26. Balantidium coli (Malmsten 1857)

**Balantidium coli** is widely distributed throughout the world, but the prevalence of human infection is not known. Endemic foci have been reported from New Guinea, Micronesia, Seychelles Islands, and Central and South America.\(^1\) Sporadic epidemics have occurred in institutionalized populations. Infected individuals harbor the parasite in the colon, the infection being self-limited and only rarely associated with symptoms. The parasite is capable of infecting a wide range of domesticated and wild mammals, including primates, guinea pigs, horses, cattle, pigs, and rats.

**Historical Information**

The discovery of *B. coli* in association with human disease is attributed to Malmsten,\(^2\) who in 1857 described two patients in Sweden with this infection. One recovered, and the other died. In both, Malmsten found ciliates, which he carefully described and depicted in drawings.

**Life Cycle**

*Balantidium coli* has two forms: the trophozoite (Fig. 26.1) and the cyst (Fig. 26.2). The cyst measures 55 μm in diameter; the trophozoite, which is ovoid, is 70 μm in length and 45 μm in width. The cyst is the infective stage and is usually ingested in contaminated food or water. Excystation takes place in the small intestine, and the released trophozoite takes up residence in the large intestine, invading the walls of the transverse and descending colon. In this regard it is similar to *E. histolytica*; but unlike the lat-
Figure 26.1. *Balantidium coli* ciliated trophozoite. Note the U-shaped macronucleus. × 600.

Figure 26.2. *Balantidium coli* cyst (i.e., the infectious stage). × 600.

Figure 26.3. *Balantidium coli* trophozoites (arrows) in a lesion in the colon. × 150.

**Pathogenesis**

*Balantidium coli* trophozoites burrow into the submucosa, ingesting host cells in the process. They also erode the muscularis, which can lead to bleeding. The mechanism by which this organism digests host tissues is unknown, although a hyaluronidase from *B. coli* has been described.\(^5\)

**Clinical Disease**

Diarrhea is the most characteristic symptom, although few of the infected individuals are symptomatic; fewer still have dysentery. Fever, nausea, vomiting, and asthenia have been described. Rarely, *B. coli* causes ulcerative and granulomatous disease in the colon and appendix leading to typhlitis\(^6\) and appendicitis.\(^7\)

**Diagnosis**

The diagnosis is made by identifying the organism, in the form of a trophozoite or a cyst (Figs.