

first appears. A great deal will depend on the exact temperature levels of the environment and on the amount of direct sunshine. Even if we suppose that the climate was suitable for hair loss-that is, moderately hot, but not intensely hot-we still have to explain the striking difference in coat condition between the naked ape and the other open-country carnivores.

There is one way we can do this, and it may give the best answer yet to the whole problem of our nakedness. The essential difference between the hunting ape and his carnivore rivals was that he was not physically equipped to make lightning dashes after his prey or even to undertake long endurance pursuits. But this is nevertheless precisely what he had to do. He succeeded because of his better brain, leading to more intelligent manoeuvring and more lethal weapons, but despite this such efforts must have put a huge strain on him in simple physical terms. The chase was so important to him that he would have to put up with this, but in the process he must have experienced considerable over-heating. There would be a strong selection pressure working to reduce this over-heating and any slight improvement would be favoured, even if it meant sacrifices in other directions. His very survival depended on it. This surely was the key factor operating in the conversion of a hairy hunting ape into a naked ape. With neoteny to help the process on its way, and with the added advantages of the minor secondary benefits already mentioned, it would become a viable proposition. By losing the heavy coat of hair and by increasing the number of sweat glands all over the body surface, considerable cooling could be achieved-not for minute-by-minute living, but for the supreme moment of the chase-with the production of a generous film of evaporating liquid over his air-exposed straining limbs and trunk.

This system would not succeed, of course, if the climate were too intensely hot, because of damage to the exposed skin, but in a moderately hot environment it would be acceptable. It is interesting that the trend was accompanied by the development of a subcutaneous fat layer, which indicates that there was a