TWO CASES OF "CHARBON" OR "MALIGNANT PUSTULE" DIRECTLY INOCULATED FROM A COW SUFFERING WITH "SPLENIC FEVER." RECOVERY.¹

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ON April 30th, 1884, a cow at Swynshed was observed to be ill. The veterinary surgeon saw it, and, beyond that it was very feverish, failed to diagnose any special disease. The owner killed it the same evening, as it was fat, and it appeared no better. The animal was killed, dressed, and skinned by two men in middle life—one a small farmer, fond of alcohol in all forms, the other a labourer of moderate habits. The cow was fat, and the meat looked good; but they noticed the spleen was very much enlarged, and the lungs looked dark. In the night, a dog and cat who had eaten some of the entrails died, and then another dog died. This alarmed the owner of the cow, and he sent down to the veterinary surgeon, who ordered them to bury the beast as it was, without delay. A blacksmith in the village, seeing the preparations for burial, begged hard for a piece of the meat. A large piece was given to him, on his promising to cook it well; no harm resulted.

On March 11th, both the men who had dressed the cow came to me. One, the farmer, said he had had a pimple on his right arm on the outer aspect of the elbow; the other, the labourer, that he had had a scratch on the back of the forearm, just above the wrist, at the time of their killing and dressing the beast. They stated that both pimple and scratch had gradually become worse from the first day, and were in considerable alarm, although knowing nothing of splenic fever or malignant anthrax.

They were both typical cases of charbon, as far as I had read of the disease; and now that Mr. Morratt Baker's coloured plate has appeared in our JOURNAL, you will all readily follow my description. In each case, there was a black shrunken eschar, from an inch to an inch and a half in diameter, round, surrounded by a raised zone of blebs or vesicles; in the farmer's case, by two or more concentric zones of vesicles. The sunken eschar was quite black, hard, and dead, without the streaks shown in the coloured plate. In the free-living farmer's case, the charbon was just above the elbow; the whole of the arm and forearm was erythematous, and enormously enlarged and infiltrated with serum, and the cedematous brawny feeling extended to the pectoral aspect of the chest. With the labourer, the zone of vesicles was single, the erythema was slight, and there was little of the infiltration; but the surgical progress of the charbon in each case was at the same rate. The farmer had high constitutional disturbance, the labourer very slight.

I determined to treat them both exactly alike surgically, and injected under the eschar a hypodermic syringe-full of pure carbolic acid. This was done with great ease, the needle passing under the eschar, and raising up the eschar with the fluid. The men were taken home, about three miles, and, in the evening, I called on them, seeing the farmer first. Not thinking the acid had done enough to stop the malignancy, I cut down through the eschar and zones, and poured pure carbolic acid into the wound. There was free bleeding for a short time. The arm was then enveloped in carbolic water dressing, applied rather warm. The labourer's arm was already rather better, or appeared so; but, as I had determined to treat them alike, I cut him also, and poured the acid in. The malignant process was stopped from that time, and gave me no further trouble. The slough and eschar very slowly separated, and the wound rapidly healed. The pulse and temperature were not high in either case; the bowels and kidneys acted well, and there was no albumen in the urine. Till nervous symptoms supervened with the farmer, he did not suffer, except from fright, and then I have no doubt he drank a good deal of stimulants. In three days, high nervous constitutional irritation developed; he could not sleep; and, on the fourth day of treatment, he had a severe convulsion, with opisthotonos, became unconscious, and, for twenty minutes, was believed to be dead. It merely heralded a sharp attack of delirium tremens, which caused considerable trouble and anxiety, and, perhaps, did some damage to the arm, as a large slough formed round the arm, and secondary abscesses showed in the forearm below the eschar. But the original black eschar and wound followed the same course in the two men, though one was compara-

tively well, and the other fighting for his life. Even when the farmer was still very ill with the delirium, the eschar showed, on the same day as the labourer, the first line of demarcation between the living and dead tissues. The wounds have healed satisfactorily in both cases, though the extent of the secondary slough and abscesses have prolonged the final healing with the farmer.

The diet differed considerably in these cases. The labourer had milk for a day or two, but soon resumed his ordinary pork and pudding diet, and had very little stimulant, chiefly a little stout. He did not suffer with craving or sinking, or any feelings of exhaustion. The farmer had rich beef-tea, soup, etc., and I fear a large quantity of stimulant. All I know is, the more he had, the worse he was. Both men smoked freely.

The question will arise, whether the Guy's hospital treatment by immediate excision, or the one I followed, is the better. Both are easy; and if I had no needle-syringe and carbolic acid with me, I should not hesitate to excise even with a sharp penknife. Pure carbolic acid poured into a deep wound produces a thick slough of its own; and I am not sure whether the large slough in the farmer's arm was not partly caused by the acid running in the connective tissue between the superficial and deep fasciæ. But that might equally have happened if I had excised; for he was so violent in the convulsion, and subsequently for days in the delirium, that it was next to impossible to prevent him from injuring his arm. As far as I could see, it had very little effect upon the disease. It pursued one steady definite course till destroyed, and separated and sloughed like any other ordinary eschar, except that the healing process showed no languor, as a burn would have done.

Perhaps one of the most interesting facts of my case is the knowledge of the exact date of infection and subsequent progress of the charbon. It was the twelfth day, as in Mr. Morratt Baker's case, when the men were sufficiently alarmed to apply to me. The black eschar had been slowly growing for some days; but, as far as I could ascertain, the zone of blebs and the erythematous infiltration only came on the day before application.

I had heard from a large grazier that he had lost a cow with splenic fever a few weeks before, and also that some cases had occurred in Northamptonshire, a few miles to the west: and had begged him to give me information of any further cases.

The "splenic fever" of horned cattle and the "symptomatic anthrax" are two very different diseases, characterised by a special bacillus in each case; and both are extremely and rapidly fatal. The latter is the "black leg," or "black quarter," common in young beasts which are supposed to be fattening too rapidly. My grazier friend informed me that his cow seemed to suffer much, and lowed or groaned till it died. The Swynshed farmer assured me, and the veterinary surgeon corroborated him, that, beyond the fact that they could see the cow was ill and feverish, nothing could be discovered. In both, however, the spleen was enormously enlarged, and the lungs highly congested. Animals die very rapidly with true splenic fever; generally, I hear, in less than twelve hours. In "black leg," they are more often found dead than seen ill. The grazier assures me that black leg always "cross-quarters" the animal; that is, it will proceed from the right fore leg to the left hind leg, and *vice versa*. It appears to be a low form of erysipelas, with exudation of a blackish fluid under the skin and crackling emphysema. I have heard of some cases being cured by a large seton, and the general prophylactic is a "rowel." In Mr. Morratt Baker's paper, he alludes to the exemption of carnivorous animals from splenic fever. It killed two dogs and a cat in one night at Swynshed. I have read Mr. Gresswell's paper in a veterinary journal, and must congratulate him on saving many animals suffering from true splenic fever by sulphite of soda. In this part of the country, they die before one knows what is the matter with them; and there is a singular contrast between the steady slow march of the inoculated anthrax and the extremely swift flight of the spontaneous disease.

I examined the blood for bacilli (but not the urine), but was unable to find any. I gave some blood to Mr. Conway Beck, of 68, Cornhill; and he found a few bacilli anthracis on the slide with the blood-corpuscles; but the blood was not taken till the fourth day of treatment, when the malignant process was stopped.

Splenic fever is supposed to be very infectious; but in neither of these two cases did any more cows fall ill, although there was a yard full of beasts belonging to each of the farmers.

The cow's skin, which had been sold to a tanner, was inquired after at my request, and was reported to be safe in the lime-pits.

VACCINATION.—Dr. Richards of Birmingham has, for the second time, received a Government grant for successful vaccination in the Edgbaston district of the King's Norton Union.

¹ Read before the South Midland Branch.