

BACTERIOLOGY

Chairman: GORDON MALETTE, American Society for Microbiology
MORRIS WAGNER, University of Notre Dame, was elected president
for 1965

ABSTRACTS

Virus-growth in Colchicine-induced, Micronucleated, Tissue-cultured Cells. THEODORE J. STARR and RICHARD G. CONSIDINE, University of Notre Dame.—The normal mitotic sequence of plant and animal cells can be altered by chemical and physical means. One impressive result of colchicine treatment of certain tissue-cultured cells is the structural disorganization of the interphase nucleus which apparently dissociates into a multitude of smaller units designated as micronuclei. The gross morphological changes associated with the formation of colchicine-induced, micronucleated cells are considered at both the cellular and chromosomal level. A voluminous literature attests to the widespread application of colchicine in biology, medicine, and agriculture. In sharp contrast, the biochemical capacity of micronucleated cells has received little attention. The micronucleated cell may provide a unique environment for study of host-parasite relationships, physiology of cell division and biochemistry of senescence. In this study, growth patterns of the agent of psittacosis, adeno virus, and vaccinia virus, within micronucleated cells, were compared to that obtained in normal cells. Observations were made on preparations stained with acridine orange fluorochrome. The gross cytochemical staining reactions associated with the agent of psittacosis and that of vaccinia within the cytoplasm appeared normal. The nuclear inclusion associated with adeno virus infection was usually present within most of the micronuclei of any single cell. The possible significance of these observations is considered.

Method of Producing a Fungal Immunological Response in Guinea Pigs to *Trichophyton mentagrophytes*. A. D. Chandler, Jr., Pitman-Moore Research Center, Indianapolis.—The objective of this paper is to describe a procedure for producing dermatophytosis in guinea pigs with a spore suspension of *Trichophyton mentagrophytes*, and to demonstrate an immunological response following reinfection. The course of the infection is described as four phases which occur chronologically as erythema, crust formation, alopecia, and hair regrowth phase.

The immunological response is demonstrated with slides showing the control pig and the reinfected pig in the four phases of the infection. Demonstration of the immunological response also is presented in a table showing measurements of the lesions in mm diameter at the peak of each of the phases.

The immunological response in guinea pigs to reinfection with *T. mentagrophytes* is characterized by a greater inflammation of shorter duration and smaller lesions of shorter duration than with the first infection.

The Toxicity of Azathioprine (Imuran) in Germfree ICR Mice.

G. R. FITZGERALD and M. POLLARD, Lobund Laboratory, University of Notre Dame.—Azathioprine is an analog of 6-mercaptopurine developed by Burroughs Wellcome and Co. as a possible chemo-therapeutic agent in the control of cancer. Preliminary work on its toxicity performed in this laboratory indicated a greater susceptibility among germfree ICR mice than among comparable conventional animals. Eleven daily injections, i.p., of 250 mg/kg of the drug in germfree animals were required to reduce the number of survivors to practically zero, whereas fourteen daily injections of the same dose were required in the conventional animals for the same effect. Moreover, under any given regimen of dosage, the germfree animals died, on the average, earlier than did the conventional animals. Possibly the germfree animal is more susceptible to azathioprine because it lacks a factor or factors provided to some extent by the microbial flora of the conventional animals. The germ-free animal thus provides an advantage in studies of the pharmacologic effects of drugs. We anticipate that further study of the action of this compound in germfree animals may provide a clue as to its mechanism of action.