

with active toxin were comparable to the indices obtained with thermally inactivated toxin or gelatin-phosphate buffer. Similar results were obtained with rabbit leukocytes. Phagocytosis appeared to be enhanced in the saline controls; rotating the leukocyte preparations for 60 min at 37 C depressed phagocytic activity. The results of individual experiments varied considerably, but cumulative results were not statistically significant (table 1).

Changes in the phagocytic index could not be used as a specific means of detecting botulinum toxin by the techniques used in this study. Therefore, it is suggested that reported depression of phagocytic activity by botulinum toxin should be appraised as to the techniques employed, and decreases in the phagocytic indices should be evaluated statistically.

### ARSINE PRODUCTION BY *TRICHOPHYTON RUBRUM*

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Received for publication August 26, 1960

Although the production of arsine from arsenic salts has been reported for saprophytic fungi (Gosio, Arch. ital. biol., **18**, 253, 1892, and Ber. Berlin, **29**, 2728, 1896, **30**, 1024, 1897; Sanger, Proc. Am. Acad. Arts Sci., **29**, 112, 1894; Biginelli, Atti reale. accad. Lincei, **9**, 210, 242, 1900; Massen, Arb. kaiserl. Gesundh., **18**, 475, 1902; Schmidt, Dissertation, Erlangen University, 1900), to our knowledge it has never been reported for a dermatophyte. In the course of a study testing the inhibition of *Trichophyton rubrum* (CDC strain) by arsenate and arsenite, a peculiar, nauseating, garlic-like odor was observed in the vicinity of the incubator where the inhibition plates were kept. Suspecting arsine gas, strips of silver nitrate and lead acetate paper were hung inside the incubator (Peterson, Haines, and Webster, *Legal Medicine and Toxicology*, p. 232, W. B. Saunders Company, Philadelphia, 1923). The nitrate strips became dis-

colored in several minutes while the acetate strips remained unaffected, thereby presumptively identifying an arsine. Positive identification was established by a modification of the Marsh test (Peterson, Haines, and Webster, *Legal Medicine and Toxicology*, pp. 225-226, W. B. Saunders Company, Philadelphia, 1923). It is not known whether the arsenic compound is the hydride (AsH<sub>3</sub>) or one of its methylated or ethylated homologues.

The gas was produced only in cultures containing the arsenate in concentrations ranging between 0.006 M to 0.0015 M; arsenite did not serve as a substrate. Fungal growth was inhibited at higher molarities; little arsine could be detected at lower molarities.

Although the implications of these observations are difficult to assess, the results indicate a marked capacity of *T. rubrum* for metabolic reductive reactions.

### APPEARANCE OF KANAMYCIN RESISTANCE IN A SINGLE PHAGE TYPE OF STAPHYLOCOCCUS<sup>1</sup>

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Received for publication August 31, 1960

Early in 1958, kanamycin was introduced for clinical use. Preliminary studies disclosed minimal

<sup>1</sup> Aided by research grant from Bristol Laboratories, Syracuse, New York.

resistance by staphylococci with no one phage pattern showing a predominant drug-resistance pattern similar to those previously reported with penicillin (Shaffer et al., *Pediatrics*, **18**, 750,