Feeding readiness of ticks, as an indicator of the resistance of rabbits to the ticks, decreased with repeated infestations. The gross, haematological, immunological and histopathological reactions accompanying each degree of tick resistance were studied. Causes of the histopathological reactions and their effect on tick attachment and feeding are discussed. It is concluded that the resistance involves an Arthus type of immediate hypersensitivity, which is superimposed upon (and enhances) the physiopathological reactions of the skin. These skin reactions include epidermal hyperplasia, vesiculation and increased growth of hair follicles.