blood corpuscles of the rabbit are injected into the pleural cavity of the dog, at the end of twenty-four hours an exudate is produced very rich in large mononuclear cells, and, in correspondence, the power of the cells to digest in an acid medium is greater than that of the twenty-four hour aleuronat exudate.

Lymphatic glands in the neighborhood of the inflammatory exudate, the substernal glands in the case of the pleura, contain at the end of three or more days in greater number larger mononuclear phagocytes similar to those found in the exudate at the same stage. Emulsions made from such glands digest in an acid medium and little if at all in an alkaline medium. The digestive power of these glands (measured in cubic centimeters of 1/10 *n* sulfuric acid) is constantly greater than that of glands such as the mesenteric some distance from the seat of inflammation.

	Exp. 1.	Exp. 2.	Exp. 3.	Exp. 4.
Substernal Glands	7.6 c.c.	11.45 c.c.	11.95 c.c.	12.2 c.c.
Mesenteric Glands	—	9.9 c.c.	8.75 c.c.	9.0 c.c.
Time after injection	1 day	3 days	4 days	5 days

The differences in degree of digestion are more significant when it is recalled that the activity of other proteolytic enzymes has been shown to vary in a proportion equal approximately to the square root of the quantity of the enzyme.

The phagocytic cells of an inflammatory exudate contain two enzymes. One of these ferments, characterized by its power to digest protein in an alkaline medium, is contained in the polynuclear leucocytes with fine granulation, and since it is derived from the bone marrow may be designated *myelo-protease*. The second ferment, characterized by its power to digest only in an acid medium, in this respect resembling the autolytic ferments of other organs, is contained in the large mononuclear cells of the exudate and is increased in lymphatic glands adjacent to the seat of inflammation; it may be designated *lympho-protease*.

31 (123). **"Experimental myocarditis. A study of the histological changes following intravenous injections of adrenalin":**[1] **RICHARD M. PEARCE.** (Presented by **EUGENE L. OPIE.**)

Intravenous injections of adrenalin in doses of one-tenth cubic centimeter, soon raised to five-tenths and given on alternate days,

[1] *Journal of Experimental Medicine*, 1906, viii, p. 400.

cause, in addition to lesions of the aorta, degenerative changes in the myocardium which are most marked after the fifth injection. The majority of the animals (rabbits) which recover from the early injections exhibit a fibrous myocarditis either focal or diffuse. These proliferative changes are not analogous to those occasionally produced experimentally by bacterial toxins, but resemble rather those following obstruction of the coronary arteries. It is essentially a process of repair following degeneration of muscle fibers. The latter is due apparently to temporary ischemia of terminal vascular territories at a time when the heart muscle exerts an increased contractile effort necessary to overcome the greatly augmented intra-vascular tension. Thus both nutritive and mechanical disturbances appear to play a part in its etiology.

32 (124). **"Stable and detachable agglutinogen of typhoid bacilli": B. H. BUXTON** and **J. C. TORREY.**

By heating an emulsion of typhoid bacilli to 72° C. for half an hour a detachable agglutinin may be separated from the bacilli. This may be obtained in the filtrate on passage through a Berkefeld filter. Rabbits, which have been inoculated on the one hand by this filtrate and on the other by the heated bacilli, which have been thoroughly washed, show specific differences in their serums, as regards agglutination. The animal inoculated with the washed bacilli or stable agglutinin, produces a serum which agglutinates normal typhoid bacilli very slowly and with the formation of fine clumps. In contrast to this, the filtrate containing only detachable agglutinin gives rise to serum which clumps normal typhoid bacilli rapidly and with the formation of large flocculi.

Absorption experiments show, furthermore, that the *s* or stable agglutinin and the *d* or detachable agglutinin are distinct in character, for the heated and washed bacilli absorb nothing from the filtrate serum, but absorb all the agglutinin for normal typhoid bacilli from the bacillus serum. On the other hand the filtrate absorbs nothing from the bacillus serum, but takes up all the agglutinin from the filtrate serum.

It has also been determined that the substance in typhoid bacilli which gives rise to precipitins for filtrates of typhoid cultures is split off from the bacilli, together with the detachable agglutinums.