

PALAEOECOLOGICAL INTERPRETATION OF THE MAASTRICHTIAN STRATOTYPE

by

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The deposits of the Maastrichtian type-area (near Maastricht, The Netherlands) contain a diversified and well preserved invertebrate and vertebrate fauna of Late Cretaceous age.

The presence in this fauna of only a few small and isolated rudistid bivalves (generally known as important « reef » builders in the Mesozoic Tethys seas) and of rare isolated corals, makes it unlikely that the Maastrichtian fauna was subtropical. On the other hand, comparison of faunal elements (mainly bivalves and echinoids) with recent Mediterranean and other warm water faunas indicates undoubted similarities. The bivalves of the genera *Pinna*, *Pteria*, *Isognomon*, the numerous scallops, limids and spondylids, the very varied echinoids and the presence of seagrass, closely related to *Posidonia* (seen on bryozoans), are common to-day in warm water seas and occur in the Maastrichtian stratotypical faunas.

Therefore, it seems probable that the combination, in the Maastrichtian stratotype, of faunal elements known from to-day's Mediterranean seas with small Cretaceous Tethys elements, points towards a shallow, warm, near-shore environment with seagrass meadows.

THE INFLUENCE OF INTRASPECIFIC COMPETITION ON THE FORAGING BEHAVIOUR OF THE OYSTERCATCHER

by

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In august 1983 we investigated a mussel-eating population of oystercatchers on the « Slikken van Vianen » (Eastern Scheldt, NL).

This predator — prey relationship can be described by Holling's Disk Equation (1959, *Can. Ent.*, 91, 385-398). However, in this model the affect of intraspecific competition (I.C.) between predators is ignored. Incorporating this affect, it is assumed that I.C. lowers the food intake of predators because they have to spend a certain amount of time in social interactions.

The proportion of time, lost in social interactions, is a function of the density of the predators. We conclude that the real food intake in a given habitat is defined by the maximal food intake, lowered with the proportion of time a predator actually can forage.

Our field observations indicated that the model is relevant and lead to two major conclusions :

— I.C. is an important factor in the foraging behaviour of the oystercatcher, it considerably lowers the food intake.

— Predators tend to aggregate in places with highest prey densities but spread out to less profitable places when I.C. increases. This resulted in an equal food intake for each predator in each plot. High prey densities and intense I.C. was found in the best plots. Less profitable places showed low prey densities with a low intraspecific competition.