The poison is extremely heat labile, being completely destroyed if heated to 55° C. for one hour. It can be preserved with only slight deterioration for at least two months, if kept in the dark at 4° C.

By intradermal injections of this poison in rabbits, we have been able to produce antiserums which neutralize it in vitro in multiple quantities, and, therefore, conclude that this dermatoxic poison is a true soluble toxin. To date we have found only traces of antitoxin in the serum of rabbits injected intravenously with the toxin.

In a series of eighteen toxin-treated rabbits, it was found that the skin reactivity to the toxin of any one rabbit was inversely proportional to the amount of antitoxin which its serum contained. Normal rabbit serums only occasionally contain any demonstrable antitoxin, and then only in very slight amounts.

By neutralization experiments it has been shown that the toxins from our four active strains are identical.

Lesions microscopically similar to those caused by the toxic filtrates can be produced by intradermal inoculation with young broth or agar cultures.

The size of the lesions of the different strains so inoculated seems correlated with their ability to produce toxin in culture.

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The germicidal action of milk.

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The so called germicidal action of milk has given rise to much discussion and controversy as to its extent, significance and even its existence. All workers are in agreement that the germicidal effect, if such exists, is only slight in action and transitory in occurrence after the milk is drawn from the animal. Some doubt its existence at all; some believe it to be effective so far as some organisms are concerned but to have no effect upon the typical milk bacteria; others believe in a bactericidal action, but hold that it may occur in the milks of some cows and not in others.

and may or may not appear in the milk of the same cow at different times.

Studies made by measuring the rate of increase in the natural fortuitous flora of fresh milk have, quite obviously, given contradictory results. When fresh milk is inoculated with known pure cultures, the results are still not definite as the germicidal effect is here complicated by the presence of the natural lag period, in the culture used as the inoculum, before rapid growth ensues.

It seemed to us that the problem could be got at more directly, and more definite information obtained, by the application of modern knowledge of the bacterial growth curve. As is well known, the freshly inoculated bacterial culture passes through a latent or "lag" phase before multiplication begins. It is also well known that transplants taken from a culture only a few hours old, while it is in the rapidly growing stage, will show no lag but continue multiplication at the same rate when seeded in suitable media. We therefore inoculated freshly drawn aseptic milk with young cultures in the period of rapid growth. For this purpose *Strept. lactis,* probably the most perfectly adapted milk organism, was used. Samples of milk were brought to the laboratory immediately after being drawn and placed in a water bath at 37° C. They were then inoculated from rapidly growing cultures three hours old at 37° C.; sterile milk being used as the growth medium from which the inoculum was taken. In these experiments control tests were also run by inoculating at the same time the same culture into sterilized milk (autoclaved) and incubating as in the case of the raw fresh milk.

TABLE I.

The germicidal action of fresh milk upon *Streptococcus lactis.*

	Number of bacteria per cc.		
	Beginning	1/2 hr.	1 hr.
Autoclaved milk	9,560	20,600	59,600
Cow No. 1	18,300	19,500	28,000
Cow No. 2	10,600	15,500	30,000
Cow No. 3	9,760	13,000	19,600
Cow No. 4	30,260	29,900	33,600
Cow No. 5	9,500	7,900	30,300
Cow No. 6	48,600	65,500	75,300
Cow No. 7	57,600	89,600	98,200
Cow No. 8	9,000	15,100	32,600

As was to be expected, no lag occurred in the sterilized milk inoculated from the actively growing young cultures. In the case of the freshly drawn raw milks, on the other hand, a slight but definite inhibitory effect upon the growth of the organism was found. In most cases a lag period of about one half hour was thus induced in the young inoculum, after which rapid growth followed.

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A further note on regeneration of the cut spinal cord in fish.

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In 1922 Koppányi and Weiss[1] reported in a preliminary note regeneration of the spinal cord in the fish (*Carassius vulgaris,* a small specimen 4-5 inches), and in the larvae of the salamander (*Salamandra maculosa).* Their method was complete section of the vertebra and cord in the high thoracic region. In one experiment three vertebrae were removed with their corresponding spinal cord. Regeneration occurred in both cases. Regeneration was evidenced by functional return in paralyzed regions and morphologically by histological examination. After the section, the animals were quiescent caudad to the section. Three weeks later the salamander larvae showed motility of the posterior portion. The motility slowly recovered until four or five weeks after the section when there was apparently complete functional recovery; their locomotion was coordinate and regular. During this period some of the salamanders metamorphosed. This confirms Loeb's statement that transection of the spinal cord in Axolotl does not prevent metamorphosis. Regeneration was less rapid in the fish, requiring six to eight weeks. There was apparent functional recovery, for swimming was coordinate, but the animals always lay upon the side and seldom swam in the normal position. Histologically, in conjunction with Kolmer, we traced the fibers across the section. These fibers were somewhat fewer in number than in the normal cord. They were mostly gathered in bundles although there was considerable interlacing.

[1]Koppányi, Th., and Weiss, P., *Akad. Anz.*, 1922, xii, 2.