of 2,4-dinitrophenyl-hydrazone shows carbonyl group at the sidechain. And the ultraviolet absorption spectrum of neosepiapterin resembles that of isosepiapterin. These data indicate that the structure of neosepiapterin is 2-amino-4-hydroxy-6-acetyl-7,8-dihydropteridine.

The distribution of neosepiapterin in sepia fly remains unknown, but it is supposed to be contained in the eye since sepiapterin and isosepiapterin are the eye pigments. Neosepiapterin was not detected when pterins were extracted from a large amount (1.2 kg) of wild type flies. Many derivatives of pteridine, which have three carbons at the sidechain on C-6 of the pteridine ring, have been isolated from natural sources. But those with two carbons have never been isolated before. Therefore, the occurrence of reduced 6-acetyl pterin suggests an unknown pathway of pteridine metabolism. Studies on the origin of a two carbon sidechain of the pigment is under investigation.

References: Forrest, H.S., C. Van Baalen and J. Myers 1959, Arch. Biochem. Biophys. 83: 508; Fukushima, T. and M. Akino 1968, Arch. Biochem. Biophys. 128:1; Nawa, S. 1960, Bull. Chem. Soc. Japan 33:1555; Tsusue, M. and M. Akino 1965, Zool. Mag. Tokyo 74:91; Viscontini, M. and E. Möhlmann 1959, Helv. Chim. Acta 42:836; Ziegler-Günder, I. and E. Hadorn 1958, Z. Vererbungslehre 89:235.

Bächli, G. University of Zürich, Switzerland. Drosophilidae of Kanha National Park, M.P., India.

Drosophilidae were collected by net sweeping over banana baits during the period of August 26 to September 18, 1972. The 8 collection sites are located in the center of the Kanha National Park, about 200 km northeast of Nagpur. The altitude is around 600 m above sea level. The species collected and the number of specimens are listed in Table 1. Drosophila (Scaptodrosophila) sp. and Hypselothyrea sp. are new species, while Leucophenga flavicosta, Lissocephala sabroskyi and Drosophila minima are reported for the first time from India. Domestic and cosmopolitan species were mostly absent. In the collection period (end of monsoon season), the ecological conditions of the center of the Park are therefore considered non-domestic.

Table 1. List of species collected, in order of frequency.

Species	Number of Specimens	Species	Number of Specimens
D. malerkotliana	10,643	** D. (Scaptodros.) sp.	6
D. jambulina	4,115	Leuc. albicincta	4
D. paratriangulata	1,349	* Leuc. flavicosta	4
D. albomicans	387	** Hypselothyrea sp.	2
D. takahashii	373	* Lissocephala sabroskyi	2
D. latifshahi	62	Leuc. guttiventris	1
D. kikkawai	26	D. silvalineata	1
D. chandraprabhiana	9	D. bipectinata	1
		* D. minima	1

* first record from India
** new species

Hardy, R.W., Le Ngoc Anh and Ng. H. Xuong University of California, San Diego, La Jolla, California. Three dimensional measurements of spermatid nuclei in Drosophila melanogaster from electron micrographs of serial cross sections.

We have developed a method for measuring the volume and morphology of spermatid nuclei. Testes are prepared for electron microscopy by the method of Tokuyasu, Peacock and Hardy (Z. Zellforsch. 124:479-506, 1972). Serial sections of an entire bundle of nuclei of spermatids in the early coiling stage are cut and the thickness of each is estimated from its interference color. Electron micrographs of selected sections are scanned with a digital densitometer connected to an IBM 1800 computer (Xuong, J. Physics E. 2:485, 1969). A program written in

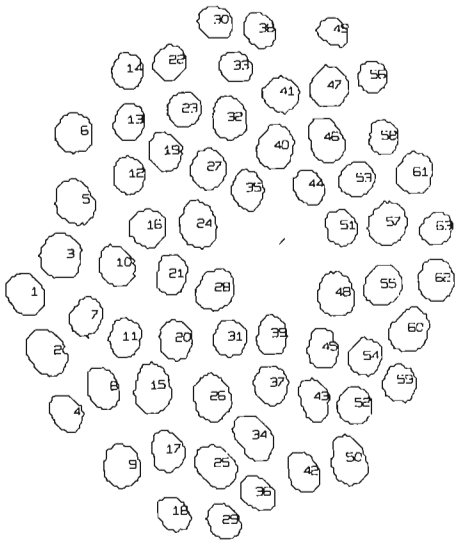
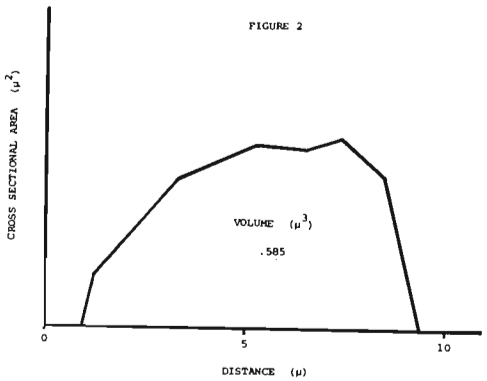
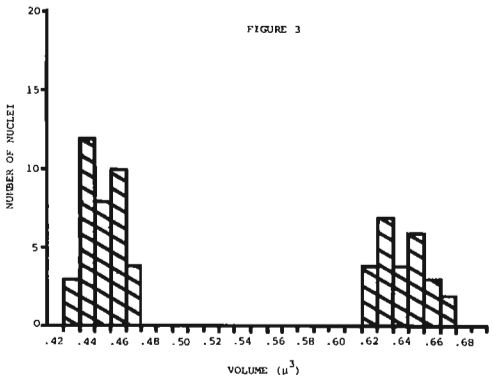
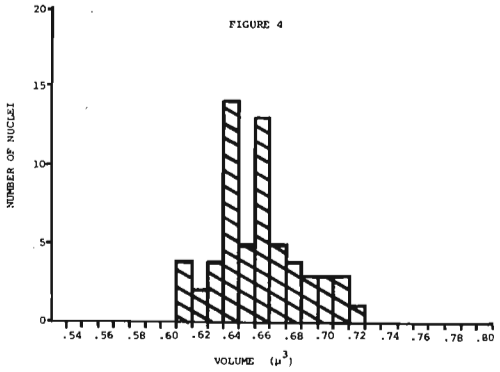


FIGURE 1

Fortran IV examines the digital picture of each electron micrograph and searches for all the nuclear images present. The output is a set of contour points and a cross sectional area for each nucleus. There may be as many as 64 of these contours. Figure 1 is a graphic display on a CalComp plotter from a typical electron







micrograph. When all cross sections are scanned all the various cross sectional areas of a specific nucleus are plotted as a function of the position of the serial section along the length of the nucleus (e.g. Figure 2). The area under the curve gives the volume of the nucleus and the shape of the curve reflects its morphology. This method is being used to investigate the consequences of changing the amount and arrangement of the nuclear chromatin with respect to nuclear morphology.

Wild type males produce nuclei of approximately uniform volume (Figure 4) and shape as might be expected from the similarity in chromosome content of X and Y bearing sperm. Males with an attached XY chromosome produce two types of nuclei; those carrying the XY and a set of autosomes and those with only a set of autosomes. Such males produce a bimodal distribution of nuclear volumes (Figure 3). Nuclear morphologies on the other hand are similar. In principle this method may be applied to a variety of serial section data.