

test tubes. A number of these were then inoculated with virulent fowl tubercle and others with virulent mammalian tubercle, and they were placed into the incubator. After some time there was a distinct growth in the tubes inoculated with the fowl tubercle, but no apparent increase in the number of bacilli in the tubes which had been inoculated with mammalian tubercle bacilli, although they were kept for three weeks in the incubator.

Mr. Paterson then proceeded to try the effect of this serum on healthy rabbits and guinea-pigs, and he injected three cubic centimetres into the subcutaneous tissue of these animals. This was followed in a few hours by a marked rise of temperature, the rise in some cases reaching 3° F. Twenty-four hours afterward there was a thickening at the seat of the injection and extending for some distance around this point. The injection was repeated once a week until fifteen cubic centimetres of serum had been introduced in all. During this period the animals lost weight, and this emaciation continued to progress for four or five weeks after the cessation of the injections. Sections made from the swelling resulting from the injections of serum were found to consist almost entirely of round cells, epithelioid cells, and a few large multinucleated cells. At other points the sections showed small foci having all the appearances of caseation, while at others the cells were undergoing a degenerative change, as shown by their staining very faintly. Apart from the caseation, continues the author, these appearances denote the presence of a chronic inflammation only, but the caseation and degeneration reveal the presence of some substance deleterious to the cells of the inoculated animal, and that this deleterious property does not belong to the normal serum of fowls was shown by injecting normal serum in similar doses into rabbits. These injections produced a very slight rise of temperature and very little swelling, but nothing similar to the degenerative changes previously noted.

The author then tried the effects of the

serum on tuberculous animals. A number of rabbits were inoculated by the anterior chamber of the eye with virulent mammalian tubercle bacilli. Two weeks later two cubic centimetres of the prepared serum were injected subcutaneously, and this amount was repeated every week for four weeks. At the end of this period the affected eyes were acutely inflamed, the iris in some cases looking like granulation tissue. After the injections ceased this condition of intense inflammation improved, and a month later the pupils were distinct and the redness had disappeared from the iris, scattered over which a few yellowish specks could be seen. For five or six weeks the eyes remained in this condition, there being no apparent increase in size or number of the yellowish specks situated on the iris. The injections of serum were then begun again, the dose being two cubic centimetres, and repeated weekly for three weeks. As a result of this the nodules on the iris increased in size, but there was no development of any fresh foci. Six months from the injection of the mammalian tubercle into the eyes, the animals were killed. On examination the bodies were found to be well nourished, and, excepting for the tubercles in the eyes, the animals were free from tuberculous infection.

The results of these injections show, says the author, that the serum when injected into a tuberculous animal tends to limit the extension of tuberculosis to parts other than those primarily involved, as is shown by the absence of any tuberculous disease in the internal organs. Even in parts where the disease has become established before the serum is introduced it has a pernicious influence, as in none of the infected eyes did the tubercles exceed seven in number, although two cubic centimetres of an opaque watery suspension of virulent mammalian tubercle bacilli had been injected and six months had elapsed between the primary inoculation and the death by killing of the animals. The intense inflammation in the eyes during the period of the first