BONE-marrow cells from the majority of patients with chronic myelocytic leukemia have a specific and characteristic aberration of chromosome 22, called the Philadelphia (Ph¹) chromosome.¹ This abnormality, which may be found even before the onset of overt leukemia,² is present throughout the course of clinical disease. Although the Ph¹ chromosome probably is important in the pathogenesis of the disease the primary causes (which presumably are also the factors inducing the chromosome abnormality) remain largely unknown. An indirect approach to elucidating causative factors involves determining the number of cells from which chronic myelocytic leukemia arises. Single-cell (clonal) origin would be.....