It will be seen that a number of the bands do correspond in position, and for the time being for purposes of identification we propose to give similar designation as for the human to those bands with corresponding mobilities in animal sera.

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## Cytochemical Localization of Acid Phosphatase in *Trichonympha turkestanica* Bernstein (Trichonymphina, Trichonymphidae)

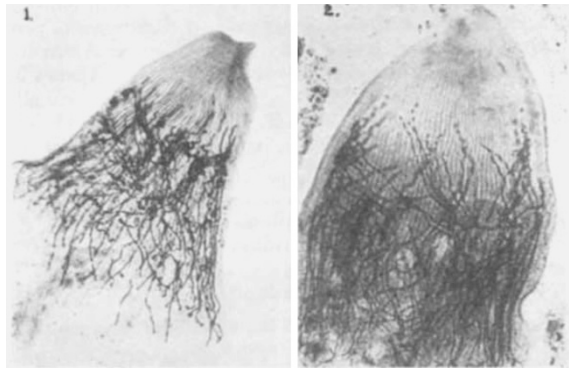
H. W. Dean and E. W. Dempsey[1] found prominent deposits of acid phosphatase in the Golgi region of the duodenal epithelium in the rat, mouse, deer mouse, hamster, cat and monkey. They also recorded the presence of well-defined concentrations of acid phosphatase in the Golgi zone of the uterine epithelium of the pregnant cat and sow. These two authors also observed granular deposits of the same enzyme in the Golgi region and in the apical cytoplasm of cells from the liver and kidney of sundry species.

Bourne[2] mentioned that the acid phosphatase of the intestinal mucosa occurs in the cytoplasm of the cells, particularly in the region occupied by the Golgi element.

In his work on the spermatogenesis of guinea pig, R. B. Sharma (unpublished work) pointed out that the acid phosphatase granules seem to follow, in a way, the fate of the Golgi apparatus. From the spermatogonia to the final formation of the sperm, the Golgi apparatus can be seen in the acid phosphatase preparations by the phase-contrast microscope. In the spermatogonia, the negative image of the Golgi apparatus was seen along the site of localization of the enzyme granules. Similarly, the negative image of the Golgi apparatus was visible in the spermatocytes and spermatids. He also added that the Golgi apparatus might secrete this enzyme, but he had no proof.

In the present work, I was able to demonstrate that the only organelle which shows any reaction to the acid phosphatase Gomori technique[3] in the protozoan *Trichonympha turkestanica* Bernstein is the parabasal apparatus (Figs. 1 and 2). *Trichonympha turkestanica* Bernstein is a symbiotic zooflagellate living in the lumen of the hind gut of the termite *Anacanthotermes ochraceus* (Burm.). This protozoan has a characteristic parabasal apparatus in the form of about fifty irregularly twisted cords that are relatively large. Each parabasal cord has a diameter of about 3 microns. Some of these cords may attain a length of about 100 microns. Pierre Grassé and Nina Carasso[4] showed by electron microscope studies that the parabasal apparatus of zooflagellates (*Trichonympha*, *Spirotrichonympha*, *Trimitus*, *Foania*, *Joenia*), the dictyosomes of somatic and germinal cells, and the Golgi 'cords' of secretory cells have the same composition and are strictly homologous elements.

The protozoan under investigation, with its conspicuous and characteristic Golgi apparatus



Figs. 1 and 2. Cytochemical reaction of acid phosphatase (Gomori's method) in *Trichonympha turkestanica* Bernstein. The incubation period is 1 hr. in Fig. 1 and 18 hr. in Fig. 2

(parabasal apparatus), is excellent material for showing the close relationship between the Golgi apparatus and the sites of localization of the acid phosphatase enzyme.

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## Infection of Native *Solanum* Species by the Potato Blight Fungus

SINCE the discovery of *Phytophthora infestans* (Mont.) de Bary on the New Zealand shrub *Solanum aviculare* Forst.[1] in native bush near Auckland by Miss J. M. Dingley, many other infected plants of this species have been found in both the North and South Islands (Brien, R. M., personal communication).

A sample of fungus from *S. aviculare* received in June 1956 was inoculated to leaves and tubers of a number of commercial potato varieties, to leaves of a series of differential hybrids, and to leaves of *S. aviculare* and the related species *S. laciniatum* Ait[2]. Susceptible varieties and the two native species were readily infected, but no hybrid carrying one or more immunity genes was infected, suggesting the presence[3] of the common race *O*. Blight spores were taken from *S. laciniatum* and inoculated to a further series of plants as above with the same result.

In May 1957 blight races 0, 1, 4, 1–3, 2–4, were isolated from samples collected throughout New Zealand. Both species were susceptible to all races. In June 1957 blight was found on plants of *S. laciniatum* growing in the Lincoln township, and tests indicate the presence of race *O*.

In the past, diseased tubers have been considered to be the sole means for carrying on the fungus from year to year. In New Zealand it would appear that these two shrubs could well act as overwintering hosts. Both species are common, *S. aviculare* mainly in the north and *S. laciniatum* in the south[2]. In view of the small foci needed to start an epidemic[4], and the distance spores can travel[5], even a small amount