Salmonella typhimurium, Salmonella pullorum, and Micrococcus pyogenes var. aureus were compared using the above method with Hinshelwood's "Apparent Lag" method. Both methods gave results in close agreement when used on nonfrozen cells, but on defrosted cells, the Relative Lag method was superior.

The use of the Relative Lag method was advantageous in that: (1) the physiological condition of cells in the early phase of growth was taken into consideration, (2) the method allowed comparison of lag times where slopes of logarithmic growth had been altered, due to prior physical conditions, and (3) the method was simple, thus requiring a minimum of mathematical calculation.

DECOMPOSITION OF OXALATE BY MYCOBACTERIUM LACTICOLA ISOLATED FROM THE INTESTINE OF EARTHWORMS

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Since the report of Bhat and Barker (J. Bacteriol., 55, 359, 1948) on Vibrio oxaliticus a few attempts have been made to study microorganisms decomposing oxalate by Janota (Doświadczalna i Mikrobiol., 2, 131, 1950), Müller (Arch. Mikrobiol., 15, 137, 1950), Khambata and Bhat (J. Bacteriol., 66, 505, 1953; Proc. Indian Acad. Sci., B, 38, 157, 1953), and Jayasuriya (J. Gen. Microbiol., 10, vi, 1954; Biochem. J. (London), 56, xli, 1954). With the possible exception of Müller, the researches of the other workers have been centered on the microorganisms belonging to the Eubacteriales order. In a recent communication, however, Khambata and Bhat (communicated to Nature, London) have reported the decomposition of oxalate by several strains of Streptomyces classified in the order Actinomycetales. This note reports the decomposition of oxalate by two strains of Mycobacterium lacticola isolated from oxalate enrichment media inoculated with suspensions of the intestinal contents of common Indian earthworms. Details of obtaining the earthworm intestinal contents and the technique of isolating oxalate decomposing microorganisms can be had elsewhere (Khambata and Bhat, J. Bacteriol., 66, 505, 1953).

The two strains of M. lacticola not only displayed oxalate decomposition by the characteristic halo formation on oxalate agar but also, on titration, revealed their ability to decompose 85 per cent of oxalate within 4 days when grown at 28°C in Bhat and Barker's liquid oxalate medium with 0.1 per cent yeast extract added to it. Their ability to decompose oxalate was further substantiated by nutritional studies in a mineral basal solution containing 0.1 per cent sodium oxalate as the sole source of carbon. In such a basal medium a concentration of 0.5 to 0.7 per cent of oxalate yielded maximum growth of the mycobacterium; the highest concentration tolerated was 2 to 3 per cent, while 3 to 4 per cent completely inhibited growth, the variation in figures depending on the strain employed.

The identification of the above two acid-fast strains was carried out by following the tests recommended by Gordon and Smith (J. Bacteriol., 66, 41, 1953) and Breed et al. (Berger's Manual of Determinative Bacteriology, 6th ed., 1948, The Williams & Wilkins Co., Baltimore, Md.). They were found to be strains of M. lacticola. We are indebted to Dr. Ruth E. Gordon, Rutgers University, U. S. A., who very kindly confirmed our identification of the two strains. A detailed description of the morphological, cultural, and physiological characteristics as well as a study of their nutritional requirements has been presented in a doctoral dissertation by one of us (Khambata, Ph.D. thesis, Bombay University, 1954).

The fact that these strains utilize oxalate well (even in a mineral salt solution) is in contradistinction to Müller's observation that M. lacticola does not utilize oxalate. On the other hand, saprophytic acid-fast bacilli, such as the "frog", "fish", "smegma", "grass", "mist", and "timothy" bacilli, have been reported in the past by Long (Am. Rev. Tuberc., 5, 857, 1922) to be able to

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utilize oxalate as the sole carbon source in a synthetic mineral medium. As far as the two strains of *M. lacticola* obtained from the intestine of earthworms are concerned, there can be no doubt of their ability to decompose oxalate.

It is interesting to note, when one follows the literature on this subject, that among the Eu- bacteriales and the Actinomycetales gradually more and more genera are being unearthed as those harboring oxalate decomposing species. It is hoped that the present paper will stimulate further investigations on this interesting subject.

DEVELOPMENT OF PHAGE T2 DESOXYRIBOSENUCLEIC ACID IN THE ABSENCE OF NET PROTEIN SYNTHESIS

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The desoxyribonucleic acid (DNA) of the T-even bacteriophages differs from that of its host, *Escherichia coli*, in containing 5-hydroxymethylcytosine (HMC) rather than cytosine (Wyatt and Cohen, Nature, **170**, 1072, 1952). Cohen and Weed (J. Biol. Chem., **209**, 789, 1954) suggest that cytosine is a precursor of HMC. One can postulate that the enzymes necessary for HMC synthesis arise by induced biosynthesis following virus infection.

Wisseman *et al.* (J. Bacteriol., **67**, 662, 1954) showed that the synthesis of proteins, but not DNA synthesis, is inhibited by chloramphenicol. In the present paper, experiments were designed to determine whether DNA synthesis is affected by chloramphenicol in the absence of net protein synthesis.

**Figure 1.** Effect of chloramphenicol on the development of phage T2 DNA.