A Summer large scale distribution of pelagic shrimps in the Liguro-Provencal Basin

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Crustacean Decapods are an important component of pelagic food webs. In the framework of a large scale macroplankton sampling in the Western Ligurian Sea aimed at the key species in the diet of large nekton (tuna, swordfish, cetaceans), we describe this taxocenosis in the 0-750 m range.

Sampling methods

Over a period of two weeks (August 17 - 29 1991) using the R/V *Minerva* (CNR), an area of 8600 sq. naut. mi. was covered, and 20 sampling stations were located along four transects: A, Genova-Calvi; B, Monaco-Calvi; C, Marseilles-Gulf of Porto; and D, perpendicular to B, from 43.13.89N 07.35.66E to 43.32.63N 08.15.49E (Fig.1). The standard haul for macroplankton, consisted in a oblique tow of a 15 feet open I.K.M.T. (2x2 mm mesh in the cod end), from 750 m to the surface in steps. The haul lasted two hours at a ship speed of about 3 knots. The net opening was calculated to be 17.55 m^2 on analogy with the 3 m I.K.M.T., whose opening is estimated to be 7.8 m^2 (FOXTON, 1969). The amount of filtered water per hour is 97571 m^3. The sampling time (beginning of the haul) ranged from 07.35 a.m. to 20.32 p.m.

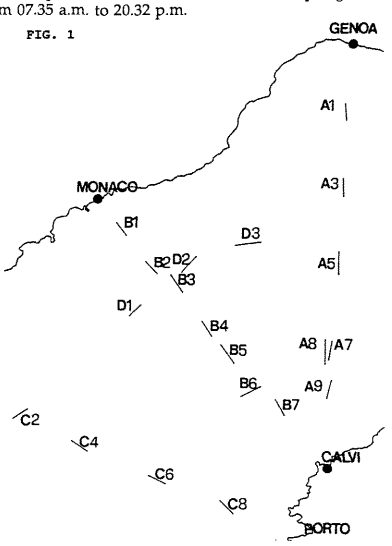
Results

A total of 3779 specimens were collected (Table 1) with an average of 183.2 ± 74 per station. The most abundant species were *Gennadas elegans* (39.7%), *Sergestes arcticus* (30.6%), and *Pasiphaea multidentata*, mainly represented by young individuals (13.5%).

Remarks

1) In the present offshore pool of Decapods the dominance of *G. elegans* is interesting : it represents a common feature with Atlantic areas (FOXTON, 1970, HARGREAVES, 1984). Nearest the coast S. *arcticus* (FRANQUEVILLE, 1971, VU DO, 1981, SARDOU and ETIENNE, 1988), and *P. sivado* (personal observation in the Gulf of Genoa) proved to play this role. Detailed information on distribution, density, sex ratio and size frequencies of *G. elegans* have been given (ORSI RELINI and TARTAGLIA, 1991).

FIG. 1



TAB. 1

Stations	*Acanthephyra pelagica*	*Funchalia villosa*	*Funchalia woodwardi*	*Gennadas elegans*	*Pasiphaea multidentata*	*Pasiphaea sivado*	*Sergestes arcticus*	*Sergestes cornutum*	*Sergestes sargassi*	*Sergestes vigilax*	*Sergestes sp.*	*Sergia robusta*	Totals
A1	--	--	--	101	22	9	11	3	1	3	1	--	151
A3	27	--	2	76	39	58	8	6	5	3	--	22	246
A5	--	1	--	38	35	6	15	9	1	2	--	--	107
A7	--	--	--	28	6	7	56	10	3	7	8	--	125
A8	9	--	--	108	55	16	92	23	13	16	--	11	343
A9	--	--	--	70	24	7	31	6	5	1	--	1	145
B1	--	--	--	76	24	30	53	5	1	4	--	--	193
B2	1	--	--	76	30	10	23	1	1	--	1	1	144
B3	--	--	--	1	5	25	49	--	9	1	--	--	90
B4	--	--	--	9	15	7	60	5	6	4	--	--	106
B5	1	1	--	165	17	8	50	3	2	1	--	2	250
B6	--	--	--	21	5	3	28	4	4	3	--	--	68
B7	12	--	--	97	27	6	49	9	1	3	--	6	210
C2	--	--	1	116	30	8	105	3	7	--	--	--	270
C4	--	1	--	114	10	6	189	8	2	6	--	--	221
C6	2	1	--	19	--	2	73	--	3	3	1	--	104
C8	--	--	--	150	19	1	70	17	--	10	--	--	267
D1	2	--	--	46	58	5	63	3	3	--	--	3	183
D2	--	--	--	84	35	11	36	2	5	--	--	--	173
D3	--	--	--	106	54	7	95	4	--	2	--	--	268
	54	4	3	1501	510	232	1156	121	72	69	11	46	3779

2) Besides the listed species, also *Lucifer typus*, *S. mollis* (FRANQUEVILLE, 1971) and *Acanthephyra eximia* (RELINI ORSI, 1973) have been recorded in the area. In particular, this last species is easily found in the Gulf of Genoa when sampling is effected below 1000 m.

3) Given that the vertical distribution of the listed species extends more than 750 m (FRANQUEVILLE, 1971), vertical migrations influences the catches. In particular, a group of "deep species" (*G. elegans, S. robusta, A. pelagica, F. woodwardi)* may be distinguished from the others. The correlation between time of sampling (in a fivepoint scale of light) and numbers of individuals collected in each station was tested for single species and for groups of species. The correlation proved positive for *G. elegans* (P=0.05) and for the above mentioned "deep group" (P=0.01) and absent for the others. In other words, a column of 750 m is probably the suitable sampling range only for the "less deep" species.

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