

## B-V3

### Relative Growth of the Crusher Propodite of *Nephrops norvegicus* (L.) in the Northern Tyrrhenian Sea

Franco BIAGI\*, Stefano DE RANIERI\* and Mario MORI\*\*

\*Dipartimento Scienze Ambiente e Territorio, via A. Volta 6, 56100 Pisa (Italia)

\*\*Istituto Anatomia Comparata, V. le Benedetto XV, 5, 16132 Genova (Italia)

Though a lot of research has dealt with the relative growth of *N. norvegicus* only few papers (FARMER, 1974; SARDA' et al., 1981; OBRADOVIC, 1988) have treated the relative growth of the crusher propodite in detail. The aim of this work is to look at the relations of carapace length to various crusher proportions in both sexes of *N. norvegicus*.

The morphometric study was carried out on the Norway lobsters collected in Spring 1986 in the area comprised between the Isles of Elba and Giannutri. The following measurements were taken by a vernier calliper to the nearest 0.1 mm: Carapace length (CL), from eye socket to the mid-posterior margin of the carapace; Crusher propodite length (CPL), the distance from the tip of the propodus to the articulation with the carpus; Crusher propodite width (CPW), width across the palm; Crusher propodite depth (CPD), depth of the palm measured at CPW level; Anderson cheliped index (CPV), volume index based on the product of CPL, CPW, and CPD divided by carapace length (AIKEN & WADDY, 1980). The various measurements were plotted vs. CL and analyzed according to FINNEY & ABELE (1981) (Tab.1), while comparisons between sexes are shown in Tab.2.

Tab.1 - Estimated parameters between CPL, CPW, CPD, CPV (Y) and CL (X) for both sexes. N = Number of specimens; range = carapace length (mm) range; a = intercept; b = slope; SE = standard error of the slope; AS = allometric status by testing the slope vs a standard of 1,  $\alpha = 0.05$ ; + = positive allometry; 0 = isometry; r = correlation coefficient.

Sex	N	range	a	b	SE	AS	r
Males (CPL)	264	15-68	-0.02415	1.126275	0.01	+	0.990
Females (CPL)	118	13-51	0.12530	1.017720	0.01	0	0.986
Males (CPW)	264	15-68	-0.81021	1.245487	0.01	+	0.987
Females (CPW)	118	13-51	-0.75243	1.200911	0.02	+	0.983
Males (CPD)	264	15-68	-0.97279	1.267291	0.01	+	0.982
Females (CPD)	118	13-51	-0.95454	1.246804	0.02	+	0.971
Males (CPV)	264	15-68	-0.80716	2.639054	0.03		0.982
Females (CPV)	118	13-51	-0.58166	2.465437	0.04		0.977

Tab. 2 - Equality test, at same size range, between the relationships of both sexes. N.S. = not significant; \* = significant

Comparisons of the slopes (b)			Comparisons of the intercepts assuming a common slope (b*)		
Groups	t	Statistical differences $\alpha = 0.05$	b*	t	Statistical differences $\alpha = 0.05$
(a) M - F (CPL)	2.88	*	-----	-----	-----
(b) M - F (CPW)	0.54	N.S.	1.193	0.06	N.S.
(c) M - F (CPD)	0.84	N.S.	1.217	0.11	N.S.
(d) M - F (CPV)	0.20	N.S.	2.483	0.23	N.S.

The significative difference between CPL-CL relationships of both sexes is in agreement with FARMER (1974), SARDA' et al. (1981), and OBRADOVIC (1988), though this last author takes into account the total length instead of CL. Contrary to SARDA' et al. (1981) and OBRADOVIC (1988) no significative difference is observed in CPW-CL and CPD-CL between sexes within the same size range. The results obtained by these authors could be due both their having use groups of specimens of different size ranges for comparison and because, at the biggest sizes of CL, greater than 40 mm, the males, show a marked change in the chelae allometry (BIAGI et al., 1990).

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