TABLE I

Effect of TPTA on the egg laying and hatching of D. cingulatus

	Concentrations of TPTA (mg/sq inch)	Exposure period (hour)	Number of eggs laid	Number of eggs hatched	% hatching
A	0·35 ..	0·5	1103	1037	78·23
		1·0	1049	829	70·63
		4·0	947	645	68·11
		12·0	926	559	60·37
B	0·70 ..	0·5	1010	833	70·98
		1·0	1153	799	69·29
		4·0	1026	787	67·11
		12·0	830	490	59·40
C	1·40	0·5	1051	861	70·81
		1·0	1369	928	67·78
		4·0	1266	782	61·77
		12·0	836	454	54·31
Control		..	1849	1761	95·24

Two replications of 10 treated females used for each test.

From the above observations it is concluded that the contact effect of TPTA on the females of *D. cingulatus* leads to the reduction both in fecundity and fertility. But, neither the fecundity nor the fertility is totally reduced as compared to the effect of apholate on the same species[9]. Therefore, TPTA as one of the organotin compounds cannot be recommended as very effective reproduction inhibitor in comparison to the aziridine compounds. However, the toxic effect of TPTA combined with its sterilizing property may be useful in the control of *D. cingulatus*.

We express our gratitude to Prof. S. M. Alam for the facilities and encouragement.

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SIZE RELATIONSHIP OF OOCYTES AND THEIR NUCLEI IN THREE SPECIES OF SCORPIONS

NUCLEAR intervention in cytoplasmic growth and differentiation has been greatly emphasized, especially the major role the nucleolus plays in the developing egg[1–3]. The determination of the size of nucleus and nucleolus in different stages of growth of oocyte is important in such a study. Very little work on the volume relationships of the different oocyte structures during growth has been done and so far no information is available regarding the scorpion oocytes. The present communication deals with the size relationship of the oocyte, nucleus and nucleolus in three arachnid species belonging to three different families: (*i*) *Buthus hendersoni* Pocock (Scorpionida: Buthidae), (*ii*) *Diplotemnus insolitus* Chamberlin (Chelonethida: Atemnidae) and, (*iii*) *Palamnaeus fulvipes* Kock, (Scorpionida: Scorpionidae).

Figure 1 presents the relationships of the diameter of the nucleolus, nucleus and the oocyte.

The oocyte grows to 130 μ, 775 μ and 2 mm in *Palamnaeus*, *Diplotemnus* and *Buthus* respectively. In all the three species the diameter of germinal vesicle during previtellogenesis increases with the increase in the diameter of oocyte. However, the increase in *Buthus* and *Diplotemnus* is more striking than that in *Palamnaeus*. Size of nucleolus varies from 7 to 9 μ in *Buthus*, 5 to 7 μ in *Diplotemnus* and 4 to 5 μ in *Palamnaeus*. The increase in the size of nucleus and nucleolus in three species resembles that described for starfish oocyte[3], insects[4], ascidians[5], and amphibians[6].

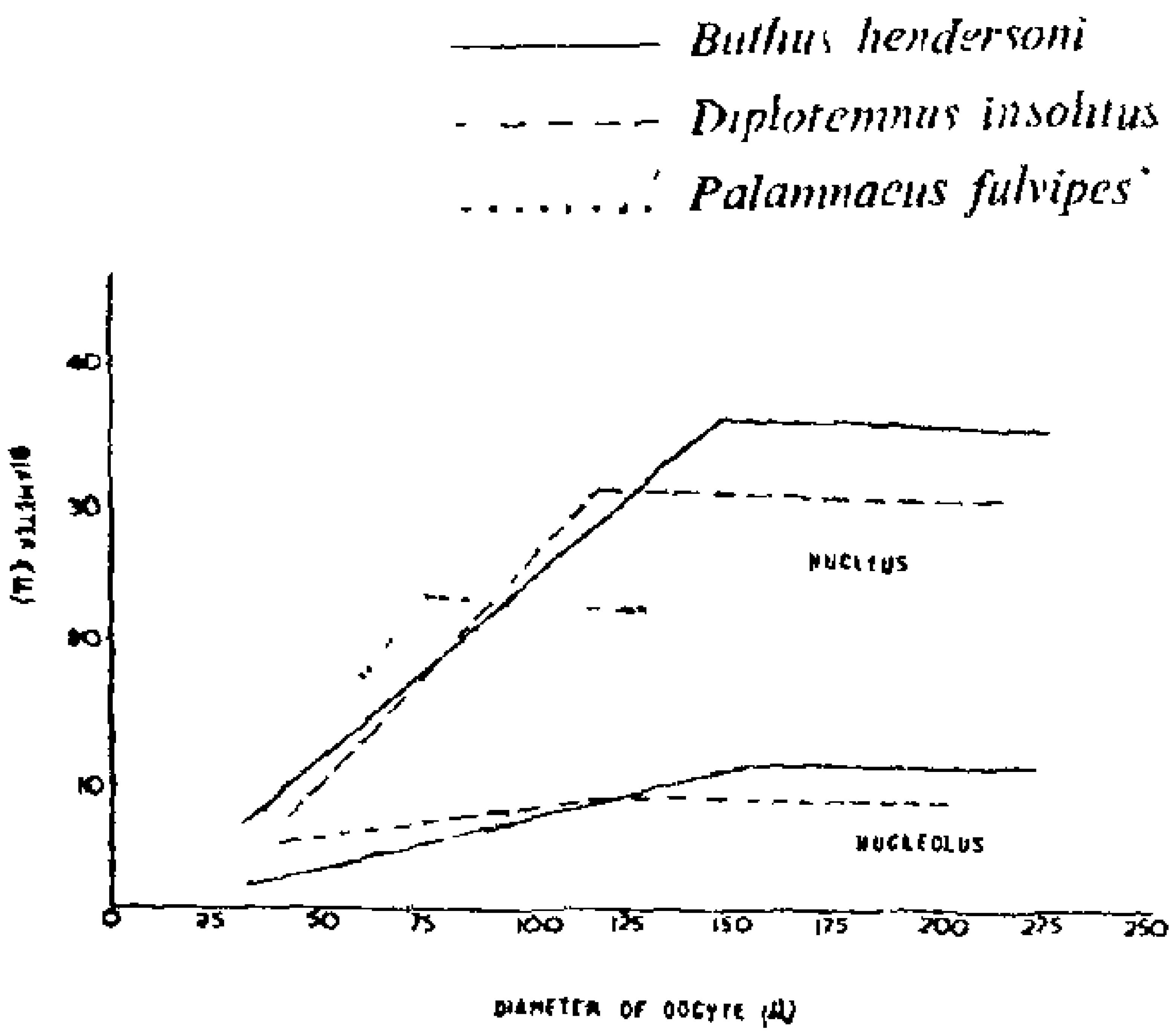

FIG. 1

In *Buthus* and *Diplotemnus* during vitellogenesis and embryo breeding the activity of the nucleolus ceases and the follicle cells take over, which, by their own contributions and through the body fluid, assist in the cytoplasmic synthesis. Histochemical tests reveal that the large yolk platelets filling in the ooplasm in the late oocytes in *Buthus* are rich in lipoproteins and carbohydrates whereas the large yolk platelets in *Diplotemnus* are fatty (triglycerides) in nature. On the contrary in *Palamnaeus* the vitellogenesis is not well marked and the sizes of the oocyte and its yolk platelets (carbohydrates and proteins) remain small; during embryo breeding the ovarian tissue takes over the future nourishment[7].

Thanks are due to Prof. G. P. Sharma for providing laboratory facilities.

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GIANT CELLS IN THE PLACENTA OF TWO SPECIES OF INDIAN BATS

THE placental giant cells are of common occurrence in rodents, carnivores and ungulates. Presence of giant cells have been reported so far only in one bat, namely, the tropical American vampire, *Desmodus rotundus murinus* (Wimsatt, 1954). The giant cells in this bat are decidual in origin and occur in the necrolytic zone of the decidua basalis adjoining the deep face of the placental disc. An outsanding morphological change in the giant cells of this bat, according to Wimsatt (1954), is the pronounced hypertrophy of both nucleus and cytoplasm. He further mentioned that these decidual giant cells frequently possess two or more nuclei. Ultimately they share the fate of the other decidual cells and undergo necrolysis under the influence of the nearby placental trophoblast.

While studying the development of the foetal membranes of the Indian fruit bat, *Rousettus leschenaulti* (Megachiroptera—Pteropidae) and the Indian leaf-nosed bat, *Hipposideros fulvus fulvus* (Microchiroptera—Hipposideridae) the author noticed the presence of numerous giant cells.

In *Rousettus leschenaulti* the giant cells are a constant feature in the decidua basalis throughout the post-implantation period of gestation. Their number increases progressively until about mid-pregnancy, when they are present in large numbers in the narrow area of the endometrium adjacent to the maternal border of the placenta near the myometrium. After mid-pregnancy they become progressively reduced in number until full term, when only a few of them are noticed near the myometrial border of the decidua. The giant cells are large, varying in shape, being sometimes polygonal, sometimes spherical and sometimes irregular, and have vacuolated cytoplasm with large vesicular nuclei. They are usually mononucleate (Fig. 1), and normally occur as individual cells amidst the relatively smaller cells of the endometrium. Sometimes they occur in small clusters of three or four cells. Occasionally they contain three or four nuclei (Fig. 2). These are not only several times larger than the mononucleate giant cells, but their nuclei are as large as those of the mononucleate giant cells. These multinucleate giant cells are apparently formed by the fusion of three or four giant cells rather than by the division of the nucleus of a giant cell. The giant cells in *Rousettus leschenaulti* are endometrial in origin, and the progressive transformation of the endometrial cells into giant cells can be noticed (Fig. 3). These modified endometrial cells are evidently able to migrate from their original location and assume