THREE CASES OF BUBONIC PLAGUE ARISING IN ENGLAND.

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As has been reported in the public press, two certain cases, and one probable, of bubonic plague have been treated at the Bristol Royal Infirmary.

The first was a lad, J., aged 16. He was admitted under my care on July 30th, sent in with a diagnosis of strangulated hernia. He had been well in the morning, went for a cycle ride, but was taken suddenly ill with pain in the right groin and vomiting. I saw him late at night. He was obviously very ill, pulse 126, temperature 103°, respirations 24. There was an intensely tender swollen lymphatic gland in the right groin, with nothing on the leg, genitals, or perineum to account for it. He was extensively flea-bitten.

I instructed my house-surgeon, Mr. Hayman, to make multiple incisions into the inflamed area around the gland, and passed him over to the care of my medical colleague, Dr. Edgeworth. My house-surgeon sent the cultures to Dr. Walker Hall for bacteriological examination, but it was not till two days afterwards that Mr. Hayman and I specially asked that plague bacilli should be looked for. Eventually they were found. The patient's further progress will probably be reported by others. He is now at a fever hospital, nearly well.

The second case, O., was a boy aged 10. He was admitted to my ward on August 1st with an inflamed gland in the right groin, a temperature of 103°, pulse 120, respirations 36. He did not look very ill. There was no obvious cause for the glandular inflammation. He had been laid up for one day previously. The temperature rapidly fell, the gland improved, and on August 5th he went home. This case has not been proved to be bubonic plague, and it would never have been suggested if it had not been that Dr. Edgeworth discovered that his father worked at the same factory as the lad J.

The third case was the one that definitely established the diagnosis, which in the other patients had been only a suspicion. A man, S., aged 23, was sent to my ward on August 5th diagnosed as appendicitis. He had been taken ill on the previous evening with pain in the right lower abdomen and groin, and had vomited four times. I saw him in the afternoon. He looked prostrate, restless, and anxious. The breathing was jerky, but not hurried. The temperature was 100°, pulse 96, respirations 24. There was great tenderness and rigidity in the right iliac fossa, but also an enlarged and tender gland in the right groin, with oedema round it, and no source in the leg, genitals, or perineum. He was covered with vermin.

After careful consideration I decided that, though it was probably plague, it was highly desirable to clinch the diagnosis by examining an excised gland, and as there was some possibility of its being appendicitis, and he had to have an anaesthetic anyhow, I explored and removed both the appendix and the gland. The appendix contained oxyurides, but was otherwise normal. The gland was soft, red, and swollen, and not suppurating. My house-surgeon stained a film, which we found full of bipolar bacilli. Dr. Walker Hall definitely established our diagnosis of plague a day or two later by cultural and animal inoculation experiments. The patient is recovering, but has a great sloughy hole in the groin (August 17th).

The patients S. and J., and the father of O., all work at a rag factory, full of rats and fleas, in a poor part of the city. No further cases have arisen, as far as I know, from August 5th till now (August 26th).

One can only speculate as to the source of the infection. No doubt further light will be thrown on this in due course. Plague bacilli have been demonstrated in a rat found dead in the factory. My own theories have been three:

- (a) *Infection from the rags.* The patients, however, tell me that the rags do not come from abroad.
- (b) *Infection carried by rats escaping from ships entering the port.*
- (c) *Deliberate inoculation of city rats by an enemy.* If this last theory is correct, it is probable that other towns may have a visitation of rat plague, with human cases following.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ON THE USE OF PETROL FOR CLEANSING WOUNDS.

PETROL has been used for the first cleansing of wounds for over twenty years in the hospitals of Toronto, Canada, in their emergency wards in which accident cases are dressed; such cases include street, railroad, and machinery accidents, and have contused lacerated wounds with much dirt ground into them. Petrol has given excellent results in the cleaning of these wounds, probably through its fat-solvent action in removing tissue debris and particles of fatty tissue to which dirt clings, as well as dirt itself.

As wounds received at the front are contused, lacerated wounds, and come in a very dirty condition, it seemed worth while to try petrol in cleaning them; the method used in this field ambulance for the first cleansing of wounds is as follows:

The skin, and then the surface of the wound, is cleaned by vigorous rubbing with a swab of absorbent cotton soaked in petrol. Swabs of cotton are wound round an artery forceps or probe and soaked in petrol, and with them the wound is cleaned from the surface inwards as far as the forceps can be pushed. The forceps is rotated and pushed in all directions, a number of swabs being used, and the process is continued until a couple of swabs come out perfectly clean.

If there is much dried blood or gross dirt on the surface of the skin or wound, it is best removed with warm water and soap, and a brush if necessary, before the petrol is used.

The petrol does not cause any special smarting, and patients did not complain of it when questioned. If petrol is left wet on the skin and jaconet or adhesive plaster strips close together are applied over the dressing, preventing evaporation, blistering of the skin will occur, but otherwise this does not occur.

Petrol used in the manner described certainly seems to clean up the surface, and particularly the depths of wounds better than any other method we have tried. Many of the wounds, by shrapnel and fragments of shell or bombs, have small openings on the surface, but extend deeply for several inches, the tract being filled with a blackish mass of dirt, blood, and necrotic tissue. After cleansing such a wound by petrol as described above, this is all dissolved out, and a clean open track is left extending to the depth of the wound, which hardly requires drainage.

As to the results of this method of treatment it is more difficult to speak. Wounded cases dressed in a field ambulance are practically all evacuated within twenty-four hours, only very slight cases being kept for treatment, and it is practically impossible to follow up cases and compare the results of the petrol treatment with other methods. Those cases which we have dressed again on the following day seemed to do very well. As a rule the track of the wound seemed quite clear from suppuration; there was scarcely any inflammatory areola, and any discharge present did not appear to be infective pus.

The conclusion came to was that petrol was a most efficient means of cleansing wounds, especially the depths of punctured wounds, and that the removal of so much dirt and tissue debris must be beneficial. Very little petrol is used in the process, and it can be carried about conveniently.

It might be well, therefore, if this method were given a more extensive trial for the first cleansing of wounds as soon after being received as the condition of shock and hæmorrhage will permit, and if such cases were followed up and the results noted and compared with those from other methods.

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A SUM of £20,000 is to be spent during the next three years by the American National Association for the Study and Prevention of Tuberculosis in an effort to control the spread of the disease. More than fifty towns and villages, with populations ranging from four to ten thousand, have been suggested as possible places for the experiment. Dr. Edward R. Baldwin of Saranac Lake, President of the Association, is chairman of a committee appointed to select a place.