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*Xerotracha conspurcata*  
from Cadzand-Bad,  
The Netherlands  
(p.43)



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# An unusually curved *Ensis leei* (Bivalvia, Pharidae), a reaction

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The shell of *Ensis* species is vulnerable and can easily be damaged. In response to a paper of Cadée (2018) a particular case of malformation of a specimen of *Ensis leei* Huber by the intrusion of a littorinid shell is elucidated.

Key words: *Ensis*, fishery, shell malformation, *Littorina*, The Netherlands.

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## INTRODUCTION

In 2017 the author described a specific case of malformation of *Ensis leei* Huber, 2015, in response to the intrusion of an empty shell of *Littorina littorea* (Linnaeus, 1758). According to Cadée (2018), damage caused by *Ensis* fishery is more likely. In my opinion "littorinid-damage" is still the most logical explanation for the deformation of the *Ensis* shell under consideration, which will be argued below.

## MALFORMATION

The relevant features of the *Ensis* shell, indicating survival are (figures in Van Nieulande, 2017):

- a deposit of callus at the anterior part of the inside of the left valve, interrupted by an irregular longitudinal groove (fig. 2j)
- at circa 4 cm from the anterior margins in the left valve, a mended crack (fig. 2h), with at the inside an impression of the *Littorina* shell in the callus (fig. 2j), and in the right valve an extending fold (figs 1e, 2h-i)
- a tapering ventral gap of more than 6 cm between the valves (fig. 1d).

These features made room for the littorinid shell within the valves and contradict damage originated

from the outside as well as the forming of a blister (Cadée, 2018: 33). I agree with Cadée (2018: 33) that the *Littorina* of 11 mm could not have entered the razor clam at a length of 4 cm, this must have happened when the *Ensis* was larger, perhaps at a length of circa 8 cm. I did not intend to suggest that similarly malformed *E. leei* shells have been found elsewhere along the Dutch coasts as stated by Cadée (2018: 33); the mentioning of unusually curved specimens (Van Nieulande, 2018: 90) was merely meant as an introduction.

*Ensis* fishery as a cause of the deformation of the shell in question is unlikely, as *E. leei* in the southern Netherlands is only fished for in the North Sea north and northwest of Walcheren (Van Tuinen, 2013: 8; Perdon et al., 2016: 12), whereas this particular shell was collected at the beach near Ritthem, along the Westerschelde southeast of Walcheren, province of Zeeland, The Netherlands.

## INTRUSION

A *Littorina* entering the *E. leei* on the beach (Cadée, 2018: 33) is not plausible. The razor clam was found closed and with closed valves the gaps are too small for the littorinid shell to enter. The entering of the *Littorina* into an empty bivalve implicates that the valves should have been open at first and later on enclosed the *Littorina* shell circa 4 cm from the anterior margins. The origin of the restored crack, the impression, and the fold remain unexplained.

## CONCLUSION

The penetration of the empty *Littorina* shell in a live *E. leei* still seems the most logical explanation of the unusual curvature of the shell in question.

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