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NOTES AND NEWS

FECUNDITY OF TROPICAL EUPHAUSIIDS FROM THE CENTRAL AND WESTERN PACIFIC OCEAN

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In previous papers (Roger, 1973, 1974), some observations have been presented on the fecundity of tropical species of euphausiids frequently caught in the Central and Western Equatorial and South Tropical Pacific Ocean. Further studies gave additional results, so that data are now available for nearly all most abundant species from these regions. As a matter of fact, referring to the zoogeographical study carried out by Roger (1974), it appears that the fecundity of most of the species not considered here can be approximately deduced from that of closely related ones, i.e.: *Euphausia brevis* Hansen and *E. mutica* Hansen from *E. diomedeae* Ortmann; *Euphausia paragibba* Hansen from *E. gibba* G. O. Sars; *Thysanopoda obtusifrons* G. O. Sars and *T. subaequalis* Boden from *T. aequalis* Hansen; *Stylocheiron maximum* Hansen from *S. abbreviatum* G. O. Sars; *Nematoscelis gracilis* Hansen and *N. microps* G. O. Sars from *N. atlantica* Hansen; *Nematobrachion sexspinosum* Hansen from *N. flexipes* (Ortmann).

The only important species for which the evaluation of the fecundity remains missing are *Euphausia tenera* Hansen and *E. fallax* Hansen.

The number of ripe eggs in the full grown ovary (stage IV as described in Roger, 1973) has been considered a sufficiently good measure of the fecundity. Mauchline (1968) has shown that this procedure leads to an overestimate of the fecundity, as it seems likely that not all ripe eggs are finally laid; he suggested to use preferably the difference between the volumes of the ripe and spent ovary divided by the mean volume of one ripe egg, to obtain a better estimate of the number of eggs actually laid. Besides the possible inaccuracies of this method, it implies that the spent ovary is a recognizable structure; this condition is not clearly fulfilled in tropical regions, where reproductive processes are nearly permanent, and I failed to identify with certainty the stage "spent ovary", which, as suggested in Roger (1974), would closely resemble the stage II (immature) ovary.

On the other hand, I do not agree with Mauchline (1968) that the extended breeding season of many tropical species of euphausiids involves... "more or less continuous release of eggs from the individual ovary". Breeding is continuous for the whole population, but, according to the observations reported in Roger (1974),

it seems likely that an individual female produces all her ripe eggs at once or at least within a few days; the stage IV ovary contains very large and very small eggs, but no eggs of intermediate size, suggesting that the maturation process is not continuous. Therefore, counting of ripe eggs provides probably an acceptable estimate of fecundity, although, despite strong presumptions, it is not certain that each female breeds only once during her life span.

Results are given in table I. Comparison with the fecundity of temperate or cold water species can be made by reference to the review of Mauchline & Fisher (1969).

TABLE I

Fecundity of 21 species of euphausiids from the tropical Pacific Ocean: number of ripe eggs in the full grown (stage IV) ovary. At least 10 specimens have been examined for each species, except for *S. elongatum* (6), *S. longicorne* (4), *S. microphthalma* (4) and *N. atlantica* (4)

Species	Number of ripe eggs in the full grown (stage IV) ovary	
	Mean value ("fecundity")	Extremes
(a) *Thysanopoda cristata* G. O. Sars	40	20—76
(a) — *tricuspidata* H. Milne Edwards	40	20—82
(a) — *orientalis* Hansen	54	38—74
(a) — *monacantha* Ortmann	54	32—72
(a) — *pectinata* Ortmann	54	30—82
(a) — *aequalis* Hansen	24	16—31
Stylocheiron carinatum G. O. Sars	10	5—14
— *abbreviatum* G. O. Sars	29	13—52
— *elongatum* G. O. Sars	3.5	2—5
— *longicorne* G. O. Sars	11	6—16
— *affine* Hansen	9	4—12
— *suhmii* G. O. Sars	12	8—15
— *microphthalma* Hansen	11	10—13
(a) (b) *Euphausia diomedeae* Ortmann	80	—
(b) — *fallax* Hansen	80	—
(b) — *gibba* G. O. Sars	60	—
(a) *Nematoscelis tenella* G. O. Sars	65	50—80
— *atlantica* Hansen	102	62—143
(a) *Nematobrachion flexipes* (Ortmann) Calman	19	12—39
(a) — *boopis* Calman	9	4—12
(a) *Bentheuphausia amblyops* G. O. Sars	3.5	1—7

(a) After Roger, 1973.
(b) No typical stage IV ovaries have been observed for these species. The numbers of ripe eggs have been estimated from stage III ovaries.

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