Five years of annual hand pruning in a densely planted (30'x30') mature (20 years old) Hartley orchard near Hanford failed to increase production over non-pruned trees. The experiment, concluded in 1979, consisted of nine replications with 30 trees per plot or a total of 270 trees per treatment. Prior to the test, the trees, which had attained a height of 30' to 35', received little pruning and were allowed to completely close together resulting in severe shading out of the lower one-half of the canopy. Nut production was thereby confined to the upper 15' to 20' of the trees. Pruning consisted of around 10 to 30 thinning cuts (1" to 2-1/2" diameter) per tree each year designed to open up the centers and remove crowded limbs in the upper one-third of the tree. The objective was to promote greater light penetration into the canopy in order to rejuvenate fruit wood in the lower part of the tree and increase yield. Light measurements taken three feet above ground in early June revealed that pruning increased canopy penetration of photosynthetically active radiation (PAR) by 40%. However, this still only represented less than 3% of full sunlight. Pruning significantly reduced yield in 1975 and 1977 and only equalled the production of the non-pruned trees in 1976, 1978, and 1979. The mean yield for the five years was 2.26 tons per acre for the pruned trees compared to 2.44 for the non-pruned, a 7.3% overall reduction as a result of pruning. These results show that pruning should not be expected to increase yields in high density mature walnut orchards where the lower fruiting wood has shaded out but the upper, nut bearing portion of the tree canopy is still sufficiently vigorous for adequate fruit wood renewal. Restoration of the bearing capability of the lower part of the trees appears to require much greater light exposure than can be obtained by conventional pruning consisting of moderate thinning out of the upper branches.