

several such centres, especially those which are breaking down, takes place through the bloodvessels. The localized extension of the tubercle, he believes to be produced not only by the mechanism of the bloodvessels, but by the lymph and chyle channels, and by simple contact with a tubercular surface.

In the experimental part of the investigation, Friedlander's scepticism regarding the identity of inoculated tubercle with ordinary tubercle, is opposed. In conclusion, a case is adduced in which cheesy tubercle was introduced into the peritoneal cavity of a cat. First, where the omentum had adhered to the wound, and then on other parts of the parietal and abdominal walls, discrete tubercles had formed, which, when compared with tubercle from a phthisical subject, examined fresh, showed a perfect similarity.—*From the Centralblatt, No. 52, 1875.*

A. HILLER. *An Experimental Investigation regarding the Organized Nature of Contagia and Putrefaction (Langenbeck's Archiv, xviii).*—Starting from the view that the parasitic influence of micrococci organisms in septic infection will only be decided should it be possible to introduce these organisms into the animal body free from any chemical admixtures, Hiller isolated as perfectly as possible, by methods which he has previously described, bacteria of all kinds, sometimes cultivated by himself, sometimes from blood-serum, flesh infusions, urine, and other putrefying substances, and kept in distilled water. He found such bacteria could be cultivated when introduced into an appropriately prepared medium.

From 0.5–1.0 cub. centim. of the water, containing the different isolated bacteria, was injected daily for nine consecutive days into the subcutaneous tissue, or muscles, or into the veins of rabbits and dogs. In more than eighty such experiments, he never saw inflammation, suppuration and fever, or any prejudicial effect follow as a consequence, although there might be some passing œdema. Suppurating wounds sprinkled with these isolated bacteria, were not noticeably affected for the worse, and subcutaneous wounds did not suppurate, even when thousands of living bacteria were introduced into them. Notably, there never occurred after the most varied forms of application of these organisms to dogs and rabbits, any of those constitutional conditions which are known to complicate wounds. An inoculation which Hiller made on himself by subcutaneous injection into the forearm, with the exception of some œdema, was followed by little reaction. Accordingly, Hiller denies that there is any independent mechanical parasitic action, or that bacteria can thrive in living and healthy tissue, or blood. He considers that he has refuted the objection, that in his experiments he had always injected “innocuous” and never purely “pathogenic” bacteria.

Thus Hiller, after an examination of all the results hitherto

obtained, will not allow that bacteria have any other rôle in septicemia than that of being in virtue of their smallness, ubiquity, and special relation to septic action, a frequent, nay constant accompaniment of constitutional wound-complications, as has been shown by anatomical investigation; that they further act as carriers of the septic poison, inasmuch as they imbibe the poisonous substances of putrid matter, and can thus produce inflammation, abscess, and gangrene; finally, that they "perhaps" produce or reproduce the septic poison, the possibility of their doing so, not being excluded by the isolation experiments.

In his experiments regarding putrefaction, Hiller found that a number of eggs, into some of which he injected, with proper precautions, fluid with bacteria isolated from putrefying substances, and into others, fluid with bacteria cultivated for the purpose—fifteen drops being injected—remained fresh after 10–14 days, but putrefied rapidly when air was admitted. He concludes, with Billroth, that bacteria are in themselves incapable of decomposing albumen by assimilation. He believes that in atmospheric dust, besides bacteria and other living germs, there must be other dead, corporeal, and organic matter, which constitutes the ferment of putrefaction, which might be either a ferment formed from cells or protein substances in the act of decomposing, as Liebig imagined. He proves this by the following experiment:—He poured boiling distilled water on dust collected in his room, and allowed hen's eggs to soak in it, and added it to a solution fit for the development of bacteria, but which contained none. Of the four soaked eggs, only two putrefied, one quickly, and one slowly; whilst bacteria isolated from the abundant development which took place in the solution, were injected into eggs without producing putrefaction. From the fact that the dust-infusion itself after several days showed signs of putrefaction, with development of bacteria, vibrios, and afterwards infusoria, Hiller concludes that atmospheric dust must, in fact, contain putrefiable substances.—*From the Centralblatt*, No. 49, 1875.

THE *Journal of the Scottish Meteorological Society* contains an elaborate paper on the Influence of Weather on Mortality from different diseases and at different ages, by Mr Buchan and Dr Arthur Mitchell. The field of observation and study is London, where a very large population occupies an area so small that the climate may be held to be the same for all. A great number of facts are brought out, which it would be very difficult to generalize further than has been already done by the authors. The highest death-rate is in January and December, the lowest in June. Smallpox causes most mortality in May; measles in December and January; scarlatina in October; whooping-cough in April; typhus fever in January, February, and April; and typhoid in November and December. Diseases of the bowels and cholera are common-