

ventilation. In Mr. Davidson's byres there too much, very clearly showing, as I have already stated, that the disease arises from exposure to drafts and currents of air, and to a want of proper ventilation and drainage; and considering these causes are of importance, as tracing the cause of the disease, I have related Mr. Davidson to state in a letter his own account of the cases, which I subjoin. In this account it will be observed that there are some cases which would go to prove that the disease is communicated by contagion; but in his opinion they have an opposite tendency. It is related that in 1845 he bought a cow in the Edinburgh market, which turned out to have had pneumonia; that after lingering for more than six weeks, during his being aware of the nature of the case, others became affected, and the disease rapidly spreading through his cows, in a few weeks thereafter they were all affected. It is no doubt, at first sight, looks as if the disease had arisen from contagion; but when we consider the length of time the disease had existed in the byre before any effect had been produced, and when it is known that the disease had suddenly increased all over the country at that period, it will at once be seen that a strong presumption of doubt is thrown over the subject. Again, it will be observed that Mr. Davidson, for the next three years, had had occasional

These he considers to be of spontaneous origin; but it is evident that others may infer from the facts notwithstanding all his precautions, that the disease had still existed in his byre, at the disease was only arrested by sending away those cows that became affected. And again, in 1849-50, another diseased beast was introduced into his stock, and the disease again spread so rapidly that he was at length induced to try the effect of improved arrangement of the byres, with proper ventilation and drainage; but I shall here allow him to give a statement of his case.

EAN PARK, BALERNO, 11th June, 1857.

MR. DICK.

Sir,—As requested, I proceed to give result of the alterations on my byres. The byre originally was 83 feet long, and 24½ ft. inside measurement, and fitted up for cattle, having an opening or bole opposite to each trivacle stall for the purposes of feeding, and air, to the cows from the byre. The byre stood longitudinally about north and south-west, having one door in the front to the south-east, one in the back to the north-west, and one in the end facing the south-east. The roof was closely covered with thatch, and there was a gangway up the centre of the byre for the cows to stand on each side of it with access to the stall. From their being no openings in the walls, and none in the roof, there were many cross drafts of air; and the wind blew strongly from the south-west, creating a current of air through the whole byre.

length of the byre. We had no pleura among our cows previously to 1845; but there were frequent colds, and weeds or inflamed udders, occasional attacks of murrain, and that, too, without any traceable infection. And when any sudden and severe change of weather took place there was an immediate falling off in the supply of their milk—this falling off telling, with almost barometric precision, the change in the atmosphere—and all plainly traceable to the cross currents of air through the byre to which the cows were exposed.

About the year 1845 I bought a cow in Edinburgh market, which turned out to be affected with plectro pneumonia. It was a lingering case, lasting upwards of six weeks without my being aware of the nature of the disease; and at the end of that period the disease attacked one or two of the other cows, and spread so rapidly that, within other three weeks, every cow I had was affected, and the whole either died or were sold off the premises, as I wished the byre thoroughly cleaned before buying in a new stock.

The byre then stood empty some time, was thoroughly cleaned from the roof to the causeway, and repeatedly washed with hot lime, and chloride of lime. And after I thought all danger of infection was removed, a fresh lot of cows was bought in, not in public markets, but privately, and from stocks known to be healthy; but, notwithstanding all our precautions—and we could trace no cause for infection—we had in the course of the next three years ten or twelve separate cases of pleura; which, however, never spread among the stock, as the diseased animal was at once sold off on the disease showing itself. These occasional cases of pleura, as well as the frequent colds, and weeded udders, to which the cows were then subject, I attribute entirely to the currents of air to which the cows were then exposed in the byre—together with, perhaps, a predisposal of their systems to this disease—as I *knew* it was not communicated by infection.

About the year 1849 I again unfortunately bought a diseased cow, which stood undetected for some considerable time among the rest. Almost every beast I had took the disease, and I lost heavily. After again consulting with you, and trying the effect of a temporary subdivision of the byre by straw partitions as you suggested, I resolved to try the effect of altering and subdividing the byre into four divisions or byres, completely separated from each other by stone partition walls, each byre having one door and one opening window, and the whole being thoroughly ventilated by an opening on each side of the ridge of the roof, and extending the whole length of the roof, through which a constant stream of foul and heated air ascends, and a constant supply of pure and cool air descends, to the manifest comfort of the cattle, and at the same time without exposing them to any cross draughts of air. The drainage was also improved.