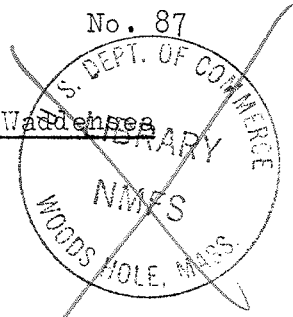


Checking Mytilicola's advance in the Dutch Waddensea

by

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Since *Mytilicola intestinalis*' presence in the Netherlands was revealed on the 9th of September 1949, much attention has been paid to its whereabouts in the Dutch coastal waters. Late in 1949 the Zandkreek, situated between the isles of North and South Beveland (Zeeland) was the only water where *Mytilicola* abounded. From this centre it spreaded all over the Zeeland waters, to bring disaster to the mussel industry in the year 1950.

It could be demonstrated how *Mytilicola* had been transferred incidentally with a consignment of mussels for relaying on the Zandkreek plots from natural beds in the vicinity of the isle of Borkum, near the Netherlands-German border.

In the year 1950 and 1951 a search was made in the Dutch Waddensea revealing a settled population of *Mytilicola* in the mussels on the natural beds in the easternmost section of the Dutch Waddensea, facing the German waters, i.e. on the Eemswadje and in the Sparregat. Further west, a light infiltration, practically incapable of reproduction, was observed in the mussels on the natural beds of Schild and Spruiten, but the mussels occurring in the Eilanderbalg, due east of the Isle of Schiermonnikoog, appeared to be completely devoid of this parasitic Copepode.

In the western section of the Waddensea *Mytilicola* appeared to be completely absent in the year 1950, and it still is completely lacking there now.

The transition zone was kept under careful control to witness any extension of *Mytilicola*'s range. Adult specimens died at an age of 8 to 9 months, but were replaced by *Mytilicola* larvae finding a host in the same area. Still these larvae could not depend on the stock of adults in the transition area itself, the latter's population being far too sparse, and the chance that a male and a female settle in one and on the same mussel being very exceptional there. In all probability it was the heavily infested area near the isle of Borkum which produced the larvae infiltrating the natural mussel beds further west. It could be that some larvae were transported east-west behind the Frisian islands by strong easterly winds, but the greater incidence close to the open sea revealed that most of the larvae must have been washed into the channels with the flood-tide from the open sea, after having migrated westwards on the ebb-tide from the Borkum area.

For several years the situation appeared to remain rather constant, safeguarding the important mussel districts very west, but already in the year 1952, the Eilanderbalg revealed a slight infiltration.

Considerable advance of *Mytilicola* could be noticed in the year 1958. At that time the Eilanderbalg, due east of Schiermonnikoog, and the waters further east (Schild, Spruiten) revealed a settled population producing larvae on a large scale. As a consequence of this development the channel west of the island Schiermonnikoog with its many branches in any direction was added to *Mytilicola*'s infiltration zone. In the year 1959 *Mytilicola* advanced still further, settling in the vast natural beds due south of the island Schiermonnikoog, and infiltrating as far west as the remains of the dike which connected formerly the isle of Ameland with the Frisian coast-line.

There is no reason to assume that this development will take a favourable turn; at most the considerable length of Ameland will safeguard the next channel some time against infiltration, but easterly winds may drift the larvae west behind the isle of Ameland.

The Dutch mussel farmers are upset by the gradual advance of Mytilicola which threatens their important area of mussel farming in the western section of the Waddensea with invasion. Having experienced the effect of heavy infestation in the Zealand waters, they want to take action, to make an effort to check Mytilicola's spreading in western direction.

Mytilicola's larvae can be transported with the tidal currents, but the further they travel the smaller the chance that they will meet in their future host a congener of the opposite sex. Their life span being limited to 8 or 9 months, they cannot wait very long for a life mate to come along with the tides. Light infiltration should therefore re-occur year after year since such an infiltration area does itself not produce any Mytilicola larvae to speak of.

The scarcer the mussels, the smaller the chance that Mytilicola's larvae will find a host. If the mussels are decimated in an area of infiltration there is very little chance that this area will ever turn into an area of real settlement. If an area where Mytilicola did settle already is fished so intensely that few mussels remain, there is every probability that such an area will turn into an area of infiltration in due course.

In an effort to check Mytilicola's spreading it has therefore been decided that the Dutch mussel farmers will make an effort to clean away as many mussels from the natural beds south and south-west of the island Schiermonnikoog as feasible. The lightly infested mussels of the western section will be transferred to the beds in Zealand, the heavily infested mussels will be destroyed. It will be tried to decimate likewise the mussels on the natural beds in the Eilanderbalg, due east to Schiermonnikoog.

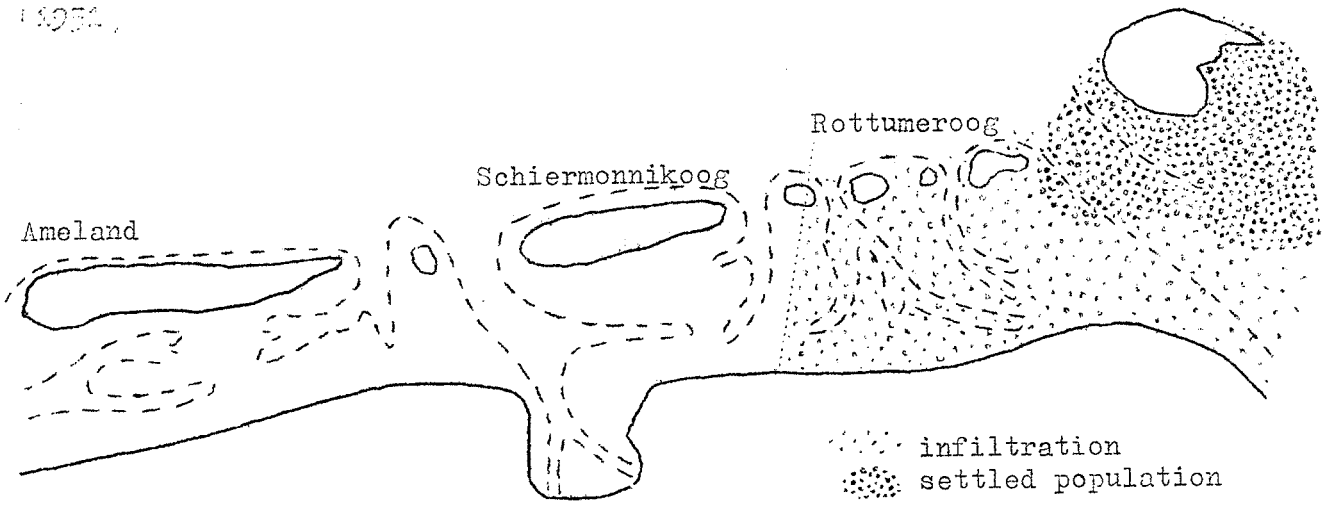
It will be necessary to repeat this cleaning of the natural beds in later years, especially after important setting of mussel-seed. It is hoped that this tremendous and expensive effort will lead to checking Mytilicola's advance in western direction, to safeguarding the mussel farming area further west, and perhaps even to return to the 1952 situation. Experience gained in the Zealand waters has demonstrated very clearly that a Mytilicola's well-being and extent depend largely on the relation mussels/water, since this parasite can only reproduce if a male and a female find each other in one and the same host.

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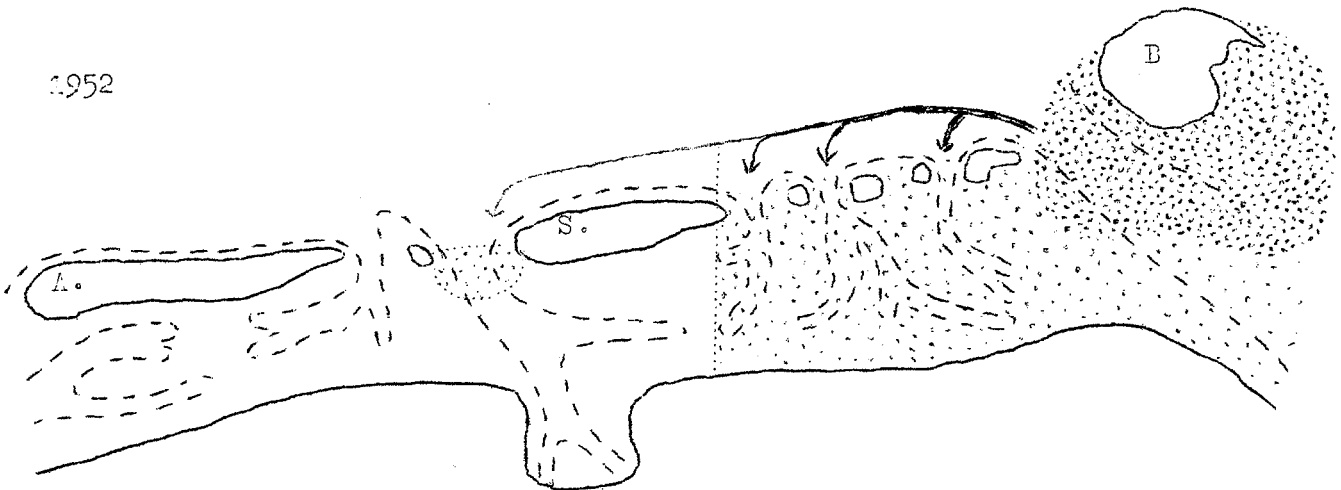
MYTILICOLA IN THE DUTCH WADDENSEA

Borkum

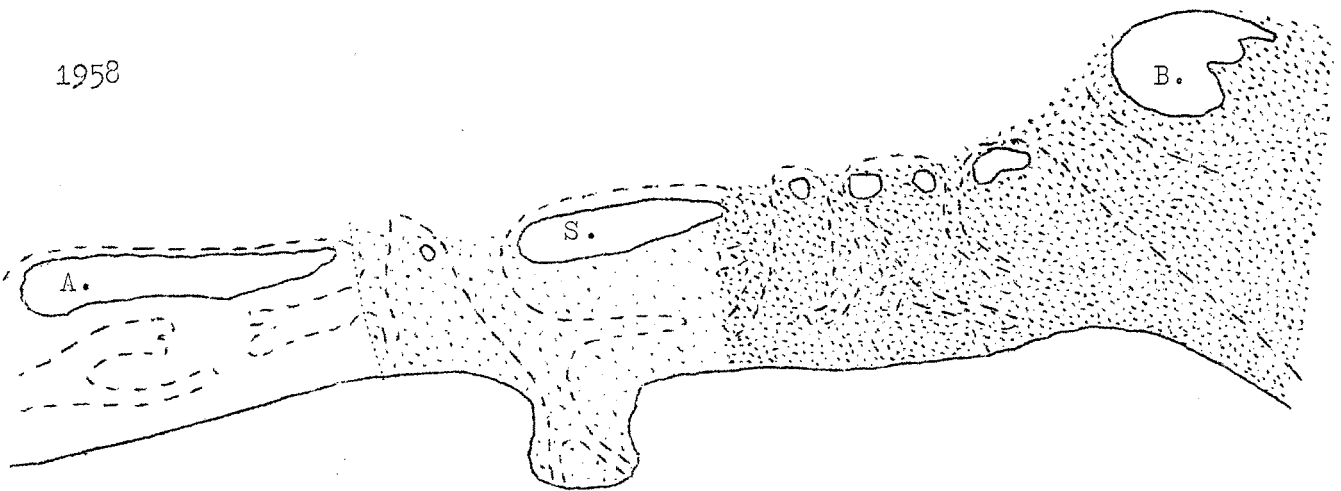
1951



1952



1958



1959

