

Electron microscope observations on enlarged hypertrophied salivary glands dissected from adult laboratory-reared male *Glossina morsitans morsitans* show a concurrent infection of the salivary gland tissue with rod-shaped virus particles and intracellular rickettsia-like organisms. The latter are found intracellular in the epithelium and in the gland lumen enclosed within lytic zones. The virus particles are found within the degenerating cytoplasm, nuclei, and lumen of the cell where they are especially numerous. Stratified epithelium and gland enlargement are a prominent feature of the infection. These observations suggest that biological associations between salivary gland tissue and diverse microbes may be more common than formerly recognized. The microbes appear to cause damage to salivary gland cells, causing hyperplasia which assumes pathologic proportions.