OBSERVATIONS ON *BALANTIDIUM COLI* IN CULTURE

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Ever since MacDonald divided the ciliated protozoa in swine of the genus *Balantidium* into two species, *B. coli* and *B. suis*, there has been doubt whether the separation is valid. Since it is important from the standpoint of the etiology of balantidial dysentery to know whether one or two species are involved, the present investigation was undertaken. The most important difference between the two species is in their length-width ratios. *B. suis*, which is relatively thin, has a length-width ratio of approximately 1.8; the length-width ratio of *B. coli* is approximately 1.3. Balantidia from the ceca of pigs were fixed in Kleinenberg's solution, and 100 individuals from each pig were measured. Culture media were then inoculated with material from the ceca, and 100 individuals from the first culture transfer were fixed in Kleinenberg's and measured. In some cases measurements were made of balantidia from further culture transfers. A total of 1900 balantidia from eight swine were measured in the present investigation. It was found that the change from the cecum to the artificial culture medium had a significant effect on the length of the protozoa, and that it could markedly alter their length-width ratios. In six cases, the mean length-width ratio became smaller on cultivation (i. e., the individual became more *coli*-like), the reduction varying from 0.10 to 0.53 units. In two cases the shift was in the opposite direction, and the length-width ratios increased from 0.10 to 0.18 units. Thus it has been shown that the length-width ratios of strains of *Balantidium* are not constant and that in one case a strain which was of the *suis* type in the cecum became *coli*-like in culture.