SOME CORRELATIONS BETWEEN HYDROLOGICAL PARAMETERS AND THE POPULATION OF *Acartia clausi* IN THE GULF OF TRIESTE.

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RESUME':Le Copépode *Acartia clausi* est l'espèce dominante dans le plancton du Golfe de Trieste avec des maximums en hiver, printemps et automne.On a observé que les principales données biométriques sont strictement corrélées avec la température.Les corrélations avec la salinité ne sont pas toujours strictes.

Acartia clausi is a neritic coastal Copepod having a broad ecological spectrum; it has been observed in extreme environments, such as estuaries, lagoons and harbours, all over the Mediterranean sea.
In the Gulf of Trieste this species is present all year round; it shows one absolute population maximum in late spring and two other periods of relative abundance late in autumn and at the beginning of spring. When food becomes scarce as it is the case at the end of autumn and in winter, the survival of this species depends most probably on its ability to feed on suspended detritus, which is abundant in the Gulf of Trieste and practically the only available source of food during those times of the year.
It has been observed that the maximum density at the end of the spring takes places always before the occurrence of the thermic maxima; as a rule, the species undergoes strong density increases, connected with rapid variations of sea temperatures (Specchi, Fonda-Umani and Radini, I98I).
The species was studied from samples collected from a fixed station in the Gulf of Trieste, where there were no indications of strong human interference.
The collecting was done from May I976 to August I979, at approximately monthly intervals. For every sample, temperature and salinity were recorded.
From each sample we took measurements of approximately hundred specimens (including females, males and juveniles). The measurements were:
- -total body length, from head to furca(b)
- -length of thorax (a)
- -maximal width of thorax (l).

The ratios between
l and a; l and b; a and b
were calculated. Then, separately for each sample, and for males, females and juveniles, the median values from the above sets of body measurements and ratios were calculated.
"b" in males and females shows maximal values in April-May, which are the months immediately preceeding the absolute density maxima of the species in our samples; the minimum values of "b" were always in correspondance to the density maxima.
All the recorded measurements were checked against temperature and salinity data; here the results, for females and males:
- -significant correlations (negative) were found between
  - -temperature and body measurements a, b, l;
- -significant correlations (positive) were found between
  - -temperature and a/b
  - -salinity and a
  - -salinity and b:

-no significant correlations were found between
 -temperature and 1/a
 -temperature and 1/b
 -salinity and 1
 -salinity and ratios all
-significant correlations (negative) were found for juveniles between
 -temperature and a, b, 1
-a significant correlation (positive) was found between
 -temperature and a/b
 -no significant correlations were found between salinity and the different body measurements (see tables).

♀♀	a	b	l	a/b
t	−−	−−	−−	+
s	++	+		

♂♂	a	b	l	a/b
t	−−	−−	−−	++
s	+	++		

juv.	a	b	l	a/b
t	−−	−−	−−	+
s				

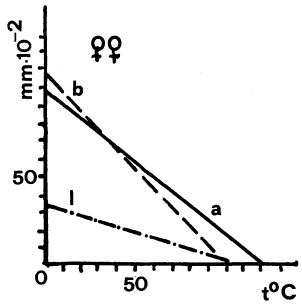


fig.1 a: y = -0,79x + 95,34
(r = -0,787)
b: y = -1,19x + 122,98
(r = -0,719)
l: y = -0,30x + 30,94
(r = -0,728)

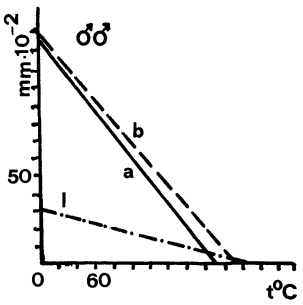


fig.2 a: y = -0,79x + 95,56
(r = -0,846)
b: y = -1,15x + 124,24
(r = -0,830)
l: y = -0,28x + 31,62
(r = -0,682)

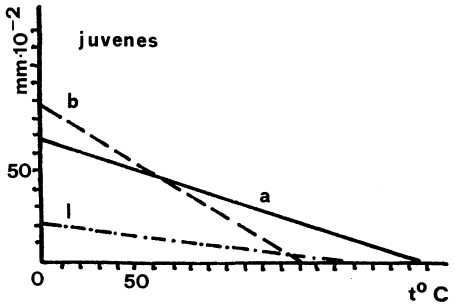


fig.3 a: y = -0,32x + 68,26
(r = -0,498)
b: y = -0,59x + 85,89
(r = -0,573)
l: y = -0,12x + 21,36
(r = -0,561)

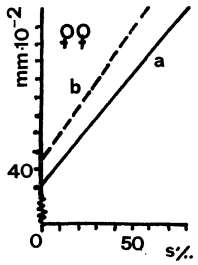


fig.4
a: y = 1,19x + 40,35
(r = 0,459)
b: y = 1,39x + 52,92
(r = 0,460)

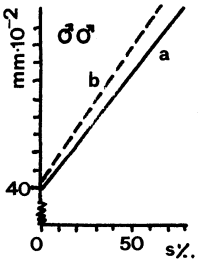


fig.5
a: y = 1,13x + 42,28
(r = 0,471)
b: y = 1,60x + 48,39
(r = 0,459)

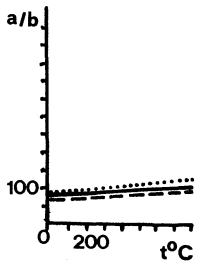
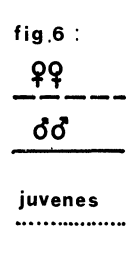
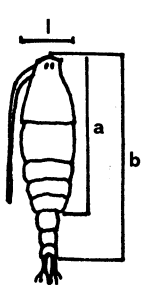


fig.6 ♀♀: y = 0,06x + 79,31 (r = 0,301)
♂♂: y = 0,08x + 77,43 (r = 0,435)
juvenes: y = 0,08x + 81,48 (r = 0,338)





We found that,corresponding to the thermic maxima,the specimens were,on average, smaller,and corresponding to the thermic minima,the specimens were,on average, larger.
Perhaps the above correlations are not indicative of a direct action by environmental conditions on the structure of the population of *Acartia clausi* ;they may be indirect functions of environmental actions on other factors,such as phytoplancton,detritus,competition,which may cause the observed differences in size of our specimens.

Bibliographie

SPECCHI M.,FONDA-UMANI S. et RADINI G.,I98I -*Rapp.Comm.int.Mer Medit.*,27 (7), 97-IOO.