showed more depression in AChE activity than rogor. Cuman L, a carbamate caused least effect on ACh—AChE system. Carbamates form carbomylated enzyme derivatives which are known to be reversible in reaction whereas dimecron and rogor, the organophosphates, form irreversible phosphorylated enzyme derivatives at the esteretic site of AChE molecule[12, 13].

Concomitant with AChE inhibition, there is an accumulation of ACh in the tissues of dimecron and rogor treated mussels (table 1). Inhibition of AChE in these tissues may cause structural and functional disturbances and produce adverse effects on the metabolism[14].

A significant increase in both acid and alkaline phosphatase activity by dimecron, rogor and cuman L was observed (table 1). Rogor caused greater elevation than cuman L. The increase in acid phosphatase activity may indicate release of these enzymes into the cellular environment due to disruption of lysosomal membrane since biocides are known to produce cytotoxic action and alterations in membrane fragility[15].

The increase in alkaline phosphatase activity was significant. This elevation may indicate increased uptake of certain metabolites and ions since these enzymes are reported to be involved in this process[16]. Higher activity of alkaline phosphatase in the present study may also suggest changes in the energy-supply metabolism as it is associated with carbohydrate metabolism[17].

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A CYTOLOGICAL NOTE ON THE POSSIBLE MODE OF ORIGIN OF *ATHERIGONA ORIENTALIS* SCHIN. FROM *MUSCA DOMESTICA* L.

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THE traditional materials like *Drosophila* and mosquitoes have been widely known for their salivary gland chromosomes. However, the family Muscidae has a poor representation in this respect. *Musca domestica* L.[1, 2] and *Atherigona orientalis* Schin.[3] are the only species of this family for which the salivary gland chromosome maps are available. These species, however, vary in their diploid number of chromosomes which is 12 in *Musca* (10 + XY) and 10 in *Atherigona* (8 + XY). As against these, 12 polytene chromosomal arms have been observed in *Musca*[2] and 11 in *Atherigona*[3]. The available salivary/polytene chromosomal maps of these two genera, belonging to the subfamilies Muscinae and Phaoniinae respectively, have been compared here to find out the banding differences, if any, at the generic/species level (figure 1). The relationship of their chromosome numbering systems has been summarized in table 1.

It is seen that the banding pattern of the Y chromosomes in the two genera reveals a good deal of resemblance. Similarly the major landmarks of the chromosomal arms III L, III R, IV L, IV R, V L and V R of *Atherigona* show resemblance with those of

Figure 1. Comparison between the polytene chromosomes of *Musca domestica* L. and the salivary chromosomes of *Atherigona orientalis* Schin. (from chromosome Y to chromosome V).

Table 1 *Polytene chromosome numbering system of Musca and Atherigona*

Musca domestica L		*Atherigona orientalis*
Salivary chromosome map[1]	Polytene chromosome map[2]	Schn. Salivary chromosome map[3]
—	Y	Y
—	X	I L and I R
I	II	II
II	V	—
III	III	III
IV	IV	IV
V	VI	V

III L, III R, IV L, IV R, VI L and VI R of *Musca*. However, the banding sequence in the free end of III L of *Musca* from the region 17A to 18B varies from that of III L of *Atherigona* from the region 16A to the middle of 17A.

The diagnostic banding pattern of the X chromosomal arm of *Musca* upto the middle of the region 3B resembles to a great extent the I L of *Atherigona*. The rest of the X chromosome of *Musca* resembles I R of *Atherigona* (as shown in figure 2). From this we can conclude that the X chromosome of *Musca* has its centromere at the end of 3B

A unique case is exhibited by the right and the left arms of the chromosomal pair II. From the free end upto the beginning of the region 10C of II L of *Musca*, the major banding pattern resembles that of II L of *Atherigona*. Similarly from the centromeric end right upto the beginning of 15A of II R of *Musca* the major landmarks are the same as those of II R of *Atherigona*. The rest of the regions *i.e.* from the end of 10C to the end of 12C of II L and from the middle of 15A to the end of 16B of II R of *Musca* are totally absent in *Atherigona*. Pair V of *Musca* is altogether wanting in *Atherigona*.

A perusal of table 1 and a comparison between the banding systems of both the genera suggest that a deletion of the free end of II R from the middle of 15A to the end of 16B and a translocation between chromosome V and chromosome II L from the region 11A to 12C of *Musca domestica* must have occurred resulting in the complete loss of pair V and a part of chromosome II in *Atherigona orientalis*.

According to van Emden[4], the ancestors of the subfamily Phaoniinae are thought to be derived from the subfamilies. Fanniinae, Athomyiinae and Muscinae. The evidence presented here seems to prove this view. However, to confirm it cytologically we need

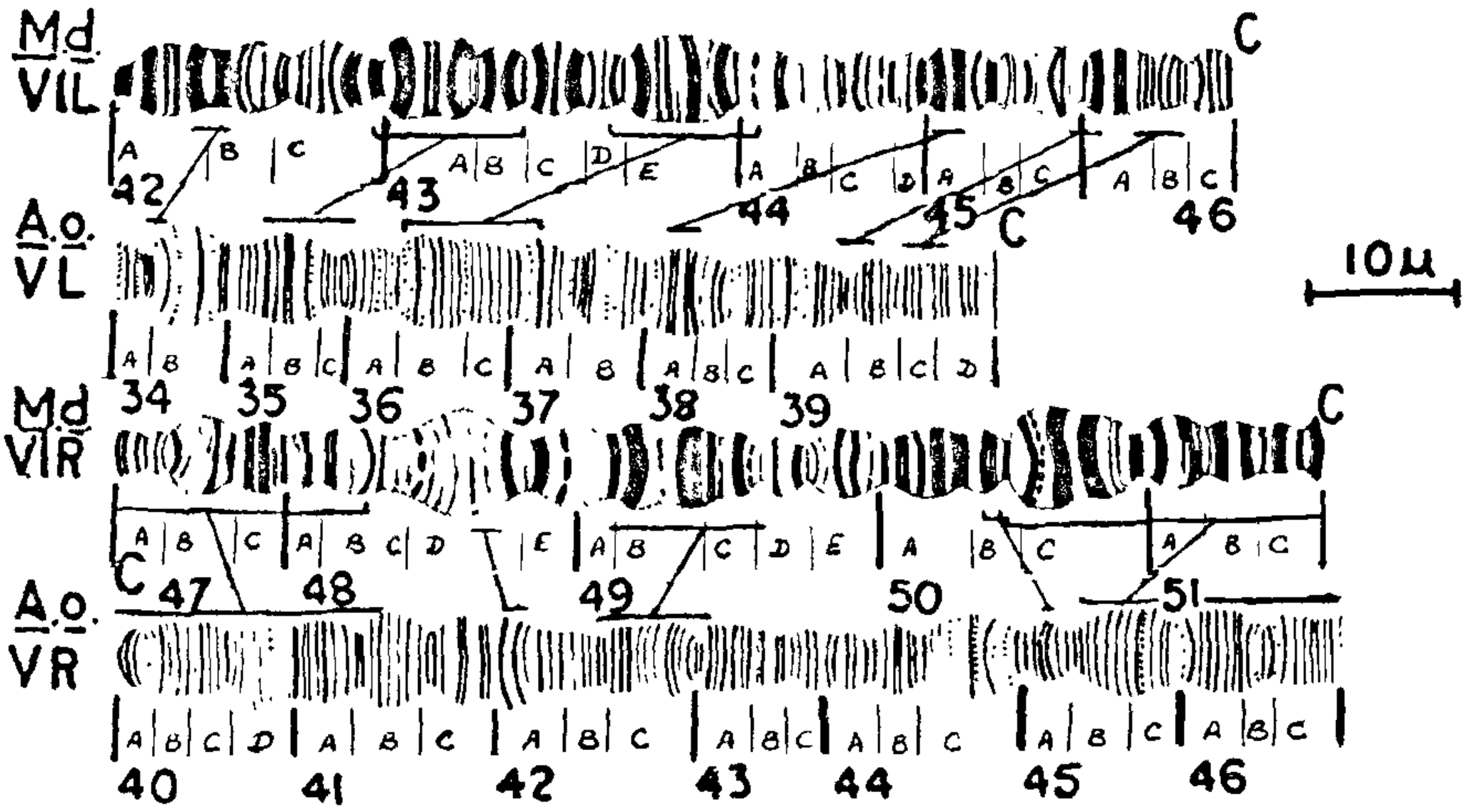

Figure 2. Chromosome VIL and VIR of *Musca domestica* compared with V L and V R of *Atherigona orientalis*. Abbreviation used: *M. d.* = *Musca domestica*, *A. o* = *Athergona orientalis*; C = Centromere.

some more work on various other members of these families.

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NEWS

MIND CONTROL IN 1984

. . . "For more than a decade, spanning the 1950s and 1960s, the Central intelligence Agency sponsored experiments in extreme forms of mind control and behaviour modifications. . . . its most notorious covert program (was) designed to develop operational technologies for disrupting and then reprogramming an individual's habitual patterns of perception, thought and action. Government research funds were funneled through universities and mental hospitals to encourage the experimental testing of LSD and other psychoactive drugs, as well as electro-shock treatment, hypnosis and other exotic types of direct intervention in (the) functioning of the human mind. The program was halted not because of the outrage of the citizency (few knew of the existence) or the ethical concerns of turning American citizens into vegetables, but because it did not do the job. These potent gadgets and gimmicks could surely scramble anyone's brain; but they could not direct a person's action in predetermined ways." (Reproduced with permission from *Press Digest, Current Contents* ®, No. 21, May 21, 1984, p. 18), Copyright by the Institute for Scientific Information ® Philadelphia, PA, USA).

PATENTING EMBRYO TRANSPLANT

. . . "According to Ervin E. Nichols, Director of practice activities at the American College of Obstetricians and Gynecologists. . . ." I have to tell you that I was astounded when I heard a patent was being sought on the process. It is an almost unheard of precedent in medicine. It would mean that any time anybody develops a new and different technique, that it would be patented, and then nobody else could do it unless they had a license to. I just do not believe that the patent will be granted, or that it would hold up. Fertility and Genetics Research, Inc., Chairman, Lawrence G. Sucsy, a Chicago investment Banker and one of several dozen investors in the firm, disagrees: 'The idea of patenting a medical procedure is not astounding at all'. To prove it, Sucsy has sent to colleagues copies of patents granted on medical procedures ranging surgery on the eye, brain and stomach to a non-surgical method of reversible female sterilization" (Reproduced with permission from *Press Digest, Current Contents* ® No. 24, June 11, 1984. Copyright by the Institute for Scientific Information®, Philadelphia, PA, U.S.A.)