From these data we conclude that protozoan parasites do not occur in the normal mouth. *Endamoeba gingivalis* occurs in most, if not all, cases of incipient to advanced pyorrhea. *Trichomonas buccalis* appears frequently in cases of advanced pyorrhea, or occasionally in cases with a history of effectively treated pyorrhea.

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A Preliminary Study of Rhodobacillus Palustris, Molisch.

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The form studied was obtained by Mr. W. Meehan from the intestines of a Cerambycid beetle. It proved to be a true purple bacterium with the characteristics of Molisch's *Rhodobacillus palustris.*[1]

The Molisch group of the purple bacteria was omitted in a previous study by one of us. Here the spectra of various purple bacteria were considered, including the sulphur bacteria, brine bacteria and the lichen symbiont *Chiodecton.*[2] It seemed, therefore, desirable to determine the spectrum characteristics of the *Rhodobacillus.*

Microspectra were taken with the microspectrograph[3] on Wratten panchromatic film of a very thin layer of pure culture bacteria (one bacillus thick). A control photograph of the lamp was taken on the same film.

The negatives were measured out by means of densitometer attachment to the radiomicrometer.[4] First the raw data were used to calculate the position of the absorption bands. It was found that *Rhodobacillus* is a true purple, inasmuch as the position of the bands agrees closely with the data already obtained (Becking l. c.). The extrapletions were carried out by means of a triple set of assumed wave lengths and the prismatic spectrum converted by means of v. Hartmann's formula.

Calculated for Purple Bacteria	Found for Rhodobacillus
590μμ	590μμ
568	absent
548	548
515	512
500	500
480	480
459	458
446	443
438	430?

By the use of Schwartzschild's law the per cent absorption for various wave lengths was determined by means of comparison with the lamp negative. The following table shows the absorption for various wave lengths:

Wave length	Per cent absorption
590μμ	53.5
580	45.0
568	54.7
560	50.7
548	55.7
530	33.7
520	42.8
458	36.8
430	60.8
410	61.5
390	74.5

Integration of the plotted absorption curve gives an absorption between 590μμ and 410μμ of 45.8 per cent for the single bacterium.

The absorption characteristics of a somewhat thicker layer of *Rhodobacillus* was ascertained by means of a radiomicrometer and glass screens. The light-green "Corning" screen transmitted only visible light between 680 and 400μμ. The other screen was a carbon glass which transmitted only infra red up to the visible red. The lamp used was an Edison Platinum filament lamp, run on a transformer.

Light source	Per cent absorption
Pt. lamp, no screens	36.6
Pt. lamp, visible only	73.2
Pt. lamp, infra red only	19.7

This tends to show that the infra red absorption bands of the purple bacteria, as described by Buder,[5] do not have much influence on the absorption curve.

Another culture of apparently the same species of *Rhodobacillus* was isolated from corn starch paste. The identity of the two forms was established by routine bacteriological procedure. As Molisch' characterization is inadequate, we will attempt to give a short diagnosis of the form.

Short stout rods, 2-3μ long. Gram negative, non-motile, no endospores. Colonies on gelatin; rapid liquifier, colonies sunken, salmon pink, coalesce after a few days. Gelatin stab; rapid liquefaction, pigment formation at the top. Agar colonies; small, even-edged, slightly raised above the surface. The color is denser in the center of the colony. Agar stab; good growth, facultative anaerobe. Lead acetate stab, slight H_2S formation. Broth; not very strong growth, no pellicle formed, no pigmentation, except after standing for 5 to 7 days at 20° C.

Litmus milk becomes slightly acid but does not curdle or peptonize. No indol formation after 2 days at 37.5° C. Nitrates are reduced to nitrites.

Pigment formation takes place in light or dark, even at 4° C. At 37.5° C. no pigment is formed, and growth is only moderate. The pigment is first salmon pink. Later (due to the increase in bacteriochlorin) the color becomes dark crimson red. After a few weeks on agar the color begins to fade out.

Rhodobacillus does not form gas on any carbohydrate media investigated. It formed acid from the following substances: dextrose, maltose and mannitol. No acid was formed in lactose, galactose, sucrose and levulose, although these sugars seemed to form an adequate source of carbon for the bacteria.

According to the modern bacteriological nomenclature[6] the form studied belongs to the genus *Serratia*. The general bacteriological characteristics of the *Chromobacteria* leave much to be desired.

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[1] Molisch, H., *die Purpurbakterien*, Jena, 1907, page 14, plate I, figs. 1-4.

[2] Becking, L. B., PROC. SOC. EXP. BIOL. AND MED., 1925, xxii, 523.

[3] Becking, L. B., and Ross, P. A., *J. Gen. Physiol.*, 1925, ix, 3.

[4] Field, J., and Becking, L. B., *J. Gen. Physiol.*, 1926, ix, 445.

[5] Buder, J., *Jahrb. Wiss. Bot.*, 1919, lviii, 525.

[6] Bergey, H., *Manual of determinative Bacteriology*, 1923, 85.