

cended right through into his sexually adult life. There was plenty of time to imitate and learn the special techniques that had been devised by previous generations. His weaknesses as a physical and Instictive hunter could be more than compensated for by his intelligence and his imitative abilities. He could be taught by his parents as no animal had ever been taught before.

But teaching alone was not enough. Genetic assistance was required. Basic biological changes in the nature of the hunting ape had to accompany this process. If one simply took a typical, forest-living, fruitpicking primate of the kind described earlier, and gave it a big brain and a hunting body, it would be difficult for it to become a successful hunting ape without some other modifications. Its basic behaviour patterns would be wrong. It might be able to think things out and plan in a very clever way, but its more fundamental animal urges would be of the wrong type. The teaching would be working against its natural tendencies, not only in its feeding behaviour, but also in its general social, aggressive and sexual behaviour, and in all the other basic behavioural aspects of its earlier primate existence. If genetically controlled changes were not wrought here too, then the new education of the young hunting ape would be an impossibly uphill task. Cultural training can achieve a great deal, but no matter how brilliant the machinery of the higher centres of the brain, it needs a considerable degree of support from the lower regions.

If we look back now at the differences between the typical 'pure' carnivore and the typical 'pure' primate, we can see how this probably came about. The advanced carnivore separates the actions of food-seeking (hunting and killing) from the actions of eating. They have become two distinct motivational systems with only partial dependence one on the other. This has come about because the whole sequence is so lengthy and arduous. The act of feeding is too remote, and so the action of killing has to become a reward in itself. Researches with cats have even indicated that the sequence there has become further sub-divided. Catching the prey, killing it, preparing it (plucking it), and