Results of the Injection of Parasitic Spores into the Blood of Animals.—The interesting discoveries of Hallier, Zurn, Chanveau, and Davaine, that there is contained in the blood, in several contagious diseases, numerous parasitic growths, known as micrococcus, mycothrix, leptothrix, etc., have stimulated further investigations in this comparatively new field; among the more recent of which, are those of E. Semmer, prosector at the Veterinary Institute at Dorpat, reported at length in Virchow’s Archiv for April 16, 1870. His experiments consisted first in the repeated examinations of the blood of animals which had died of contagious diseases, with the view of detecting therein any parasitic growths, and his results may be briefly summed up as follows:

In cases of glanders, micrococcus-cells and bacteridæ are found in the blood, lymph, and pus, in animals which have died of this disease.

In charbon (malignant vesicle), and septicæmia, the blood is found to contain numerous micrococcus-cells and bacteridæ (micothrix and leptothrix), both in the form of simple filaments and arranged together so as to form a chain, the latter growths having been long known under different names.

That these infusoria, having the form of slender cylindrical filaments, really are parasitic growths, was proved in the case of five pigs, which had died of septicæmia.

In the blood of these animals, the actual growth of the filaments from the micrococcus-cells was demonstrated under the microscope. The bacteridæ seen in cases of charbon are, for the most part, shorter, more slender, and have a less distinct outline, than those found in septicæmia, where they vary in length, and consist of a single well-defined filament, and are, at the same time, less numerous than in the former disease.

These filaments, however, are not always of the same form, even in charbon, for here also variations are noticed, so that, at times, the parasitic growths in this disease resemble, both in form and size, those found in septicæmia.

These parasites, moreover, are found in other diseases characterized by blood-poisoning, and even in the blood of some healthy animals a few micrococcus-cells (penicillum glaucum) have been found, and in other cases both leptothrix and micrococcus (bacteridæ) have been seen in the liver and intestines.

In order next to determine whether the contagious diseases above referred to are really caused by the parasites found in the blood, the author has tried a series of experiments, with the following results:

Penicillium-spores, of the size of a red blood-corpuscle, were
mixed with distilled water, and then injected by means of a small subcutaneous syringes into the jugular veins of two colts. The animals remained perfectly well, however, after the injection.

Several weeks later, micrococcus-cells were injected into the same animals, and here again the injections were not followed by any symptoms of disease.

Injections of anthroccoccus-cells were likewise followed by negative results.

A second series of injections was next made with large masses of the spores of penicillium glaucum. In these cases, slight feverish symptoms were created, which soon disappeared, however, and, upon an examination of the animals after they had been killed, all the organs and textures of the body were found to be quite normal.

The author next injected bacteridæ from the blood of an animal affected with charbon, using in this instance a bottle with a glass tube attached, as recommended by Hallier.

The spores of this parasite were put into distilled water, and a few drops of this mixture were then forced into the jugular vein of a colt. At the end of five days the animal remained, to all appearance, quite well.

Five days after the first injection, two ounces of the same fluid, containing bacteridæ and micrococcus-cells, were thrown into the jugular vein of the same animal, by means of a large syringe, armed with a small needle-like canula. This was followed by symptoms of fever, without loss of appetite, and the animal appeared soon to recover. On the tenth day after the inoculation, however, fever again set in, the appetite failed, the animal exhibited an unsteady gait, and died during the night.

The following was the result of the autopsy:—

In the neck, around those spots where incisions had been made for the purpose of injections, the connective tissue was thickened and infiltrated with serum, exhibiting here and there ecchymosed patches. The jugular vein was filled with a dark-coloured blood of the consistence of tar, but otherwise not changed. Lower down on the neck there was well-marked serous infiltration in parts remote from the point of injection.

On the left shoulder there was extensive extravasation of blood beneath the superficial integument, involving the connective tissue, and extending down beneath the muscles. In the abdominal and thoracic cavities and pericardium slight serous exudation. Numerous ecchymosed patches in the peritoneum, intestines, pleuræ, heart, and lungs. Spleen enlarged, friable, and gorged with blood. Liver of a yellowish-brown colour, and the microscope showed beginning fatty degeneration in this organ. Kidneys studded with large, yellow, hardened and congested masses; while fatty degeneration of the epithelial cells of the uriniferous tubules communicated a yellowish-gray colour to these entire organs. Lymphatic glands enlarged, softened, and several were of a brownish-red colour,
caused by extravasation of blood. Brain and spinal cord infiltrated with serum, while the minute bloodvessels were distended with blood. Ventricles filled with a clear, colourless liquid. The blood was everywhere of a dark-brown colour, of the consistence of tar, and contained large numbers of parasitic growths, characteristic of charbon.

Here, then, charbon was produced in a colt by the injection of parasites taken from the blood of animals affected with that disease. In this instance the symptoms broke out on the ninth day after the injection, death occurring on the tenth day.—Dr A. H. Nichols, in Boston Medical and Surgical Journal.

Arsenic in Irritative Dyspepsia.—Dr J. C. Thorowgood, in the Practitioner, speaks highly of the action of arsenic in many diseases of the stomach. He has found that one-drop doses of Fowler’s solution in half an ounce of infus. calumbæ had the effect, in a case he treated, to allay the pain, to stop the vomiting of the food, and to enable the patient to eat and digest small quantities of mutton. He states that the small irritable tongue, with projecting papillæ and yellow or gray fur, indicate arsenic. The more purely local the gastric symptoms, the better is the chance of arsenic doing good.

When there is much general exhaustion of system, with disordered urine or hepatic congestion, it does not promise much.

[We can confirm this account of the good effect of arsenic in irritative dyspepsia.—Ed. Edin. Med. Jour.]

Subcutaneous Injections of Arsenious Acid in Skin Diseases.—Dr Lipp publishes, in the Arch. für Dermat. und Syph., Nov. 3, 1869, two cases of psoriasis and three of chronic eczema, which were cured by hypodermic injections of arsenious acid. In the former the result of the injections was satisfactory, after the internal use of Fowler’s solution had failed. The cases of eczema are not so conclusive, as other means besides the injections were used. In the first case of psoriasis, eight grains of arsenious acid were injected in forty-eight days, and in the second, four grains in thirty-eight days. The author gives minute details respecting the phenomena observed during the injections, and states that he does not mean to infer from so few cases the superiority of the injections over the internal use of arsenic; but he merely observes that in favour of the former he might mention—the certainty of absorption, the non-interference with the organs of digestion, the small doses used, and the short treatment. As quinine and other remedies are now frequently injected, a time will probably soon come when the stomach will rarely be troubled with medicinal substances.