The result of these tests was that the blood serum did not agglutinate either *B. coli communis* or *B. enteritidis* (Gaertner), but it markedly did so Microbe S. (1), this latter showing definite and distinct clumping within fifteen to twenty minutes; blood serum 1 in 60 and 1 in 100 agglutinated it completely within twenty minutes.

2. The second important point is this: A small guinea-pig was injected subcutaneously with about $\frac{1}{4}$ c.cm. of a forty-eight hours old broth culture of Microbe S. (1); next day it was quiet, showed a big swelling about the seat of inoculation, and did not take its food; the animal was found dead in about forty hours since injection.

On *post-mortem* examination it showed haemorrhagic oedema about the seat of inoculation—stomach, duodenum, and first part of jejunum pale and distended and filled with grumous fluid. This fluid on standing deposited flakes and turbid fluid; the flakes were composed entirely of detached masses of epithelium, so that we had here a condition like that found in cholera Asiatica.

From the blood of the heart and from the turbid fluid of the duodenum the microbe injected was isolated in great numbers. A blood culture was tested with blood of convalescent of July 31st, and showed distinct agglutination within thirty minutes in the same dilutions as above.

I received also on July 31st one agar culture of Liverpool virus.* This was used for studying and comparing it with the other microbes isolated from the stools and for agglutination test. As will be seen from the table, there is a distinct similarity in cultural respects between Microbe S. (1) and the Liverpool microbe. A difference between the two microbes—namely, S. (1) and Liverpool virus—appears in respect of agglutination, since the former agglutinated in a marked manner with convalescent's blood, whereas the latter showed under the same conditions a feeble reaction only. As a further important point it ought to be stated that the microbe, isolated in great numbers from the blood of the above injected guinea-pig, proved in cultural respects, as also in respect of agglutination, the same as the Microbe S. (1).

Subcutaneous injection of $\frac{1}{4}$ c.cm. of broth culture (twenty-four hours old) of the Liverpool virus into a large guinea-pig caused extensive gelatinous necrotic swelling in groin, abdomen, and chest, the animal after forty hours being quiet, off feed, and very ill. Exactly the same result was obtained in a companion large guinea-pig injected with $\frac{1}{4}$ c.cm. of broth culture of microbe S. (1).

E. KLEIN.

August 20th, 1903.

September 11th, 1903.

Since I sent in my report on the S. microbe and the Liverpool virus microbe I have made several series of comparative experiments which, I think, prove conclusively the identity of the two microbes.

The experiments are the following:

1. Both microbes injected subcutaneously separately into guinea-pigs cause the same kind of haemorrhagic oedema extending over large area.
2. Mice fed with either microbe (broth culture on bread) become ill and die in five to seven days, with the same *post-mortem* appearances.
3. Rabbits injected subcutaneously with either microbe developed extensive tumour; the animals are quiet and off food for several days, but are quite lively, and feed again by the end of the week.
4. Blood serum of a rabbit recovered, no matter whether S. microbe or Liverpool microbe has been used for injection, clumps in a marked manner a broth culture of twenty-four hours' incubation of both microbes almost instantly indiscriminately, that is to say, S. culture is clumped equally well by blood serum of S. rabbit or Liverpool rabbit, Liverpool microbe is clumped equally well by blood serum of Liverpool rabbit or S. rabbit.

E. KLEIN.

* The culture tube was sealed with paraffin, and, according to direction, was not to be used "later than August 17th, 1903."

A SPECIFIC SKIN ERUPTION IN PNEUMONIA.

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WHETHER owing to improved diagnostic methods or because the pneumococcus is really changing its habits, we have become accustomed to thinking of it as an organism by no means confined to the pneumonic lung, but as able to grow well in joints, in the pericardial, pleural, and peritoneal cavities, in the meninges of the brain and spinal cord, and freely in the blood, producing a disease indistinguishable often from other forms of pyaemia. I do not remember hearing of its growth in the skin producing there a definite eruption, and therefore think the following case worthy of record:

H. S., a pale man aged 20, was admitted to the Leicester Infirmary on October 22nd. He had pneumonia and pleurisy of the base of the right lung. Temperature was about 104°. He had much delirium. Three days later he was worse. His heart was dilated, and a crop of papules was observed on the upper part of the back. They were of a deep rose colour, circular and about 3 to 4 mm. in diameter, darker than the average typhoid spot, and disappeared completely on pressure.

On October 28th the first spots were fading and a second crop identical with the first had appeared. The man was now very ill and had extensive consolidation of the base of the left lung.

On October 31st the spots were observed to be pustular. A smear of the pus was stained, and the only organisms to be seen were pneumococci.

A small abscess behind the right ear was opened on November 3rd. A culture was made from the pus; the growth consisted of pneumococci and staphylococci. A film taken directly from a pustule on the same day showed also pneumococci and staphylococci.

I can make but few remarks on the phenomenon. The eruption seems to resemble that of small-pox to some extent, as it was first papular and then pustular; a vesicular stage was not observed. Infection with staphylococci followed, as often in variola. The abscess appeared too late to be in causal connexion with the eruption. The patient made a slow but good recovery.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PELVIC PATHOLOGY AND SEA-SICKNESS.

UNDER the influence of circumstances, certain pathological states are apt to be overlooked by medical men at sea when treating cases of sea-sickness.

It by no means follows that any case of vomiting occurring on the high seas is necessarily due to the fact that the sufferer happens to be on board ship. Especially is this so in the case of women subjects of a pelvic disorder to which they do not attach importance in connexion with their present ailment, and are naturally diffident about discussing it when being treated by the ship's surgeon for such a slight and common complaint as sea-sickness. The latter also, unless on his guard, is not likely to suspect extraneous causes and be content to run through the whole gamut of drugs and remedies in vain attempts to afford relief.

The following case is a typical example of this, and shows how a practitioner may be led astray, not so much by not looking as by not seeing:

Mrs. P., travelling to New Zealand, suffered continuously from sea-sickness, and none of the remedial measures usually employed seemed to have any effect. She had been rejecting everything taken into the stomach for over ten days—the weather during this time being sufficiently rough to account for it; there were other but milder cases on board—and the organ appeared to be in a state of acute irritation. There were no symptoms or signs pointing to a pathological condition, and beyond a "soreness," which could easily be attributed to constant vomiting, she complained of nothing. Nutrient enemata were resorted to in the hope of alleviating also the great thirst which existed, but even they set up a sort of reflex return.

On the twelfth day, while making her drink some thin water gruel so as to have something in her stomach to be "sick" with, I saw her actually vomit for the first time, and was immediately struck by its character—typically cerebral. Being quite certain that no cerebral mischief existed, she was asked, and consented, to have the pelvis examined bimanually, when the following conditions were found: Extreme congestion of parts, a badly torn cervix, an ovarian cyst, about the size of a hen's egg, on the left side, and finally a retroverted uterus.