

THE CHANGES IN SEASONAL OSCILLATIONS OF COPEPODS IN THE CENTRAL ADRIATIC

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In long term period, the copepod quantity at the permanent stations in the Central Adriatic has showed the changes in seasonal oscillations.

Pendant des recherches pluriannuelles sur les Copépodes de l'Adriatique Centrale, on a constaté des modifications dans le rythme des oscillations saisonnières.

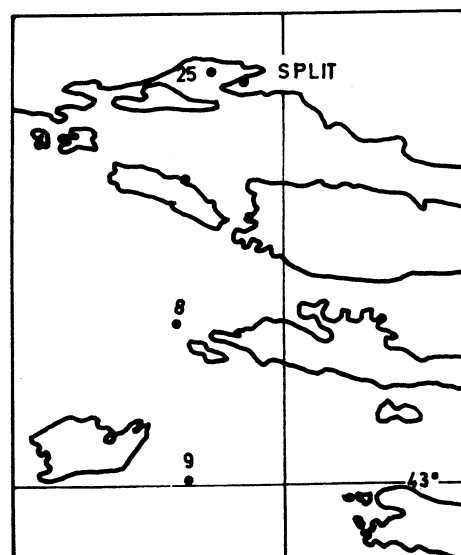
The first data on the seasonal oscillations of copepods at the investigated area (Fig.1) have been given by Gamulin (1939). So, two copepod maxima were found in the coastal region: the first one in spring, and the second in summer. Contemporary, only the spring maximum was found at the open sea.

Vučetić (1970), using the monthly means of total zooplankton from 1956 to 1967 y. has also found two maxima: the first in spring, and the second in fall.

Ten-year means of copepod number for the period from 1960 y. to 1969 y. (Regner, D., 1970) have showed the existence of two maxima in the same seasons.

Meanwhile, the results from 1970 to 1974 y. have showed three, even four maxima throughout the year at the whole area under investigations.

Examining the seasonal oscillations of phytoplankton quantity, Pucheran-Petković (1975), from 1968 to 1972 has also found three maxima, but only in coastal waters. The author has partly connected this phenomenon with the eutrophication, i.e. with the increasing of phosphate



concentration at the surface.

On the contrary, our data confirmed the existence of three or four maxima at the open sea, even though the phosphate concentration have not been changed there (V u k a d i n, unpubl.).

Authors:	Copepods	Zooplankton	Phytoplankton	Primary production	Fish larvae
Gamulin, 1939 (1936-37)	<u>2 maxima</u> in the coastal region (spring, summer) 1 at the open sea				
Vučetić, 1970 (1956-67)		<u>2 maxima</u> spring, fall			
Regner, D., 1970 (1960-67)	<u>2 maxima</u> spring, fall				
Pucher-Petković, 1975 (1968-72)			<u>3 max.</u> in coastal region, 2 at the open sea		
Regner, D. 1979 (1970-74)	<u>3 and 4 maxima</u> : Spring summer, fall				
Pucher-Petković, unpublished (1970-74)				<u>2 maxima</u>	
Regner, S., unpublished (1970-74)					<u>3 and 4</u> maxima

So, this phenomenon of three or four maxima of the copepods (instead of two), was so much interesting as we couldn't relate it neither with the change of phosphate, nor with the phytoplankton throughout the year.

We also have tried to relate our results with the primary production ($\text{mg C/m}^2/\text{day}$), but P u c h e r-P e t k o v i ć (unpubl. data) has found two maxima at the whole area.

Meanwhile, it was interesting to notice that the fish larvae have showed similar oscillations at the same area (R e g n e r, S., unpublished) from 1970 to 1974.

So, we could only conclude, that recently there have been some changes in the oscillations of copepod quantity throughout the year. The probable explanation could be in natural fluctuations. The further investigations will examine this presumption.

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