OBSERVATIONS ON THE CONSTRICTIVE PHASE OF FEEDING BEHAVIOUR IN *BOA CONSTRICTOR*

V. C. Quesnel and L. Wehekind

The observations recorded here were begun in complete ignorance of any previous work there may have been. Since subsequent searching in the small library available to us revealed no comparable study we have thought it worthwhile to prepare this short note; yet, it seems hardly possible that similar observations have not been made before.

The tests had two objectives: 1) to determine whether or not the termination of constriction depended upon some stimulus from the prey; 2) to gain some insight into the nature of the stimulus if there were one.

The observations were made during the period September to December 1958 on two young specimens of **Boa constrictor,** 2 — 3 feet long, and at that time named Antony and Cleopatra, though both were later found to be female. We retain the names here for convenience. They were fed once a week on young mice of which they took two or three at each meal. Each mouse was held by the tail and dangled near the snake's head The mouse was seized and constricted in one smooth, quick action. The duration of constriction was timed with a stop watch from the moment of seizure to the moment of relaxation of the coils.

When constriction had been timed with living mice ten times for each snake, tests with dead mice were begun. Each mouse was killed by a blow on the head and either presented to the snake immediately or after a lapse of 15 min. Though the body temperature of the mice was not determined, we assumed that mice presented immediately after death were at normal body temperature whereas those presented 15 min. after death were colder. Thus, we hoped to determine whether there was any difference in response to "cold" as distinct from "warm" dead mice. Cold and warm mice were presented randomly.

The results are given in Table 1. The main features are as follows. There was no statistically significant difference in behaviour between the two snakes. Both constricted cold, dead mice for significantly shorter periods than living mice but did not constrict warm, dead mice for periods that were significantly different from those for living or for cold, dead mice.

Thus, our first objective was attained. The results show clearly that the duration of constriction was not invariable but was determined by some stimulus from the prey. Our second objective was not attained. Although there was a difference in response to cold and warm dead mice, the difference is not significant and the snakes may have been reacting to features other than temperature. That the snake constricts as long as there is any movement in the prey seems to be the popular belief and, in these experiments, although there was no gross movement in the dead mice, the heart may still have been beating in the warm ones. If so, the cessation of beating rather than a fall in body temperature may have determined the duration of constriction. Obviously, the experiments should be repeated with dead mice artificially warmed in an incubator after heartbeat has stopped. It would be interesting, too, to test the effect of movement in a cold animal by inducing movement in an eviscerated mouse by means of an inflatable balloon sewn within it.

TABLE 1. The duration of constriction in seconds for two boas (Antony and Cleopatra) feeding on living and dead mice. Statistical methods and symbols are those given in Facts from Figures by M. J. Moroney, Penguin Books, 1956. The test of significance is Student's t test.

	Antony			**Cleopatra**		
	Living	**Warm**	**Cold**	**Living**	**Warm**	**Cold**
	280	142	107	195	190	0
	316	135	10	214	263	0
	205	255	95	240	0	0
	156	55	0	155		0
	214	0	41	188		0
	149	110		143		0
	127			176		0
	165			157		100
	155			226		15
	166			150		8
Mean	193	116	51	184	151	12
S.D. ($\hat{\sigma}$)	61	87	49	34	136	31

Antony Living vs. Antony Cold: Sig. at P = .001

Cleopatra Living vs. Cleopatra Cold: Sig. at P = .001

Antony Living vs. Cleopatra Living: Not significant

V.C.Q., U.W.I., St. Augustine. (L. Wehekind died 14th October, 1964).