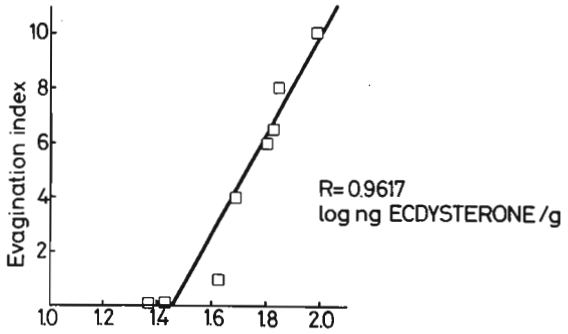

Fig. 2. Effect of in situ titer value on evagination index reached after 16 hours incubation of leg discs in Robb's medium without MH at 25°C.

Fig. 1 shows the profile of titer as RIA equivalent. The high titer peaks coincide well with larval moltings. Fig. 1 also demonstrates that there is no intermolt peak, not even befor pupariation, an observation which fits well with Hodgetts et al. (1977). The peak at the end of the second larval instar is higher than the previous one. Since the synchronization of cultures becomes poor at the end of the 3rd larval instar, we used only the larvae from colonies in which pupariation had already started. Since the oldest larvae are closest to pupariation, asynchronization of individual cultures are offset, and the kinetics of the titer change are slowed down. By this method we made sure that we had not missed any sharp peak immediately prior to cuticle hardening.

Ten larvae samples were taken from cultures older than 80 hours, and imaginal leg discs were dissected. The discs were rinsed and incubated in Robb's medium (Robb 1969) at 25°C without MH. The evagination score was determined after 16 hours. The rest of the larvae were used to measure MH titer. Fig. 2 shows the scores reached plotted against RIA activity measured in the rest of the colonies from which discs had been taken. 54.4 ng/g MH titer in situ at the time of dissection is enough to reach a score of 5. Considering the short exposure time, this number fits well with the 34.7 ng/ml necessary for in vitro evagination determined by Fristrom and Yound (1975). For full evagination under in situ conditions 92.7 ng/g titer is necessary.

References: Borst, D. and J.D. O'Connor 1972, Science 178:418; de Reggi, M.L., M.H. Hirn and M.A. Delaage 1975, Biochem. Biophys. Res. Commun. 66:1307-1315; Hodgetts, R.B., B. Sage and J.D. O'Connor 1977, Develop. Biol. 60:310-317; Maróy, P., J. Vargha and K. Horváth 1977, FEBS Lett. 81:319-322; Maróy, P. and K. Tarnóy 1978, J. Insect Physiol. 24:325-327; S.A. Robb 1969, J. Cell Biol. 41:876-884; Fristrom, J.W. and M.A. Yund 1976, in: Invertebrate Tissue Culture Research Applications (ed. K. Maramorosch), Acad. Press, NY.

Mather, W.B. and G. Balwin, University of Queensland, Brisbane, Australia. Inversions in two species of Drosophila from the River Kwai, Thailand.

From a collection of Drosophila from the River Kwai region of Thailand (June 1978) 76 isolines of D. sulfurigaster albostrigata and 14 isolines of D. albomicans were established.

Table 1. D.s. albostrigata

Inversion	Type	Chromosome	Breakpoints	Het. Freq. % June '78	Het. Freq. % Nov '77
C	Sim.	III		1.3	2.8
E	Sim.	II L		14.5	28.6
W_2	Sim.	III		3.9	
X_2	Com.	III		2.6	
A_5	Sim.	II L		55.3	31.4
B_5	Sim.	III C		7.9	2.8
C_5	Sim.	II R		55.3	25.7
D_5	Com.	II L		34.2	5.7
Q_5	Sim.	II L	5.0 - 9.3	2.6	

Note: Sim. = simple; Com. = complex

(a) D.s. albostrigata

Seven simple and two complex inversions were detected. Six of these had previously been detected at the River Kwai (Mather, Knibb and Balwin 1979) and two had been detected elsewhere in South East Asia (Mather, Thongmeearkom, Clyde and Lambert 1974; Thongmeearkom 1977). The remaining inversion Q_5 is new, and a photograph is presented and breakpoints assigned (in relation to the standard photographic map - Thongmeearkom 1977) (see Table 1).

Note: C.E. = centromere end; F.E. = free end

Table 2. D. albomicans

Inversion	Type	Chromosome	Breakpoints	Het. Freq.
R_5	Sim.	I	12.0 - 18.0	14.3
S_5	Sim.	II L	6.0 - 10.4	14.3
T_5	Sim.	II L	8.2 - 21.3	7.1
U_5	Com.	II L	1.1 - 13.2	50.0
C	Sim.	III	6.1 - 11.0	28.7
V_5	Sim.	III	2.5 - 10.8	7.1
W_5	Sim.	III	27.0 - 30.2	14.3
X_5	Com.	III	21.6 - 40.4	74.5

Note: Sim. = simple; Com. = complex

The heterozygosity frequency of all inversions detected is given and compared with November 1977. It will be noted that there are very marked differences in frequency.

(b) D. albomicans

Six simple and two complex inversions were detected. Only one (C) had previously been detected in South East Asia (Thongmeearkom 1977; Mather and Thongmeearkom 1979). The others are new and photographs are presented and breakpoints assigned (in relation to the standard photographic map - Mather and Thongmeearkom 1979) (see Table 2). The heterozygosity frequency of all inversions detected is given (Table 2).

The material was collected and the isolines established by W.B.M. The laboratory work was carried out by G.B.

References: Mather, W.B., W.R. Knibb and G. Balwin 1979, DIS 54; Mather, Thongmeearkom, Clyde and Lambert 1974, DIS 51:86; Mather and Thongmeearkom 1979, DIS 54; Thongmeearkom 1977, DIS 52:154; Thongmeearkom 1977, DIS 52:117.

Mather, W.B. and P. Thongmeearkom, University of Queensland, Brisbane, Australia.
Chromosome map of D. albomicans.

A photographic chromosome map of D. albomicans is presented. This map was constructed from an inversion free isoline established from Taiwan in 1972.

Inversion	Locality	Chromosome	Breakpoints	Inversion Photograph Reference
B'	Taiwan	III	36.0 - 43.6	1972b
C	Kuala Lumpur	III	6.1 - 11.3	1972a
E'	Taiwan	II L	6.5 - 20.3	
L_3	Phuket	III	21.6 - 36.5	
T_4	Phuket	III	11.1 - 16.4	

Note E' differs from E (Mather and Thongmeearkom 1972a) because it is also homozygous for I_2 (Mather and Thongmeearkom 1973).

Photographs of two new inversions from Phuket, Thailand 1975 are presented.

The breakpoints of inversions previously detected in natural populations from Taiwan and Kuala Lumpur as well as those of the new inversions are assigned.

The material was collected and the isolines established by W.B.M. The laboratory work was carried out by P.T.

References: Mather and Thongmeearkom 1972a, DIS 48: 40; Mather and Thongmeearkom 1972b, DIS 49:110; Mather and Thongmeearkom 1973, DIS 50:60.