

Kendall, Day and Walker⁷ and Kahn⁸ were inclined to deny fermentation of sugars, and a more critical study of our five strains shows clearly that they ferment neither glucose, levulose, maltose, lactose, saccharose, salicin, glycerol nor inulin. That is, there is neither increase of hydrogen ion concentration nor considerable gas production.

B. histolyticus is thus the third sporulating anaerobe failing to derive its carbon from any of the commonly tested carbohydrates, glucosides or alcohols, the other two being *B. tetani* and *B. putrificus*.

The following table summarizes the outstanding differences between these three non-fermentative species of sporulating anaerobes:

	Morphology of spores	Tyrosin crystal	Culture filtrates
<i>B. histolyticus</i>	Subterminal, oval	Formed	Lytic
<i>B. tetani</i>	Terminal, round	Not formed	Non lytic but powerfully tetanospastic
<i>B. putrificus</i>	Terminal, round	Not formed	Harmless

249 (2209)

A note on the mechanism of the peculiar lesions produced by bacillus histolyticus.

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B. histolyticus was first described by Weinberg and Seguin¹ in 1915 as an obligate anaerobe from war wound infections in which it may display a remarkable and peculiar lytic activity. Pure virulent cultures injected intramuscularly into guinea pigs literally digest the flesh from the bones, hence the name—histolyticus.

⁷ Kendall, Day and Walker, *Jour. Inf. Dis.*, 1922, xxx, 141.

⁸ Kahn, *Jour. Med. Res.*, 1922, xliii, 155.

*Weinberg et Senguin, *Comptes rend. Acad. des Sc.*, 1916, clxiii, 449.

Notwithstanding its marked ability to dissolve living muscular tissues its proteolytic action in brain, meat, milk, serum, and egg mediums is slow though fairly complete over long periods of time. Weinberg and Seguin¹ found that sterile filtrates liquify coagulated egg white and gelatin and Blancet Pozerski² and Dernby and Blanc,³ concluded that a tryptic enzyme is secreted by this species.

Weinberg and Sequin¹ also noted that sterile filtrates injected intramuscularly in fairly large doses produce large hemorrhages, apparently by destruction of the vascular walls and we have confirmed this phenomenon by injecting guinea pigs with 2 c.c. of the Berkefeld filtrate from 24 hour glucose broth cultures of several of our strains including the California strain. Sterile hematomas the size of a pigeon's egg generally appear within several days following such injections. The blood contained therein does not become hemolysed and recovery follows their drainage. We have never observed the muscular tissues to disintegrate or the skin to break, however, from the injection of filtrates as after the injection of living cultures. It seems apparent that the hemorrhage induced by the soluble secretions of this species plays an important rôle in the peculiar phenomena accompanying at least experimental infection in affording a suitable focus for the growth of this germ which appears rarely if ever to invade the blood stream itself.

¹ Weinberg et Senguin, *La Gangrane Gazeuse*, Masson et Cie, Paris, 1917.

² Blanc et Pozerski, *Comptes rend. Soc. Biol.*, 1920, lxxxiii, 1343.

³ Dernby and Blanc, *Jour. of Bact.*, 1921, vi, 419.