

sense exist in *Patella coerulea*, where vitellogenesis takes place directly from the ergastoplasm.

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Sex Difference in Accidental Mortality of Guppies exposed to Elevated Temperature

MASS mortalities of fish exposed to low¹⁻⁶ and high⁷⁻¹⁰ temperatures in Nature have been reported ; but no sex differences in such incidents appear to have been recorded. The omission of data on sex ratios may be due to the fact that their interpretation would generally be unsatisfactory since the sex ratios of the original populations would be unknown, and even slight differences in habits of the sexes might result in their exposure being significantly different. In the present instance, interpretation is easier because the exact number of adults of each sex before and after exposure is known.

Over a week-end the temperature of the laboratory in which about 2,000 guppies of unnamed strains being developed for experimental purposes were housed was accidentally raised. At the time the accident was discovered the temperatures in aquaria ranged up to 41° C. and about 150 adult and many young fish were dead. Some adult fish survived in 14 aquaria in which deaths occurred and in which there were adults of both sexes. The results of observations on fatalities and survival among adults in these aquaria are presented in Table 1. Generally, if both immature fish and adults were present the former were almost all dead if any adults were ; and in one tank with several large females as well as smaller ones, the smaller ones died and the large ones all survived.

Table 1. COMPARISON OF SURVIVAL OF ADULT MALE AND FEMALE GUPIES EXPOSED TO ELEVATED TEMPERATURE

	Male		Female	
	No.	Per cent	No.	Per cent
Surviving	10	32	47	81
Dead	21	68	11	19

The difference in the mortalities of adults of the two sexes has been examined using the chi-square test and found to be statistically significant ($P < 0.002$ using the two-tailed test).

The observations here reported agree with the usually observed higher mortality of males¹¹ and with the laboratory observations of Gibson¹² on survival times of guppies at 37°, although they do not agree with her results at other temperatures. She found

that the mean time to death of guppies at 37° was about 50 per cent higher for females than for males. At 34°, on the other hand, the time to death was greater for males (5,660 min.) than for females (3,400 min.) and at other temperatures (35°, 36° and 38°) she found no sex differential.

Before the mass mortality here reported, the sex ratio for adults in the aquaria was 54 males per 100 females ; after the accident, 21 males per 100 females. (The original ratio cannot be interpreted as a 'natural' one for some aquaria contained mated groups that had been selected, and fish had been removed from others for experimental purposes.) The observations on this laboratory population suggest that elevations of temperature such as occur in small, shallow, unshaded ponds may bring about significant alterations of the proportions of the sexes.

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Stereobalanus, a Genus New to the Old World

DURING a faunistic survey of all the lochs on the west coast of Scotland from Cape Wrath to the Solway, several pieces and some whole specimens of a golden yellow enteropneust were discovered in bottom samples taken with a 1/10 Van Veen grab (Fig. 1). The geographical location and bathymetric distribution of these specimens are given in Table 1.

In the first four localities the substratum consisted of a layer a few cm. thick of black glutinous mud overlying a stiff clay, but in Loch Glendhu it consisted of a mixture of small stones and mud. As the sampling intensity in all the lochs examined was fairly uniform, it is evident that the species is moderately common and widely distributed along the west coast

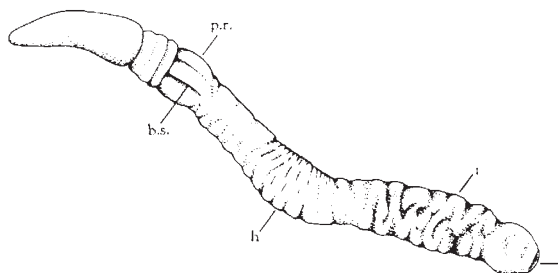


Fig. 1. *Stereobalanus* sp. Line drawing from photograph of live specimen. Overall length, about 8 cm. a, Anus; b.s., common branchial slit; h, olive green hepatic region; i, sac-like intestinal region; p.r., parabranchial ridges