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Scientific Note

A NOTE ON CHROMOSOME PREPARATION

K. Y. JAN AND M. C. PAO

Institute of Zoology, Academia Sinica,
Taipei, Taiwan, R. O. C.

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The recent development in techniques for Q-bands, C-bands, G-bands and R-bands in chromosomes[2] provides a further detailed karyotype analysis of several species. However, these banding techniques were primarily adopted for cultured cells, and only few cases where squashed chromosomes[3] and chromosomes prepared by pipetting technique[1,4] were used for banding pattern analysis. We describe here a technique for chromosome preparation which is somewhat similar to smear technique but using no coverslip, thus chromosomes can be subjected to further treatments directly. The name "spreading technique" is tentatively used in our laboratory.

The third instar larval brains of *Musca domestica* L. were dissected out in distilled water, fixed for 30 min to overnight in freshly prepared methanol-acetic acid mixture (3:1), then macerated in 45% acetic acid. Using a pair of fine twizzers a brain was outward circularly spreaded on the surface of a clean slide. The spreading movement was carried out gently and care was exercised to avoid overlapping of cells. The slides were then dried in the air.

Chromosomes prepared by the spreading technique are given in Fig. 1. In general, they were better spread out and less distorted than those prepared by squash technique. Hypotonic treatment with 0.1% sodium citrate or 0.075 M KCl before fixation did not give any better results, therefore the step was omitted. Since no appreciable difference was found in chromosomes prepared from tissues fixed for 30 min. up to overnight, we assumed that the tissues could be temporarily stored in the fixative. Furthermore, the air-dried slides could be stored in an evacuated desiccator. It seemed unlikely that these storage procedures would have any undesirable effects on slides for permanent preparation or for autoradiographic work, provided if

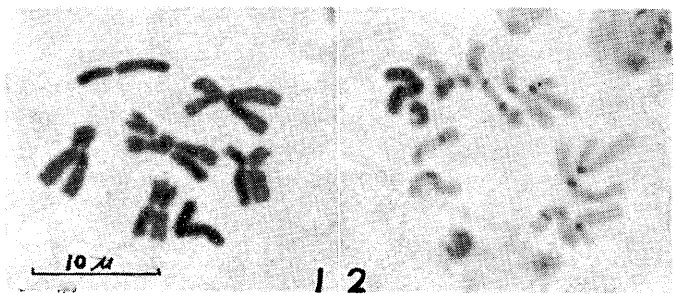

Fig. 1. House fly larval brain chromosomes prepared by spreading technique.
Fig. 2. C-bands on chromosomes prepared by spreading technique.

the storage was not too long.

The C-bands could be produced on chromosomes prepared by spreading technique (Fig. 2) but the slides had to be dipped in 45% acetic acid for 3-5 days before the alkaline treatment[3]. The mechanisms of such treatment was not yet clear, however, some kind of extraction or the modification of chromosomal structural might have undergone during the acid treatment.

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用塗片法製備染色體

詹崑源　鮑美琪

新鮮之組織經固定及酸軟化後，以小鑷子夾牢輕輕地塗抹於玻片上可使染色體均勻展開。這種塗片法因無蓋玻片，染色體可直接作進一步之處理。塗片法製備之染色體可用以產生吉氏染色帶，但在C-bands步驟之前，這些染色體必須先經酸處理 3～4 天。