



Fig. 4. Electron micrographs of distal thin epithelial lining and bacterial contents of pouch lumen (all *T. nitida*). (a) Thin epithelium lining distal part of bacterial pouch with penetrating strands containing tracheoles (tr), scale bar 10 μm . (b) Detail of thin cuticle-lined distal epithelium with irregular microvilli. Note bacteria (B) adhering to cuticle with their long axis perpendicular to cuticular surface. ct, cuticle; M, mitochondria; MF, muscle fibers, scale bar 1 μm . (c) Tracheoles (tr) in centre of bacterial pouch. Note surrounding cuticular lining (ct); N, nucleus, scale bar 1 μm . (d) Detail of bacterial pouch lumen with bacteria (B), showing double lining membrane. F: flagellar sections. Scale bar 1 μm .

massive numbers of rod-like bacteria with a length of approx. 2 μm and a diameter of approx. 0.6 μm [Figs. 1(d) and 4(a)–(d)]. In between the bacteria occur small thread-like structures with a diameter around 0.15 μm [Fig. 4(d)], that possibly correspond with flagellar tails. The bacteria are especially abundant near the apical border of the ectodermal epithelium and its tissue strands that accompany the penetrating tracheoles. These bacteria appear to adhere onto the lining cuticle with their long axis perpendicular to the cuticular surface [Fig. 4(a) and

(b)]. At higher magnification, the bacteria clearly show a double membrane lining their granular contents [Fig. 4(d)].

4. Discussion

T. binghami is a bamboo-dwelling species that lives in symbiosis with pseudococcid mealybugs (Coccoidea) within the internodes of the large bamboo *Gigantochloa scorechinii* it inhabits. The diet of these ants is not clearly