

happened in some instances that, after repeated injections with cultures of one of the varieties of the dysentery bacilli, the animal's blood agglutinated the variety of bacilli not used for immunization in as great or even greater dilutions than it did the variety injected.

It was found that a serum drawn from a horse which had been immunized by repeated injections of the dysentery bacillus received from Shiga, agglutinated this bacillus in dilutions of 1 in 500. The same serum, however, agglutinated the mannit-fermenting bacillus in dilutions of 1 in 1,000. The serum from another horse which had received injections of the mannit-fermenting bacillus, agglutinated this bacillus in dilutions of 1 in 1,000, but also agglutinated the Shiga bacillus in dilutions of 1 in 500. Judged by these reactions, these two varieties of bacilli would appear to be much alike in their affinities. Indeed, Shiga and Flexner seem to have come to this mistaken conclusion. Duval and Bassett certainly fell into this error when they announced, in the fall of 1902, that the mannit-fermenting type from the Baltimore diarrhea cases and the Shiga type had identical agglutination characteristics.

The blood of young animals was found by the author to be comparatively free from bacterial agglutinins. A goat 6 weeks old was found to possess no appreciable bacteria-agglutinating substance in its blood. After four injections of a culture of Shiga dysentery bacilli, its blood in dilutions of 1 in 500 agglutinated Shiga bacilli, but only in dilutions of 1 in 10 the mannit-fermenting variety. A rabbit whose blood was negative before immunization, after six injections of this bacillus agglutinated the mannit-fermenting bacillus in dilutions down to 1 in 5,000. The Shiga bacillus was agglutinated only in dilutions of 1 in 20. The slight development of substances which agglutinated the mannit-fermenting type during the process of immunizing to the Shiga bacillus, cannot be considered as showing any affinity between the Shiga type and the fermenting type, since about the same increase was found in animals injected with nutrient bouillon and other substances.

**15. "Gastric secretion induced by a reflex from the intestine": HOLMES C. JACKSON.**

The main points in his results were summarized by the author as follows :

1. The introduction of alcohol into the intestine sets up a reflex which causes a secretion of gastric juice.

2. Section of the nerves which supply the stomach (vagi and sympathetic), or the administration of atropin, prevents this reflex, whereas nicotin has no such effect.

3. Of the substances other than alcohol examined in this connection, it was found that oil of peppermint also induces a reflex secretion, but that other irritants, such as mustard and ether, do not show this action.

4. Section of the nerves, or the administration of atropin or nicotin, followed by the introduction of alcohol directly into the stomach, gave results similar to those obtained when the alcohol was injected into the intestine.

**16. "The organism of smallpox," with demonstrations: GARY N. CALKINS.**

The author, after briefly describing some of the phases in the complicated life history of the smallpox organism — *Cytoryctes variolæ Guarnieri* — demonstrated twelve stages of the organism stained by an adaptation of the Borrel method, whereby the organism stains red upon the green background of cell body and nucleus. A similar parasite, as yet undescribed, in the macronucleus of *Paramœcium caudatum*, was also shown.

**17. "On respiratory stimulants," with demonstration: GEORGE B. WALLACE.**

A demonstration was made of a method for estimating the volume of expired air. A rabbit was used and the volume of air expired under normal conditions, and after the animal had been given a respiratory stimulant, was measured. The apparatus used was a modification of the one devised by Dreser. In the experiments reported by the author, the greatest increase in respiration occurred after administration of atropin, the amount of expired air being increased 75 %. Strychnin produced an increase of 35 %, caffein 9 %, cocain 7 %, aspidospermin and quebrachin (two alkaloids obtained from *Quebracho blanco*) 9 % and 17 %, respectively.

**18. "The intracellular reduction of gold chlorid," with demonstration: ALFRED N. RICHARDS.**

The author studied the effects of intravascular injections of the double chlorid of gold and sodium. His experiments were