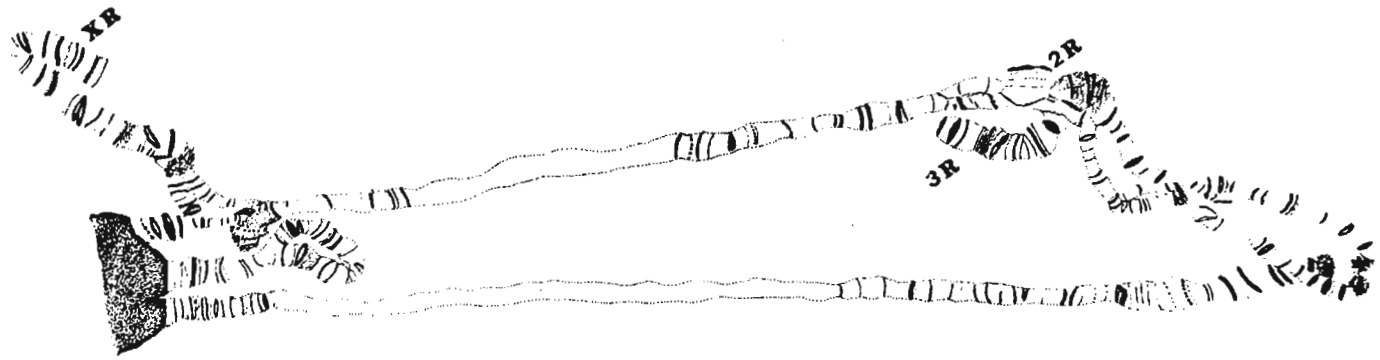
Sajjan, S. Nirmala and N.B. Krishnamurthy. University of Mysore, Manasagangotri, Mysore, India. Report on two new translocations in a natural population of D. ananassae from Hiriyur (Mysore State, India).

Translocations are of very rare occurrence in natural populations of Drosophila, although certain special kinds of translocations, called centric fusions, have played an important role in the phylogeny of a large number of species. Patterson, Stone, Bedichek & Suche (1934) have pointed out that many mutual translocations lead to inviability or infertility in homozygous condition due to some kind of position effect in Drosophila. Further, they have stated that the impaired fertility of heterozygotes confers strong negative selection pressure on the survival of these translocations.

There are a total of five translocations reported in the literature in D. ananassae (Kikkawa 1937, 1938, Kaufmann 1936b, 1937; Dobzhansky & Dreyfus 1943; Freire-Maia 1961; Ray-Chaudhuri & Jha 1965; Futch 1966). Of these, one (Kikkawa 1937, 1938 & Kaufmann 1936b, 1937) was shown to be karyotypically fixed, involving the translocation of basal region of the X-chromosome to chromosome number four. The other four translocations (probably floating types) have been reported between 2L and 3L in Brazilian population by Dobzhansky and Dreyfus (1943), between 3R and 2R from Uberlandia, Minas Gerais population of Brazil by Freire-Maia (1961), between 3L and 4 in Mughalsarai population of North India by Ray-Chaudhuri and Jha (1965), and between XL and 2R in one larva of Niue Island population by Futch (1966).

The two new translocations reported in this article were observed in a single larva obtained from a naturally inseminated female collected from Hiriyur of Mysore State, India. Both of these translocations are reciprocal heterozygous translocations, one involving the basal portion of the right arm of the second chromosome and the right arm of the X-chromosome and the other is between the terminal portion of the right arm of the second chromosome and the right arm of the third chromosome. This is a unique case where one arm of the second chromosome has participated in the formation of translocation heterozygote with two arms of two different chromosomes, namely XR and 3R (Fig. 1). Both of these translocations are dif-



ferent from those described earlier. At this stage, it is risky to draw any conclusion because of the rarity of these new translocations. However, the presence of these suggests that this cosmopolitan species is experimenting on its own Karyotype by instituting novel translocations. It may be that these are floating ones; none the less, these two translocations are reported for the first time in this species.

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