application of hydrocarbons along with the nature and the amount of hydrocarbon applied. They also suggest, since in these experiments no visual injury was apparent, a more critical definition of 'phytotoxicity'.

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Social Companions and the Mother–Infant Relationship in Rhesus Monkeys

THE development of behaviour in a young primate is influenced by both the physical and social characteristics of its environment. Paramount among the latter is the mother[1], while later other infants are important as play companions[2]. Previous investigations[3,4] of group-living rhesus monkeys suggested that adult females, other than the infant's own mother, might also play an important part, both by themselves showing maternal, social, play, aggressive and other types of behaviour towards the infant and by influencing the nature of the mother–infant relationship. For example, one adolescent female which, with the male's support, frequently interacted with the two infants in the same group, made their mothers extremely restrictive. In consequence, the infants lived confined lives: while seven other group-living infants were recorded more than 2 ft. from their mothers in a mean of 37 per cent of our observation periods when 17–18 weeks old, these two practically never went this far from their mothers up to this age.

In the experiment recorded here we attempted to assess the extent to which such a factor operates in other group-living infants where the effect is not so obvious. Nine mother–infant pairs each living in groups of a male, three or four females, and their young, were compared with four mother–infant pairs living alone. In both cases the cages were 18 ft. × 10 ft. × 8 ft., communicating with an indoor room 6 ft. × 6 ft. × 8 ft. (ref. 5). Routine watches were made between 0900 h and 1300 h G.M.T. or B.S.T. for at least 6 h a fortnight until the infants were a year old. Data were recorded on check sheets by 0·5 min periods. The levels of significance are based on the Wilcoxon matched-pairs signed-ranks test, 1-tailed, unless otherwise stated.

Differences between the group-living and the isolated mother–infant pairs were of two main types. First, the isolate infants ranged more freely. They spent less time on the nipple, less time on their mothers but off the nipple, more time off their mothers (Fig. 1), went to a distance of 2 ft. from their mothers more often, and spent longer bouts off their mothers (all $P < 0{\cdot}005$). An increase in distance between mother and infant from less than 2 ft. to more than 2 ft. was more often due to the mother moving away in the isolates than in the group-living pairs, and a decrease was less often due to the mother (both $P < 0{\cdot}005$).

A second group of differences between isolate and group-living mother–infant pairs we ascribe to the absence of other social companions for the former. Thus, although the isolate infants went to a distance from their mothers more frequently than the group-living ones, the number of 0·5 min periods spent wholly more than 2 ft. from their mothers during the second half year was less. Similarly, the frequency with which the 2-ft. radius around the mother was crossed was greater for the isolates (both $P < 0{\cdot}005$). The isolate infants thus returned to the proximity of their mothers more often. The proportion

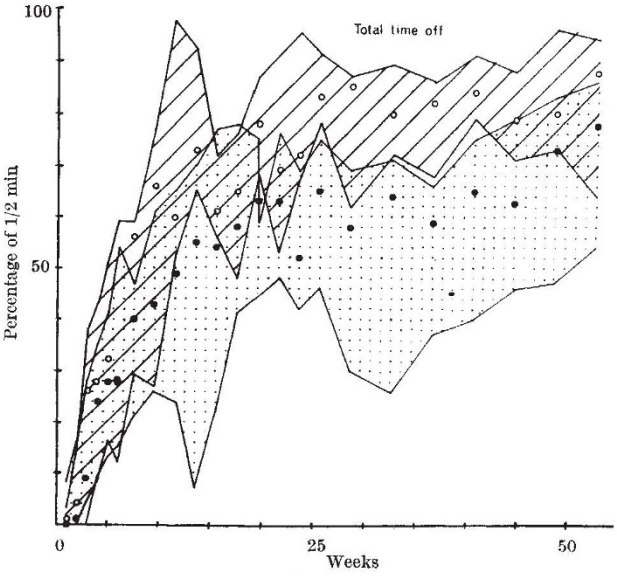

Fig. 1

of attempts made by the infants to attach to the nipple which led to acceptance by the mother was lower for the isolates ($P < 0{\cdot}04$, 2-tailed sign test). Furthermore, grooming of both infant by mother ($P < 0{\cdot}005$) and mother by infant (not significant) was higher for the isolates.

The results thus indicate that the relationship between rhesus mother–infant pairs is influenced in at least two ways by other members of the group. The presence of other adult or adolescent females results in the young infant ranging less freely from its mother, the effect being mediated largely through the mother's behaviour. The presence of social companions results in the infant returning to its mother less often than it would in their absence, and in consequence being rejected by her less often.

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ENTOMOLOGY

Bilateral Asymmetry: a Larval Polymorphism in some Argid Sawflies (Hymenoptera, Symphyta)

BILATERAL asymmetry is virtually unknown among insects, other than as a rare aberration. Pasteels[1] has briefly noted the occurrence of colour asymmetry in larvae of *Arge ustulata* (L.) in Belgium and the Tyrol. Intensive collecting in south-eastern England and north-western Scotland has shown British populations of *A. fuscipes* (Fallén) and *A. ustulata* feeding on birches (*Betula pendula* Roth. and *B. pubescens* Ehrh.) to consist of symmetrical and asymmetrical individuals. Both forms appear to be present in proportions too large to be attributable to recurrent mutation alone. Unfortunately, however, samples from particular localities have so far been too small to allow accurate frequency determinations. Nevertheless, assuming genetic control,