A number of phenological studies have been carried out on spiders of the genus Pardosa (Wiebes, 1960; Vlijm & Kessler-Geschiere, 1967). These wolf spiders (F. Lycosidae) are terrestrial carnivores which do not build webs to catch their prey and which are active during the day on the ground surface and vegetation. Much ecological data for the group have been collected by hand sampling or pitfall trapping. As younger instars are less readily caught in pitfall traps than the sexually mature spiders, the ecology of the latter individuals is better known.

Soon after courtship and mating the females produce a cocoon (egg sac) which they carry attached to their spinnerets until the spiderlings emerge. Vlijm & Richter (1966) demonstrated that adult males of Pardosa lugubris exhibit increased locomotory activity during the time that the females are carrying cocoons. Vlijm & Kessler-Geschiere (1967) suggested that the increased locomotory activity during this period may increase the chances of virgin females being fertilized. These virgin females, after the main period of reproduction, would be found in sub-optimal areas where the spider density is low, and a migration of males into these habitats may result in a predominance of females in the preferred habitats, as was found by Heydemann (1960 a, b) for several spider species.

The increase of the male locomotory behaviour may be inherent to the age of the males. It seems also possible, however, that its occurrence is related to the cocoon carrying phase of the females life, i.e., males...
may respond differently to females with an egg sac than they do to
unfertilized females.

In an attempt to discriminate between these possibilities and, albeit
in an indirect way, to elucidate the increased locomotory activity,
a study was made on the behaviour of males of *P. amentata* at
different stages of their adult life towards fertilized and unfertilized
females.

II. MATERIALS AND METHODS

On 26 April 1966, just before the final moult occurred, specimens of
*Pardosa amentata* were collected by hand, from beside a ditch, in the
neighbourhood of Amsterdam. Of these spiders (167 subadult males
and 157 subadult females) about 60% had already moulted to adult by
28 April. These animals were divided into three groups (A, B and C)
each consisting of 25 males and 25 females. Each group was kept in a
glass container (60 X 30 X 30 cm) on a layer of moist sand. The air
temperature during the day was 24°-26° C. Light was given daily from
7.30 hr until 17.30 hr.

Group A was used as the experimental group. Any dead or mutilated
spider of this group was replaced by a healthy one from group B. Spiders
removed from group B were replaced from group C. Most of
the females constructed a cocoon on the 8th or 9th day after moulting,
and the spiderlings emerged 26–28 days after moulting. Females which
were retarded in their development or which had lost their cocoons
prematurely, were also replaced from group B and C.

The experiments were started within one day after the final moult
and, with one exception, were finished 30 days afterwards, when the
number of non-mutilated males in group A had dropped below 25.
During the experiments the spiders of group A were divided into
25 pairs; no special care was given to the choice of the pairs. Each pair
was put into a glass box (16 X 8 X 6 cm), the bottom of which was
covered with moist sand. These boxes were changed daily. They were
placed under a heating lamp which produced a surface temperature of
28°–30° C. As the preferred temperature of adults of *P. amentata* is about
30° C (Vlijm, Kessler & Richter, 1963) courtship starts readily
under these conditions.

At 9.00 hr the pairs of spiders were acclimatized for one hour to the
experimental conditions. The experimental period, starting at 10.00 hr,
lasted four to six hours per day. During the first 20 minutes of each hour
(the observation period) the behaviour of each of the males was re-
corded every 30 secs, the observation time being 1 sec. per animal.
Thus 1000 observations were made every hour, each of which was