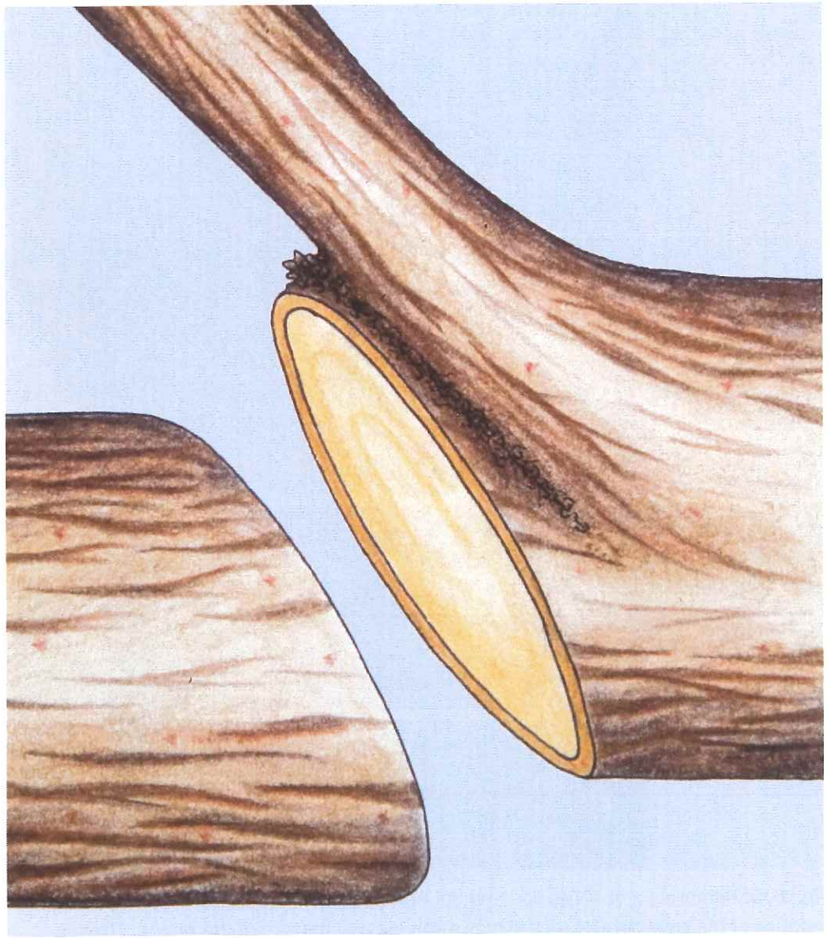

Fig. 106: If thick branches must be reduced then they must be cut on a slant outside the branch bark ridge in the area of the remaining lateral branch. Branches greater than 5-10 cm (2-4 inches) in diameter should not be cut. If this is unavoidable, a nourishment blind spot will form at the lower wound margin.

What Size Wound Can A Tree Tolerate?

Pruning is, in and of itself, only one aspect of proper tree care. Even when cuts are carried out correctly, extensive discoloration and, after a few years, widespread decay can still occur in the trunk or codominant stem (see Fig. 76). The salient variables are the tree's ability to compartmentalize an injury and the diameter of the severed branch and, as a result, the size of the wound.

Wounds greater than 10 cm (4 inches) in diameter can result in discoloration extending deep into the trunk of an effective compartmentalizer. In weak compartmentalizers, this can happen even with wounds that are upwards of only 5 cm (2 inches) in diameter. Small branch wounds (i.e., less than 5 or 10 cm/2 or 4 inches in diameter, depending on compartmentalizing ability, see p. 89) are usually compartmentalized in a limited area and grown over after several years. The encapsulated wound is no longer a problem for the tree (i.e., Phase 4 of the CODIT Principle).

The larger the branch wound, the more time the tree needs for encapsulation of the damage and, therefore, the longer it remains in Phase 3. Larger branch wounds will cause further discoloration and decay. As long as Phase 4 has not been reached, rot can continue to spread in the tree. The compartmentalization of the older wood tissue is the weak link in the entire process: the older the tissue to be compartmentalized, the weaker the boundary layer. It is more easily penetrated by fungi, whereupon a new compartment is formed outside the discolored area. In this manner, the wood tissue that has been abandoned by the tree and, consequently, the amount of rot become larger. The larger the pruning wound, the greater the risk that, after a few years, the discoloration and subsequent decay will spread deep into the trunk or codominant stem. Even when a proper cut has been made, extensive damage to the trunk can occur and increase the tree's susceptibility to failure. Large wounds must therefore be avoided when crown pruning. Extensive cuts to the entire crown, or large portions thereof, should always be the exception, regardless of the tree species. If corrective crown pruning is required (e.g., to improve road safety), other options to removing large branches should also be considered, such as reduction cuts to smaller branches. The safety of a tree can often be achieved without pruning, by installing bracing or cabling instead (see *ZTV-Baumpflege*, 2006 ed.).