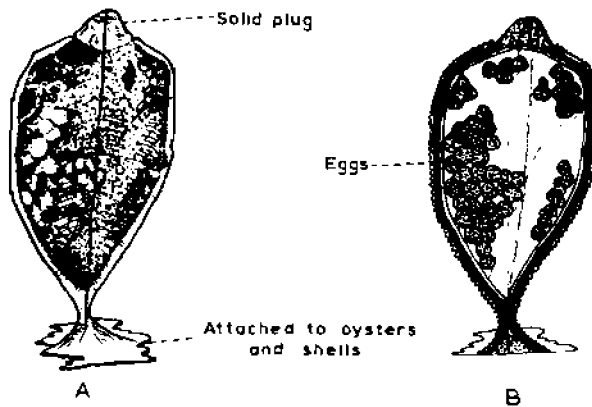
WHICH like the American tingle, drills holes in oysters.

WHICH lays egg capsules very similar to those of the American tingle.

WHICH should be controlled in exactly the same way as the American tingle by dredging and trapping.



Shell of the European rough tingle. (Natural size)
 This is usually larger than its American cousin
 and its shell is more strongly ridged and angular



Egg capsules of the European rough tingle (magnified five times);
 (A) in surface view; (B) in section
 Notice the plug is solid and not a flattened disc as in the capsule
 of the American tingle.
 The capsules are yellow, often tinged with purple.