Life history of Megaselia was studied. The eggs are white in colour oval in shape measuring 0.05 cm in length and 0.01 cm in width with a smooth dorsal surface and brush like ventral surface (figure 1). The eggs hatch within 22 to 36 hr after they are laid. The maggots (figure 2) measures 0.05 cm to 0.15 cm and on the first day and feed on the contents of the Uzi fly pupae moving in and out of the debris for five to six days and undergo pupation. The larvae have a pair of respiratory horns present on the centre of the 11th segment pointing backwards. The pupae are oval in shape brown in colour pointed anteriorly, rounded posteriorly and flatened ventrally, convex dorsally measuring 0.4-0.45 cm in length with eleven segments. A pair of spines are present on the 9th segment at the sides pointing upwards (figure 3). The pupal stage extends for a period of 10–12 days. The apical tip breaks open and eclosion occurs. The adults have a prominent humped thorax, long spiny legs with eight segmented abdomen (figure 4). The adults live for 10–15 days and feed on the Uzi fly debris. Further experiments are in progress to check the population of Uzi fly with Megaselia.

5 January 1982

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INDUCTION OF OOGONIAL/OOCYTE FUSION BY X-IRRADIATION IN THE OVARIES OF THE RED COTTON BUG, *DYSDERCUS KOENIGII* FABR. (HETEROPTERA:PYRRHOCORIDAE)

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IONIZING radiations are known to induce several abnormalities in the ovaries—one of them being fusion between the oocytes. Reports of this abnormality have come from polytrophic ovaries only[1,2]. In this note we report this phenomenon along with some variants in the telotrophic ovaries of the hemipteran, *Dysdercus koenigii* also.

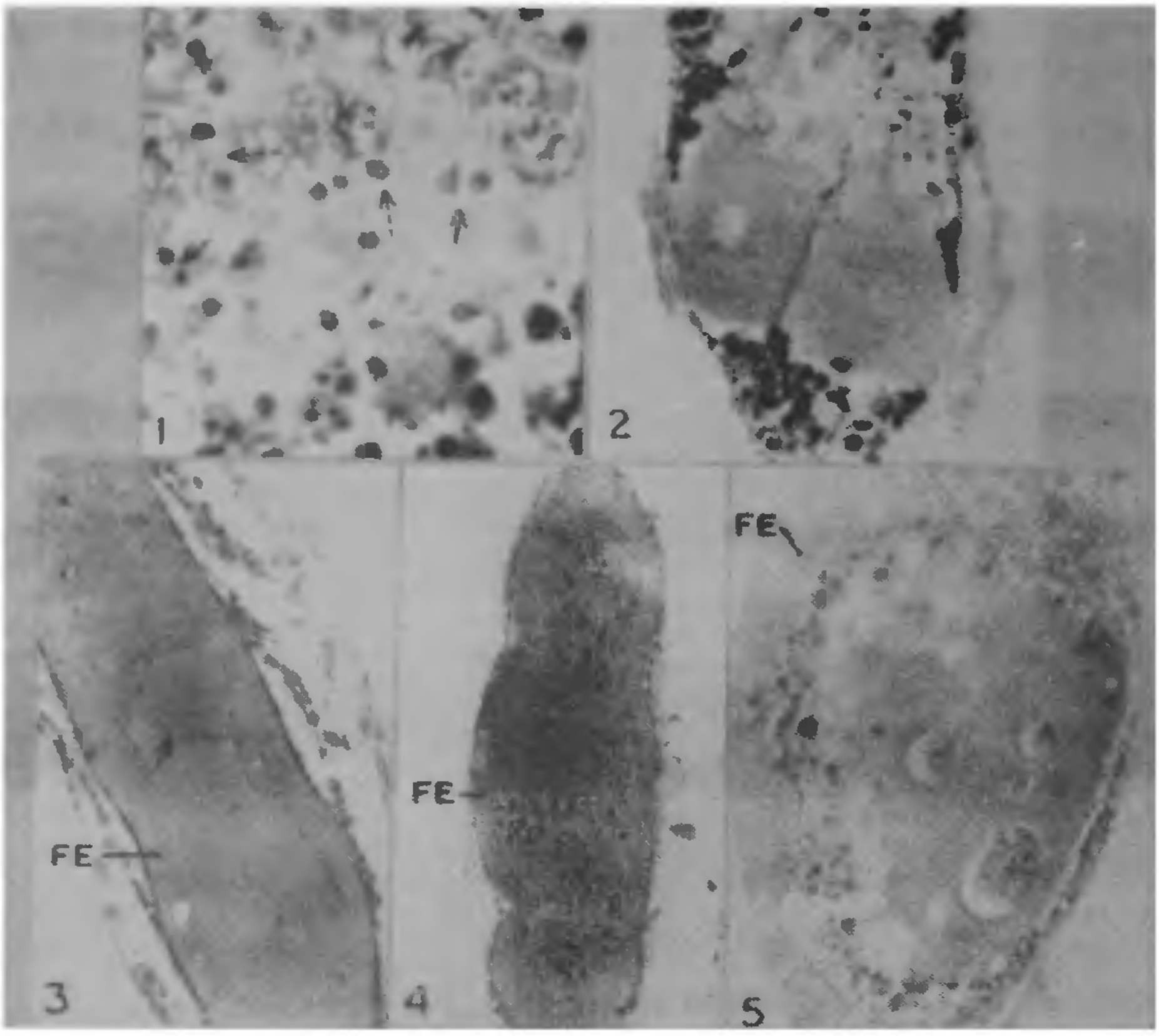
When one-day old fifth (ultimate) instar larvae of this insect are exposed to soft X-radiation at a dose rate of 444.44 rad/min, the emerging adults exhibit the following types of fusion in the germ cells of their ovaries: (i) fusion between (normal) oogonia (figure 1) (ii) fusion between hypertrophied oogonia (figure 2) (iii) fusion between a hypertrophied oogonium and oocytes (figure 3) (iv) fusion between oocytes with their separate identities retained (figure 4) or completely lost (figure 5).

Fusion between the oocytes has also been reported by agents other than ionizing radiations *viz.*, by juvenile hormone[3-6] and chemosterilants[7]. However, the end product of all these cases is reported to be a structure called a compound egg chamber[1] or a compound follicle[3,5]. Various reasons have been given to explain this phenomenon. Masner[7], for instance, believes that the compound follicle may be formed by actual fusion between oocytes or by more than one oocyte entering the same egg chamber. Socha and Gelbic[4], on the other hand, believe that a pressure exerted on the follicles sets in strong cytoplasmic currents which ruptures the follicular and interfollicular tissue causing fusion. However, they do not mention the nature or source of the envisaged pressure.

In our studies, we find the fused germ cells naked (*i.e.*, devoid of any follicular epithelium, figure 2) or lacking in interfollicular tissue (figure 3). This indicates that radiation in some way impairs the mobility of the prefollicular cells in the germarium. They either fail to move resulting in the first condition or the fusion occur earlier than their movements so that they can only encircle the compound follicle but not reach their interfollicular spaces. King[1] thinks that the presence of more than one nuclei in an oocyte may not necessarily be due to oocyte fusion but could as well be due to nuclear division. Our histological pictures show both completely (figure 1, arrows) and incompletely (figure 1, broken arrows) fused condition of the germ cells. This negates King's postulate[2] as also Masner's[7] suggestion that more than one oocyte may enter the same egg chamber to form a compound follicle. So far, fusion between the oocytes alone has been reported. Here we report some variants of this phenomenon; *viz.*, fusion between normal oogonia, between hypertrophied oogonia (hypertrophy of germ cells is another effect of radiation), between a hypertrophied oogonium and an oocyte and between oocytes. However, since we only see the end product, we do not know if the differentiation of these variants follows the process of fusion or precedes it. At least in cases (types 3–5 in these studies) where the compound follicle is surrounded by a follicular epithelial sheath, differentiation should precede fusion because the follicle formation (by ensheathment of the prefollicular cells) occurs in the basal part of the germarium where the germ cells are only in the oogonial stage.

One of us (DJD) is thankful to the CSIR, Government of India, for financial support.

25 June 1982



Figures 1–5. 1. A part of the germarium showing completely (arrows) and incompletely fused oogonia (broken arrows) × 675. **2.** Fusion between hypertrophied oogonia lacking follicular epithelium × 315. **3.** A compound follicle comprising a hypertrophied oogonium (arrow) and oocytes enclosed by a common follicular epithelium (FE) × 315. **4, 5.** Compound follicles with separate identities (figure 4) and without separate identities of the fused oocytes (figure 5) × 315. (All sections have been cut at 7.5 μ m and stained in Heidenhain's haematoxylin and eosin).

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EFFECTS OF SCORPION (*HETEROMETRUS FULVIPES*) VENOM ON ITS CARDIAC ACTIVITY

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ALTHOUGH some information is available on the effects of scorpion venom on the physiology of several animals, studies on autoenvenomation are scarce. In the present study the *in vitro* and *in vivo* effects of scorpion venom on its own cardiac activity are presented.