Table 2. Heritability estimates for peroxidase isozyme activities in males. H and its standard error were calculated using equations 1 and 2.

Isozyme	H
Acid-PO	0.79 ± 0.07
Neutral-PO	0.64 ± 0.12
Alkaline-PO	0.59 ± 0.13

loci (affecting quantity or developmental timing of PO synthesis), and allelic differences in substances that directly modulate PO enzyme function. We are currently engaged in a number of studies to examine these alternatives. First, if heritable differences in enzyme structure are present, such polymorphisms should be demonstrable by electrophoretic procedures we are applying to the Drosophila peroxidase system (viz., Lichtenstein et al. 1984). Second, segregation analyses on the offspring of inter-strain matings may allow us to differentiate the additive, dominance and epistasis components of PO heritability, and to estimate the total number of genetic loci involved in regulation of each PO isozyme's activity. Finally, we are engaged in a number of studies to determine the role of each PO isozyme in Drosophila metabolism--and the possible functional significance of heritable differences in each isozyme's activity.

References: Cavalli-Sforza, L.L. & W.F. Bodmer 1971, in:Genetics of Human Populations, Freeman & Co., San Francisco, p574; Lichtenstein, P.S., M. Emmett, L.K. Dixon & A.J. Crowle 1984, DIS 60:138-140; Poole, J.H. & L.K. Dixon 1984, DIS 60:165-168.

Ramachandra, N.B. and H.A. Ranganath.
University of Mysore, India. Further studies on B-chromosomes in **D.nasuta albomicana.**

Supernumerary or B-chromosomes have been reported in over 1000 plant species and 260 animal species (Jones & Rees 1982). In Drosophila, the occurrence of B-chromosomes is rare. The presence of such chromosomes were first detected by Kitagawa (pers. comm.) in **D.n.albomicana.** Recently we have reported the preliminary cytology of B-chromosomes in a Thailand strain of **D.n.albomicana** (Ramachandra & Ranganath 1984, 1985). After this preliminary screening that is in 1983, the Thailand strain was maintained under optimal conditions in the laboratory at 22°C for over two years and again the karyotypic composition of the individuals of this strain was analyzed. The important observations are as follows:

(a) Six different types of individuals with different number of chromosomes were recorded. They are without B's, with one, two, three, four or five B-chromosomes.

(b) Individuals with four and five supernumeraries were not recorded earlier. The meterphases with these B-chromosomes are presented in Figures 1a and 1b.

(c) The comparative account of the frequencies of different individuals with different B-chromosomes in the same strain of **D.n.albomicana** during 1983 and 1985 is given in Table 1. There is a significant decline in the incidence of individuals without B-chromosomes. The frequency of

Table 1. Relative frequencies (%) of individuals with different number of B-chromosomes in **D.nasuta albomicana** during 1983 and 1985 under laboratory conditions.

Years	0B	+1B	+2B	+3B	+4B	+5B
1983	33	36	26	05	--	--
1985	05	32	38	21	03	01

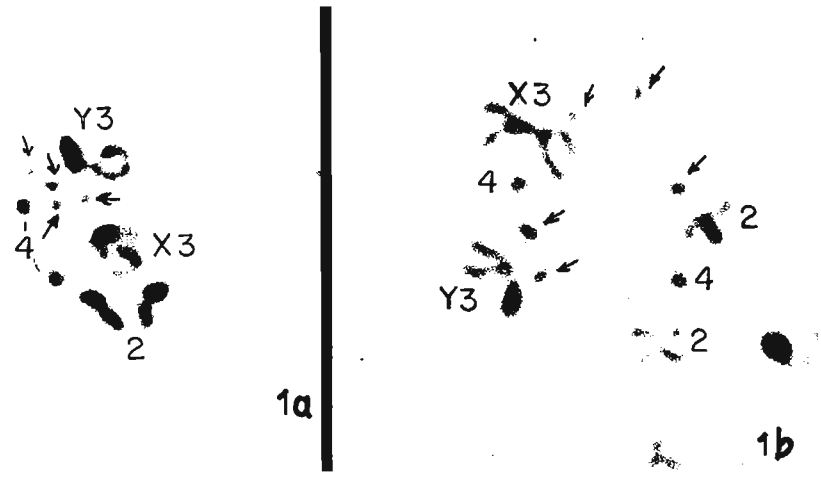

Figure 1a-1b: Karyotype of **D.n.albomicana** with 4 (1a) and 5 (1b) B-chromosomes. Arrows indicate B-chromosomes.

individuals with B's has a steep rise from 67% to 95%.

In view of these, we feel that some type of "B-chromosome accumulating" mechanism is operating in this system.

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References: Jones & Rees 1982, B-chromosomes, Academic Press; Ramachandra, N.B. & H.A. Ranganath 1984, VII All India Cell Biol. Congr., Hyderabad (Abstract); _____ 1985, Experientia (in press).

Real, M.D. and J. Ferré. University of Valencia, Spain. Chemical synthesis and the "in vivo" formation of xanthurenic acid 8-0-β-D-glucoside in **Drosophila melanogaster.**

Recently, it has been shown that some eye colour mutants of **Drosophila melanogaster** accumulate a blue fluorescent compound not detected in chromatograms of the wild type. This compound has been identified as xanthurenic acid 8-0-β-D-glucoside (Ferre & Mensua 1983; Ferre et al. 1985). In this work we confirm the above structure by chemical synthesis, and propose a pathway for the biosynthesis of this compound.

The chemical synthesis was carried out following Butenandt et al.'s (1963) procedure for the synthesis of rodhommatin (a xanthommatin glucoside). A solution of xanthurenic acid and α-acetobromoglucose at pH 10.5 was stirred for several hours. The acetilated derivative was hydrolysed in strong alkaline medium to give the free glucoside. The purification of the final product was carried out by ion exchange chromatography.

The synthetic and natural compounds showed identical chromatographic behavior in thin-layer chromatography using different solvents. The UV spectra at different pH values, the excitation and emission fluorescent spectra and the IR spectrum, also showed that both compounds were the same chemical substance.

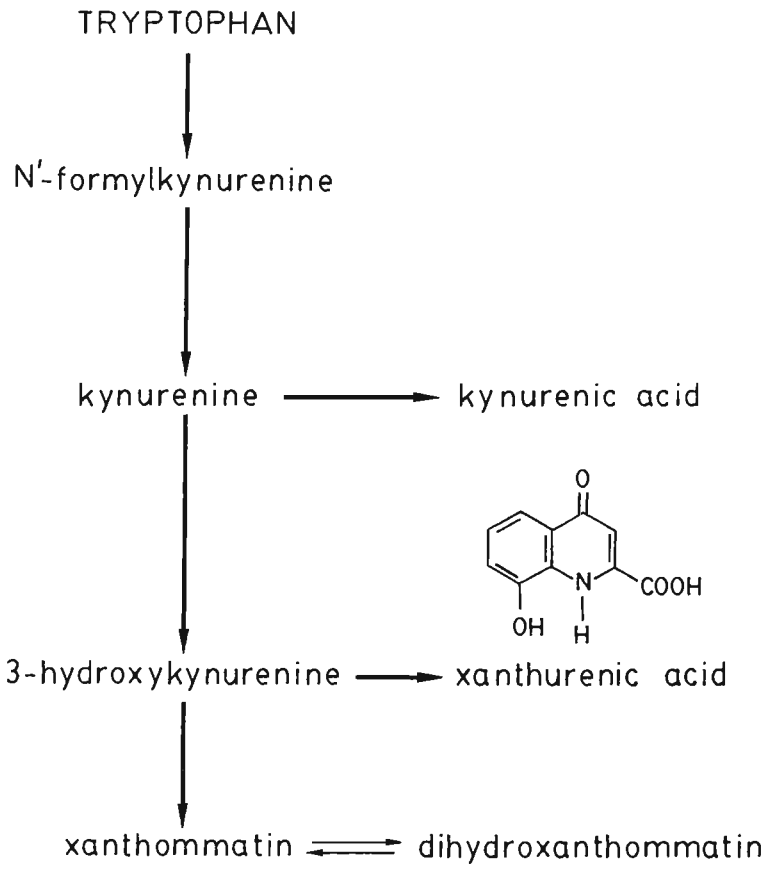

Table 1. Thin-layer chromatographic (TLC) analysis of head extracts from the vermilion purple mutant raised in differently supplemented media.

Supplemented metabolite	Compound after TLC separation* xanthurenic acid	xanth. acid 8-glucoside
none	-	-
3-hydroxykynurenine	+	+
xanthurenic acid	+	-

* TLC was carried out on cellulose plates using two-dimensional separation. First solvent: isopropanol/2% ammonium acetate (1:1); second solvent: 3% ammonium chloride.

Figure 1. Biosynthesis of "xanthommatins" in **Drosophila melanogaster.**