

the leucocytes which, as pus cells, have been shown to contain a considerably greater amount of cholesterol than the normal leucocytes.

Analysis of empyema exudates showed that the greater part of the cholesterol is contained in the cellular portion of the exudate. The fluid portion of exudates contains even less cholesterol than normal serum or exudates in the pleural cavity which contain relatively few cells.

Since the activity of the leucocytes is an important factor in the resistance to and recovery from pneumonia, the association of the variation of the cholesterol with the activity of the leucocytes seems to indicate the rôle which cholesterol plays on leaving the blood serum in acute infections. Carried by the leucocytes to the site of the active inflammatory process, cholesterol is available for the neutralization of bacterial toxins and poisons arising from the disintegration of tissue and exudate in the process of resolution of the pneumonic exudate.

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**Effect of antipyretics on memory and behavior of albino rats.**

By **D. I. MACHT** and **WM. BLOOM**.

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Studies were made by the authors on the behavior of white rats in Watson's circular maze. All the drugs were administered by subcutaneous or intraperitoneal injections. The following drugs were studied; acetanilid, acetphenetidin, antipyrin, pyramidon, sodium salicylate, phenyl salicylate or salol and quinine sulphate.

Acetanilid was administered in doses from 1 to 5 milligrams and was found to produce depression. Phenacetin also produced depression but not to the same extent. Salol in small doses produced no effect; larger doses (5 milligrams) caused slight depression. Sodium salicylate caused slight depression. Quinine produced depression when administered in doses from  $2\frac{1}{2}$  to 5 milligrams. Antipyrin was found to be most depressing of all even when the doses were 2 milligrams. Pyramidon was also depressing but not to the same extent.

The following combinations were studied: acetanilid plus sodium bicarbonate, acetanilid plus phenacetin, sodium salicylate plus salol, phenacetin plus pyramidon, acetanilid plus pyramidon and salol plus acetanilid.

It was found that acetanilid plus phenacetin and salol plus sodium salicylate combinations gave a summation effect, whereas phenacetin plus pyramidon and acetanilid plus pyramidon exhibited synergistic phenomena. The most striking combinations were acetanilid plus bicarbonate of soda and acetanilid plus salol. In the case of each of these combinations acetanilid was not as depressent as when given alone.

The effect of opiates on the behavior of rats has already been published. Investigations are in the process of completion concerning the effect of the following drugs on the memory and behavior of rats in the maze: alcohol, caffeine and nicotine; cocaine and its decomposition products; digitaloid drugs and some others. Complete data concerning the antipyretics will appear in the *Journal of Pharmacology and Experimental Therapeutics*.

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### **Amicronucleate infusoria.**

By **LORANDE LOSS WOODRUFF.**

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It has generally been accepted that the dimorphic condition of the nucleus (macronucleus and micronucleus) is a diagnostic character of typical Infusoria, and, aside from a few primitive or aberrant species, the only apparent exceptions have revealed the micronucleus (or micronuclei) within the macronuclear membrane during vegetative stages. Recently, however, Dr. Dawson, working in this laboratory, described a race of *Oxytricha hymenostoma* Stokes which throughout several years of pedigree culture showed no indication of a morphological micronucleus.<sup>1</sup>

During the past year, the isolation for certain experiments of 14 "wild" lines representing 6 species of hypotrichous Ciliates revealed 7 lines (4 species) with micronuclei and 7 lines (2 species)

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<sup>1</sup> J. A. Dawson, "An Experimental Study of an Amicronucleate *Oxytricha*," *Journ. Exper. Zoölogy*, 1919, xxix, 473; 1920, xxx, 129.