mixtures, except when the serum and tissue fluids are tested in minute quantities or greatly diluted. If tested in the full strength in which they appear in the animal body, no amount of leucocytic extract added to them is able to overcome or to exhaust their antibactericidal power.

Attempts to lessen the antibactericidal power of serum and body fluids by neutralizing their alkalinity with boric acid, acetic acid and other weak acids, are occasionally partially successful. Acidulation of the non-bactericidal mixtures occasionally restores part of their bactericidal power. In no experiment thus far done however has more than a quarter of the original bactericidal power been restored by this means.

The mechanism of the antibactericidal actions of serum and tissue fluids has not been determined.

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On the lysis of tubercle bacilli.

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It was pointed out by Koch, and has since been confirmed by others, that an animal suffering from a chronic local tuberculous lesion is more resistant than the normal to inoculation with tubercle bacilli.

This heightened resistance has been studied by numerous workers. Calmette, for example, found that tubercle bacilli, injected into the subcutaneous tissues of tuberculous cattle, soon showed marked involution and degenerating forms, but that the bacilli did not completely disappear from the site of the inoculation and the neighboring lymph glands by the end of 120 days. A rapid lysis or destruction of the bacilli was not observed by these workers.

Recently Beycke and Much[1] and others have applied the Pfeiffer

[1] Beycke and Much, *Beitrag z. Klinik f. Tuberk.*, 1910, XV, p. 277.
Much and Leschre, *ibid*, 1911, XX, p. 405.
Kraus and Hofer, *Deutsch. med. Wochenschr.*, 1912, XXXVIII, p. 1227; *Wiener klin. Wochenschr.*, 1912, XXV, p. 1112.

technique to a study of this phenomenon. They have found that tubercle bacilli, injected into the peritoneal cavities of tuberculous guinea pigs, undergo rapid degeneration and a rapid decrease in number.

They interpret these changes as a rapid lysis of bacilli. If this interpretation is correct, it will necessitate a revision of current ideas concerning the resisting power of the tubercle bacillus.

We have repeated and extended their work. We have found that tubercle bacilli, injected into the peritoneal cavities of tuberculous guinea-pigs, will occasionally give the degeneration forms and the non-staining forms they describe; and that, under certain conditions, there may be a complete disappearance of the bacilli from the peritoneal fluids within as short a period of time as three hours.

Whether this disappearance is due to an actual lysis of the tubercle bacilli, or to other causes, we have not yet determined. As evidence in favor of lysis we have the observation that all of the normal control guinea pigs injected intraperitoneally with the test suspensions of tubercle bacilli have died from a fulminating type of visceral tuberculosis, within a period of from three to four weeks, while most of the tuberculous guinea pigs, receiving the same test doses, have survived for a longer period of time. A few of these tuberculous guinea pigs however have died within twenty-four hours after the intraperitoneal tests, suggesting an anaphylactic reaction.

We have obtained a similar rapid disappearance of tubercle bacilli from the peritoneal cavities of tuberculous rabbits, from tuberculous rats, and from tuberculous dogs. The mechanism of the phenomenon is now under investigation.

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The rôle of phagocytosis in involuting organs.

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In order to clear the way for a study of the transfer of protein in the involuting tail of the tadpole, it was necessary to reëxamine the rôle which has been ascribed by Metschnikoff, Barfurth,