

of 1887, at the Bacteriological Laboratory of Edinburgh University, by Dr. Alex. Edington. Eight different organisms were isolated. A streptococcus, provisionally specied as *rubiginosus*, was found in 20 per cent. of the original tubes inoculated with scales from scarlatina patients during the stage of desquamation, or from the blood, and is apparently identical with Dr. Klein's streptococcus scarlatinae. A bacillus was found to be present in the scales in every instance when examined after the third week, and in every case the same bacillus was found in the blood during the first three days of the fever. Rabbits and calves were successfully inoculated, producing a disturbance and appearance resembling scarlatina in man. The conclusions formed were that this bacillus (called *B. scarlatinae*) was the specific cause of scarlatina, and that the other organisms were "merely concomitants, and pass into the blood only after the vitality of the system and tissues has been lowered by the entrance of this specific organism."

In September last I inoculated test tubes of potash peptone gelatine from several cases of scarlatinae, using sterilized capillary tubes, to which about an inch of the original glass tubing remained, this part being plugged with cotton wool; the finger from which the blood was taken being previously covered with lint saturated with a 20 per cent. solution of carbolic acid. In the first case the blood was examined about the beginning of the fourth day of the disease. The tubes, on being incubated, were all found to be sterile. The blood of another child in this family was examined on the second day of the disease, when almost a pure culture of Edington's bacillus was obtained.

On Oct. 13th, 1887, similar cultivations were made from a child, five years of age, suffering from scarlatina, on second day of fever; and also from her sister a few days later. The same bacillus was procured. The lower limb of the first child was in accordance with Edington's method of securing the desquamation, wrapped in sterilized cotton wool, after being cleansed and disinfected. The scales procured on the twenty-second day gave an abundant culture of the same bacillus, associated with micrococci. The character of this organism, as you can ascertain from an examination of these stained specimens and cultures, are distinctive. Dr.

Edington's description appeared in the *British Medical Journal* of August 6th, 1887. The bacillus, which is motile, is from 2 m. to 5 m. in length and 4 m. to 5 m. in breadth; it is markedly aerobic, grown on jelly in the incubator at from 18° C. to 23° C., it will form a pellicle at the surface in from 24 to 36 hours. The time in which the pellicle will form, and the rapidity with which it will liquify the gelatine, is less, where the material used is the last of a number of successive inoculations from tube to tube which increases its activity. The pellicle forms more readily on bouillon, is semi-transparent, looking like parchment, very firm, and formed by the interlacing of the bacilli into a felt-like membrane, it now becomes wrinkled, and the margin may be pushed up the side of the tube ovoid; spores then form, and in three or four weeks the pellicle will disappear. It grows rapidly on milk and on potato, forming a citron-white pellicle, which becomes darker in color; grows less readily on agar-agar, and poorly on blood-serum. On plates the growth is characteristic. The colonies grow for a day or two before the gelatine begins to liquify; this occurring first in the centre, and proceeding outwards, the bacilli then become motile, and later assumes the form of *Leptothrix* filaments. The colony then has the appearance of three zones—*Leptothrix* in the centre, actively multiplying bacilli at the margin, and motile bacilli at the edge of the liquified portion.

The point of chief interest is the fact that the bacillus is found in the blood only up to the third day of the fever, and not in the desquamation until the twenty-second day. The rapid growth of the bacilli is in harmony with the short period of incubation of scarlatina, and the finding of the bacilli in the scales is in accord with their well known infectiousness; and the prolonged duration of their infective powers is explained by the tendency to spore formation, even in the blood, which characterizes the bacilli. The practical utility of this addition to our knowledge concerning scarlatina was demonstrated by Dr. Jamieson,—at whose suggestion the experiments were carried out,—even before the discovery of the real nature of the contagium, from the fact that by applying antiseptic remedies to the throat in the earliest stage, bathing the surface, and applying carbolized ointments as soon as desquamation began, he was enabled,