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SHORT COMMUNICATIONS

IRFAN AHMAD[1]) & M. SHAMIM JAIRAJPURI[2]): Sex attraction in ageing *Chiloplacus symmetricus.*

Ageing in nematodes produces not only morphological but also physiological and behavioural changes. In the present work, the effects of age and reproductive state of the males and females of *Chiloplacus symmetricus* (Thorne, 1925) Thorne, 1930 on sexual attraction were observed.

The sexes were kept separate after the fourth moult for 1, 4, 8 or 12 days in malt-peptone agar. Sex attraction was tested in modified mickey mouse chambers (Ahmad & Jairajpuri, 1980b) using 1% water agar. 50 females were introduced into the test chamber and 24 hr later 50 males were released in the inoculation chamber and the distribution of the males was recorded after 4 hr. Significance tests (Students *t*) were carried out between the number of males in the test chamber and the number in the control chamber. The following four combinations were tested: virgin males to virgin females; virgin males to non-virgin females; non-virgin males to virgin females and non-virgin males to non-virgin females. Each set of combinations was replicated five times.

Sex attraction in *C. symmetricus* depended on age as well as the reproductive state of the worms. As is evident from Table I, virgin males of all age groups responded to 1, 4 and 8 day old virgin females but only 1 day old virgin males showed a positive response to 12 day old virgin females. The response of virgin males to non-virgin females, however, was greatly inhibited and 12 day old virgin males showed a positive response only to 1 day old non-virgin females and other males only towards 1 and 4 day old non-virgin females. The response of non-virgin males towards virgin females decreased with age and 8 and 12 day old males' response towards 8 day old virgin females was not significant. The response of non-virgin males to non-virgin females was reduced more than the response of virgin males to non-virgin females and most age groups of males responded positively only towards 1 day old non-virgin females.

The exact source which emits sex attractants in nematodes has, so far, not been clearly located and it is quite possible that there may be a different source in different species. Cheng & Samoiloff (1972) believed that the gonads of

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TABLE I

The response of ageing virgin and non-virgin males towards ageing virgin and non-virgin females. Mean number migrating to the test chamber

	Age Days	Virgin males 1	4	8	12	Non-virgin males 1	4	8	12
Virgin females	1	35**	31**	31**	27**	31**	28**	25**	21*
	4	31**	30**	26**	24*	31**	27**	24*	21*
	8	25**	26*	22*	22*	28**	25*	20ns	19ns
	12	22*	20ns	21ns	17ns	24*	21ns	17ns	15ns
Non-virgin females	1	32**	29**	30**	25*	30**	28**	25*	23*
	4	27**	24*	23*	17ns	22*	18ns	17ns	17ns
	8	20ns	18ns	19ns	19ns	18ns	15ns	17ns	15ns
	12	14ns	15ns	16ns	12ns	18ns	15ns	16ns	14ns

** = $P<0.01$; * = $P<0.05$; ns = not significant ($P>0.05$).

Panagrellus silusiae (DeMan) produced these attractants but in *Aspiculuris tetraptera* Nitzsch the pulvillar cells of the vulval region were thought to be the source (Anya, 1976). In species of *Heterodera* and *Globodera* the attractants were obtained from the anterior and posterior ends of the females (Green & Greet, 1972). The rhabditid nematode *Cruznema lambdiensis* (Maupas) showed a decreased sexual response with advancing age (Ahmad & Jairajpuri, 1981a) and at the same time degenerative changes occurred in its reproductive system (Ahmad & Jairajpuri, 1981b). Similar observations were made on *Panagrellus redivivus* (Linn.) by Duggal (1978). These observations together with the dramatic decrease in the attraction of virgin and non-virgin males to non-virgin females of *C. symmetricus* suggest that the gonads may be producing these sex attractants. The source of attractants, wherever it might be located, is in fact bound to undergo physiological changes with ageing of the nematodes and would consequently also influence sex attraction. In *C. symmetricus* where only male attractants are known (Ahmad & Jairajpuri, 1980a) a reduced response with increased age can be attributed to a decreased flow of attractants. However, a decreased response of ageing males towards young virgin females perhaps indicates that changes in the perceptibility of the males, caused by an increased threshold response level, might also be inhibiting their attraction.

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