of the casein preventing the formation of a solid coagulum. In cultures of the South Dakota organism, on the other hand, there is usually no visible change in plain milk for about three weeks, after which, in varying lengths of time, the fluid becomes solid. Some days after coagulation there is an extrusion of whey and finally peptonization begins, progressing very slowly however. *Bacterium phaseoli* produces tyrosin crystals in abundance in milk but none have been observed in cultures of the South Dakota organism. The latter produces a wide, deep yellow rim (Ridgway's primuline yellow loc. cit.) which is very striking.

Both organisms liquefy gelatin but *Bacterium phaseoli* does it rapidly whereas the South Dakota organism does it so slowly that for the first month there is little or no liquid gelatin present, evaporation taking place almost as rapidly as the liquefaction.

Another good medium for differentiating these two organisms is Congo Red agar. Both organisms take up the stain to a greater or less degree and finally change the agar to a purplish color but *Bacterium phaseoli* makes a very thick, smooth, wet-shining growth and the South Dakota organism only a very meager one. This medium is prepared as follows: 1000.00 c. c. distilled water; 10.00 g. saccharose; 1.00 g. dipotassium phosphate; 0.20 g. magnesium sulphate; 15.00 g. agar flour; 0.10 g. Congo red (Grübler's). Steam the water and salts one half hour, then add Congo red. Filter through cotton and tube. Autoclave tubes fifteen minutes at 115° C.

The bacterium causing the wilt is a polar flagellate rod 2-3 to 3μ by 1-3 to 1-2μ occurring singly or in pairs, and has been named *Bacterium flaccumfaciens* nov. sp.

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THE PERIPHERAL CIRCULATION IN MUSCLE INJURY SHOCK

The following experiments were undertaken in an attempt to determine the influence of the peripheral tone in the production of the low blood pressure initiated by muscle injury. Evidence has been presented by a number of observers indicating that the vasomotor center is still active in shock produced by the exposure of the viscera or aortic occlusion, and that some peripheral tone is maintained.[1] A recent paper by Erlanger, Gesell and Gasser[2] presents results of a series of experiments in which, in these types of shock, the condition of peripheral constriction was directly determined by the rate of perfusion through the arterioles and capillaries. They show that during the development of shock the peripheral resistance is increased, and that only after the arterial pressure has fallen is there a loss of vasomotor tone, and consequently that a loss of tone is not the primary cause of shock. Our results are in accord with these findings and are presented as evidence indicating that the nervous factor is of minor importance in the causation of the low blood pressure following muscle injury, as in other forms of shock.

The method of determining the relative condition of vasomotor tone was that described by Bartlett,[3] and used by Erlanger, Gesell and Gasser. The rate of inflow of a fluid at constant pressure through the femoral artery of one hind limb was determined at intervals during the development of shock. The inflow cannula was placed in a side branch of the femoral artery or low down on the main branch directed towards the heart. With this arrangement, through the use of clips on the arteries, it was possible to shift quickly from the natural blood supply of the area supplied by the intact branches of the femoral artery to the perfusion fluid and *vice versa*. The perfusion fluid was

[1] Porter: *Am. Jour. Phys.*, 1907, XX: 399. Porter and Storey: *Ibid.*, 1907, XVIII: 181. Porter and Quinby: *Ibid.*, 1908, XX: 500. Seelig and Lyon: *Jour. A. M. A.*, 1909, LII: 45; also *Jour. Surg. Gynecol. and Obstet.*, 1910, 146. Seelig and Joseph: *Jour. Lab. and Clin. Medicine*, 1916, I: 283. Mann: *Johns Hopkins Hosp. Bull.*, 1914, XXV: 205. Morison and Hooker: *Am. Jour. of Phys.*, 1915, XXXVII: 86.

[2] Erlanger, Gesell and Gasser: *Am. Jour. of Phys.*, 1919, XLIX: 90.

[3] Bartlett: *Jour. Exp. Med.*, 1912, XV: 414.

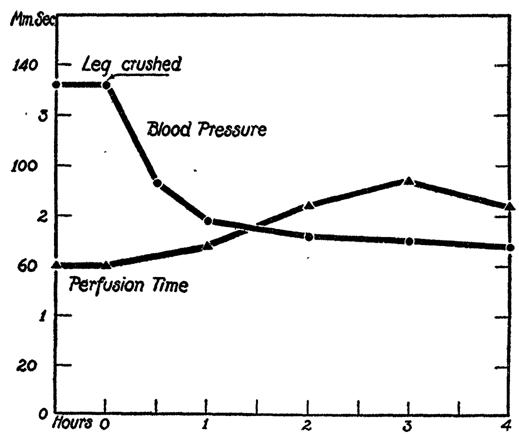
SUMMARY OF RESULTS SHOWING PERFUSION TIME FOR 1 C.C. OF PHYSIOLOGIC SODIUM CHLORID SOLUTION IN RELATION TO BLOOD PRESSURE IN MUSCLE INJURY SHOCK

Experiment	Control perfusion time, seconds	Maximal perfusion time, seconds	Period after injury, hours	Percentage increase	Perfusion time at end, seconds	Perfusion time after death, seconds	Original blood pressure, Mm.	Blood pressure at maximal constriction, mm.
8	5.2	12.9	0.75	144	4.7	....	140	90
9	2.3	3.3	1.0	43	2.9	1.8	130	16
10	1.4	2.4	4.0	71	....	1.2	140	74
12	1.2	2.7	4.5	125	1.1	0.8	130	68
14	0.8	1.5	1.5	87	1.0	0.5	130	60
15	1.3	3.7	1.25	185	....	1.3	120	72
16	1.6	4.0	3.5	150	....	....	135	78
18	2.7	4.0	4.5	48	....	....	125	65
19	1.5	2.5	6.0	66	....	1.1	135	42
20	1.4	2.5	....	78	....	....	130	92
21	1.0	1.7	3.0	70	0.9	0.6	130	60
Average	1.85	3.74	3.0	102	2.1	1.0	131	65

kept at a constant pressure by connecting the injection burette with a large bottle containing air at a constant pressure as indicated by a mercury manometer. A side tube on the burette connected with a bottle of normal saline solution served to refill the burette to the original level after each perfusion. In making a determination of the perfusion rate, about 3 c.c. of fluid was allowed to run into the artery while the time was being recorded with a stop watch. Such a determination required but a few seconds, and immediately after the clip on the main trunk was removed, thus allowing the part to receive its natural blood supply.

Cats, anesthetized with ethyl carbamate (urethane), were used. Shock was produced by the method described by Cannon.[4] The muscles of the right leg only were crushed, those of the left being left intact for the inflow measurements. In a few instances in which perfusion was interfered with by small clots forming in the vessels, the experiments were discarded. The condition of the vessels was tested by inflow determinations after death, when, if there is no obstruction, the rate of inflow is greatly increased. A blood pressure record was obtained from the right carotid by means of a mercury manometer.

A summary of the results is given in the table. The figures represent the time in seconds for the entrance of 1 c.c. of fluid, and in each case they are the average for at least three determinations. Frequently at the beginning of an experiment the readings indicated considerable variation in vascular tone, necessitating a number of observations to determine the control rate. Invariably there was a gradual increase in the time (*i. e.*, decrease in the rate) of inflow after muscle injury, usually starting within the first hour and reaching a maximum in from two to four hours. After this a dilation occurred which continued until the death of the animal and was accompanied by a further fall in blood pressure. As already stated, the perfusion rate was still further increased after death. A curve showing the general relation between the blood pressure and the tone of the blood vessels during the devel-



Curve plotted from the averages of six experiments showing the relationship between the perfusion rate and the blood pressure in muscle injury shock. As the blood pressure falls, there is a slowing of the perfusion rate, indicating an increased tone of the arterioles.

[4] Cannon: *Arch. of Surg.*, 1922, IV: 7.

opment of shock is given in the figure, which illustrates the averages of the six experiments which were carried out over a period of six hours or more.

From these results it is apparent that the low blood pressure initiated by muscle injury is not primarily due to a loss of vasomotor tone or to a dilation of the blood vessels. There is evidence[5] that a continued low blood pressure may ultimately result in an injury or depression of the vasomotor and other nerve centers, and it is probable that this explains the dilation of the peripheral vessels occurring some hours after the development of shock.

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THE LOUISIANA ENTOMOLOGICAL SOCIETY

THIS society has completed its second year. Starting early in 1920 with about 25 members, it now has 36 members. Including others who have indicated their desire for membership, it will have in 1922 at least 40 members. The membership is distributed as follows: New Orleans, 14; Baton Rouge, 11; Mound, La., 2; Tallulah, La., 1; and others outside Louisiana at various places from New York City to a point in Mexico.

Meetings have been held bi-monthly, except during the summer, throughout the year. The average attendance has been about 18. The following papers and talks have been given:

Work on malarial mosquitoes at Mound Laboratory, D. L. VAN DINE, U. S. Bureau of Entomology.

Beekeeping in Louisiana, E. C. DAVIS, Louisiana Experiment Stations.

Present status of cattle tick control in Louisiana, W. H. DALRYMPLE, Lousiana State University.

The plant lice or aphids, THOS. H. JONES, Louisiana Experiment Stations.

The camphor scale, E. R. Barber, U. S. Bureau of Entomology.

Plant quarantine at the port of New Orleans, EMILE KOSTAL, Federal Horticultural Board.

The European corn borer and the sugar cane moth borer: A Comparison, T. E. HOLLOWAY, U. S. Bureau of Entomology.

Entomological practice in Hawaii a dozen years ago, JACOB KOTINSKY, formerly of the Hawaiian Experiment Station.

The teaching of entomology, O. W. ROSEWALL, Louisiana State University.

Two moving picture films, "The Most Wonderful Insect in the World" and "Cotton's Worst Enemy—The Pink Boll Worm," were exhibited through courtesy of the U. S. Department of Agriculture.

The society is gradually acquiring an entomological library, which is housed at the Louisiana State Museum, Jackson Square, New Orleans. There are now about 40 books and about 500 pamphlets, largely the gift of Mr. D. L. Van Dine, of the U. S. Entomological Laboratory, Mound, La. Through the courtesy of Mr. Robert Glenk, curator, meetings are held at the museum and the moving picture projector is sometimes used. A very successful meeting was held at Baton Rouge in February, under the auspices of the members there.

Resolutions have been adopted during the year on the camphor scale in New Orleans, on financial assistance to the Division of Insects, U. S. National Museum, and on the campaign to control the Argentine ant in New Orleans.

At a recent annual business meeting the officers of 1921 were reelected for 1922. These are: *President,* Mr. Ed. Foster; *Vice-president,* Professor O. W. Rosewall; *Secretary-Treasurer,* Mr. T. E. Holloway; *Executive Committee,* the officers and Messrs. D. L. Van Dine, Chas. E. Smith and Thos. H. Jones.

The writer understands that certain members of the national societies look askance at the formation of local entomological societies, believing that these will draw members away from the larger organizations and result in a division of interest. This has not happened as a result of the organization of the Louisiana Entomological Society, and, on the contrary, the interest in entomology has been stimulated not only among entomologists but among other students of biology.

T. E. HOLLOWAY,
Secretary-Treasurer.

[5] See Cannon and Cattell. *Arch. of Surg.*, 1922, IV: 321.