The morphology and ultrastructure of four species of CRYOTHECOMONAS gen. nov. (Protista incertae sedis) in material from the Weddell Sea, Antarctica, and the Isefjord, Denmark, are described. These heterotrophic flagellates, which were initially observed in association with sea ice, display a unique combination of morphological characteristics. At present it is impossible to assign the new genus to an existing higher taxonomic level of protistan flagellates. Cryothecomonas species are furnished with a close-fitting multilayered theca. The two naked anterior flagella emerge through narrow thecal funnels. A transitional helix is part of the flagellar transition zone. A conspicuous cytostome is located in a posterior (lateral) position. Food uptake is mediated through the extension of cytostomal pseudopodia. The nucleus is anteriorly located and contains a conspicuous nucleolus and distinct areas of chromatin. Mitochondrial cristae are tubular. Cryothecomonas species feed on cells in the size range 2-4.5 μm (e.g., algal flagellates). Data are presented on the abundance of Cryothecomonas armigera sp. nov. in Antarctic waters.