Virulent Outbreak of Poultry
at Barnston near Penrith
July 1885

Liscard, Cheshire
April 29, 1886
Introduction

The subject of the following remarks owes its origin to an epidemic which commenced in the small village of Shap in Westmoreland and spread from there to the neighbouring district of Bampton, ten miles from the historic little town of Penrith.

I shall first describe briefly the characteristic features of the Bampton district. I shall then give a general description of the outbreak and close by mentioning what I consider was the cause of its virulence and the treatment I adopted.

Bampton is a scattered Agricultural district about 200 feet above the sea level and situated near the border line between the counties of Cumberland and Westmoreland. It lies on the western slope of a valley. In the bed of the valley a small tributary of the Lune runs on its way from Hanwater. The district is quite free of woodland, most of the sloping ground is used for grazing purposes, but those parts which are cultivated for other purposes are very fertile. The soil was fine, dry, very porous. The dryness of soil is due to the fact that the district is protected from the moist west winds while at
the same time it is exposed to the rays of
the sun for the best part of the day. Then
again the drainage of the soil is very perfect,
the natural position of the district requiring
little artificial aid to obtain most efficient
drainage.

General Description
of the Outbreak

Incubation. In most cases appeared to be
from three to six days, but this varied consid-
erably. My only guide in ascertaining this was
by calculating the time when several members
of one family became infected from one another
—a guide which of course is open to considerable
error, especially when I had to depend on the
statements of a careless & involuntary set of
people. During this stage slight symptoms
were sometimes present. A little lassitude &
feeling of weariness towards night with more
or less capricious appetite.

Invasion was accompanied by marked
headache & much lassitude. There was a con-
tinuous feeling of chilliness but no distinct
rigors. There was no vomiting. As a rule
general pains in the body. Limbs were complained of while much restlessness and irritability of temper were present. Slight sore throat was invariable with uneasiness in swallowing. The eyes were red, heavy looking but did not run. Sneezing did not occur. There was no cough nor hoarseness. There was no "running from the nose." The neck in no case felt stiff. The tongue was white. The patients felt thirsty. These previous remarks are almost entirely taken from the history which I received in each case. During this stage I unfortunately had no opportunity of observing the temperature or the relative delayed sending for medical aid until the rash appeared or symptoms became serious. This stage seemed to last for two or three days but in some cases only for a few hours. I gave place to

The Eruption Stage. The eruption commenced on the upper part of the chest and face, but as a rule quickly spread to the limbs. It appeared first as small bright red papules, these were not however equally diffused but soon became grouped into irregular patches, becoming
at the same time darker in colour. These patches were not purpuric in arrangement they were slightly raised but disappeared on pressure, they had slight elevations on their surfaces I was seldom larger than a shilling. The rash rapidly became thickly distributed over the body; the skin between the patches becoming dryly covered thus giving rise to general redness. The patches however remained quite distinct on the limbs, few spots appearing between them. The face was uniformly covered it was sometimes dark dusky in colour over the malar prominences. The face hands were occasionally oedematous. Suddenia appeared early, in fact almost simultaneously with the rash I was especially well marked on the neck. As the eruption developed the symptoms became more intense. Respiration was remarkably hurried, frequently reaching 50 per minute, yet on careful examination, the chest was found unaffected. Percussion resonance tympanitis were all normal. The respiratory murmur though somewhat harsh had no accompaniments.

The temperature was unusually high, even at the
earliest stage of the eruption at which I was able to take the temperature it was rarely
under 103° Fahr., more commonly however it ranged
from 103° to 104° Fahr. In several cases before the
crisis it reached 105° Fahr. In all cases after the
crisis the temperature fell rapidly.

The Pulse occasionally gave rise to considerable
acceleration running up to 130 being small & full.
In one case the heart sounds were peculiar, over
the pulmonary utter a distinct soft blowing
murmur; twenty four hours afterwards this
had entirely disappeared.

Vomiting was intense & difficult to relieve, the
tongue presented a peculiar appearance, frequently
being coated with a deep white fur (as if a piece
of kid had been stretched over it). The papillae were
thus hidden from view.

Vomiting was very scanty & deposited little
abundantly. Delirium was prominent & with
it there was much restlessness. Light sound
disturbed some of the patients very much.
The throat was of a dusky red hue as far as
the anterior pillars of the fauces, but the
mucous membrane tended to be dry showing no signs of ulceration, neither ophthalmalgia nor diphtheritic. The submaxillary glands were not enlarged. The bowels were as a rule constipated. Sometimes they were not affected, but in no case was diarrhoea present.

Crisis was generally reached about the end of the second or third day. Respiration rapidly became listless, breathing becoming rapid and deep. Some patients complained of a feeling of impending death.

The pulse at this time was small and quick while the temperature was a rule 7 to 10.5° above 108° or 106°. Fortunately all my cases at this stage passed through without severe changes or by the bowels being relieved. After this the expression previously anxious became calm. I placed them all in a room and the symptoms quickly subsided. The skin remaining soft and perspiring. pulse 90. Temperature rapidly fell. The temperature in some cases becoming normal in 24 hours. Convalescence commenced at once. The tongue changing from the edges, appetite quickly returned. Excitement occurred extensively during convalescence.
valiance. The epidemics generally came off in small patches on the face but more in the form of powdery scales from the lips. Peeling always commenced at the face was most marked on the forehead. Petechial stains in some cases remained for about ten days after all fever had subsided. In one case I was informed that a secondary rash, of very small red spots appeared about four days after all fever had gone. Convalescence was never retarded by a relapse. The kidneys acted well throughout. In no case was there any threatening of pneumonia or bronchitis. Nor of the fleshy of the neck gave rise to any trouble. Otorrhoea never followed. The slight inflammation of the throat was never followed by any serious consequences. I the eyes showed no tendency to inflame. In fact all the patients recovered remarkably quickly. I regained strength more rapidly than could have been expected.

Remarks. It is with deep regret that circumstances have compelled me to present the details I description of this Epidemic in so limited a form as I now do. My practice however extended over a radius of
fifteen miles round Ennith, according at the
next interesting stage of some of the basis which
I have just attempted briefly to describe,
I was called away in an opposite direction &
thus prevented from making those observations
necessary to discuss such cases more in detail.
At last I reluctantly had to accept the statements
of inexperienced people & give my thermometer
to country nurses who had never before seen
an instrument much less used one.
I have termed this Virulent Pothu2n simply
on account of the severity of the symptoms. I
fortunately had no death in my 15 cases. Three
cases died however during the epidemic in a
neighbouring practice.
That the outbreak was German not ordinary
measles was proved I think first By the
absence of all signs of catarh. Secondly By
the peculiarity of the rash. Its character at first
being somewhat like ordinary measles - without
the crescentic arrangement of the patches - while
afterwards it looked more like Scarlet fever except
on the limbs. Thirdly on account of the throat being
more prominently affected than in ordinary measles.
F outrth. Desquamation occurred to a much larger extent than one would expect in ordinary measles. That the outbreak was not scarlet fever is proved I think First by the peculiarity of the rash. It was more raised than the scarlatinical rash and had a distinct tendiney to form patches. Secondly by the absence of the "Strawberry tongue." Thirdly that though the throat was affected yet it was not proportionate to the severity of the symptoms, showing no tendiney to catarhal or diphtheritic ulceration. I consider that both Scarlatinical & Measles were further dispelled by the fact that in no case did any complication or sequela follow. These cases are remarkable occurring in such a well situated healthy district amongst an unusually robust class of people. Both old and young were attacked but adults were the most affected. The disease was very contagious, one case occurring in a family almost invariably spreading to one or more of the other members. The medium of infection was I think the air. as each farm supplied itself with milk, bread was home baked. Each farm had its own well or spring & I could find nothing common to all the farms which might have carried
the infection save the air alone. My information with regard to these patients having previously suffered from measles or scarlet fever was unsatisfactory.

I account for the severity of the symptoms in these cases by the extraordinary variations in the atmospheric temperature which occurred during the epidemic. The maximum thermometer on several occasions registered 90° in the shade, while the minimum thermometer occasionally stood as low as 40°; so I could find no cause in the patient's thermometer or their hypothermic surroundings to account for the virulence of the symptoms. I consider there can be no doubt that the extreme variations of the atmospheric temperature which then prevailed, sometimes amounting to nearly 40°, not only encouraged the development but largely increased the power of the microorganisms usually associated with German measles. I am of opinion that alterations in temperature between the points I have above noted are more favourable to the growth and development of micrococci than a continuous high temperature - say at 90°. The dry state of the weather no doubt assisted the temperature in increasing the power
The treatment which I adopted contains little or anything new save that I once or twice combined the administration of Aconiti & Alcohol, drugs which are usually considered incompatibles. I depended largely on stimulants, giving them in full doses according to the age of the patient. I found both brandy & champagne very useful not only in reducing the frequency of the heart beats but by improving the condition of the pulse. I held in combating the disease itself (P. Farr, & Lander Brunton). I obtained very satisfactory results with Aconiti, two minims of the tincture every hour, with Spiritus Ethicus nitrosus & ammonium, bringing down the temperature thus or even four degrees in the space of twenty four hours.

In some cases where symptoms are plain, when the temperature remains high while the pulse continues small & quick I hold that, contrary to eminent teaching, stimulants & aconiti may be administered at the same time, with beneficial results. When the depression of the heart & the consequent smallness of the pulse is probably due
to the previous administration of aconite that
of course I would at once withdraw it & depend
entirely on stimulants; but if the cardiac de-
pression be due to the virulence of the zymotic
tonix then aconite may be safely continued
while at the same time we administer stimulants
purely. Aconite in medicinal doses divides
the heart beats by its action on the roots of the
vagus, the subsequent administration of atropine
proves this (Sande Brunton). Alcohol on the other
hand, in disease, increases the force of the heart beats
by its action on the cardiac ganglia. Muscular tissue
of the heart, while it reduces blood pressure by
relaxing the arteries (Ringer) it does not necessarily
quickens the pulse. The physiological actions of
these two drugs do not oppose one another by
acting through the same channel. I therefore con-
sider their combined administration in medicinal
doses is quite compatible. Such treatment does
undoubtedly require considerable caution, but if
if used in appropriate cases will I am confident
be found worthy of trial.