This report describes the salivary gland chromosome cytology of the Infra-bar-Bar double type mutant in Drosophila melanogaster. The stock used was a long inbred forked Infra-bar-Bar line established by Luce (1935) from an 18-facet female arising from a mating between inbred forked Infra-bar strain and an inbred strain of forked Bar. The Infra-bar-Bar line has repeatedly given rise to Infra-bar and to Bar.

Hager (1941), in the only report extant on the salivary chromosomes of this particular double type mutant, could find no more than a duplication of the 16A segment accompanied by a swelling or bulging of this region over that found in Bar or Infra-bar. Hager's interpretation thus departs from the triplication hypothesis found by others in favorable preparations of the other double type mutants at the Bar locus. In the present study the best preparations suggest an interpretation which reconciles the duplication with the bulging hypothesis of Hager (1941) with the triplication hypothesis of Bridges (1936) and Sutton (1943).

Figure 1 is a photograph of the bulge which is characteristic of the 16A region in salivary gland chromosome preparations. Two sets of bands are immediately apparent by locating the thick bands which represent 16A1,2. Examination under phase contrast clearly suggests the interpretation indicated in Figure 2. There is a triplication, designated in the figure by the superscripts (1), (2), and (3) of the 16A segment but not in linear order. The second and third segments are somewhat end to end across the chromosome with some overlapping.

This interpretation would explain the apparent increase in the width of the bulge shown here and noted by Hager and also would support the triplication hypothesis of Bridges and Sutton.