

AN EPIDEMIC OF INFLUENZA IN A PRISON.

By R. F. QUINTON, M.D., M.R.C.S.,

Medical Officer Her Majesty's Prison, Wandsworth.

The following notes and observations are made in connection with 195 cases of influenza which recently came under the care of myself and my colleague, Dr. Dyer, at Her Majesty's Prison, Wandsworth. Of the whole number affected, 159 were prisoners, the others being members of the staff and their families, mostly resident in prison quarters. The proportion of officers and prisoners attacked respectively was as follows:—

Officers, 19 out of a total staff of 87.
Prisoners, 159 out of a daily average population of 902.

In the last few days of 1889 some sporadic cases of what seemed to be ordinary cold appeared amongst the prisoners, and one officer went on the sick list on December 30th with suspicious symptoms. On January 4th, however, the epidemic had got a good foothold and invaded all parts of the building indiscriminately, showing no partiality for any particular quarter, and no obvious tendency to attack the occupants of adjoining or neighbouring cells. From January 4th to the 16th every landing in the prison contributed cases in tolerably uniform proportion to its population, with the exception of two basements which contained only a few cells—7 in one case and 4 in the other. After this date the disease seemed to die out, only a few cases occurring at intervals.

The accompanying table gives an idea of the general incidence of the epidemic during the period inside the prison. The large and small prisons are alike in shape and construction, and consist in each case of a circular central hall with long wings radiating from it, the whole being open from floor to roof. Each wing has four landings, basement, ground floor, and two sets of galleries from which the cells open running along each side of the wing.

		January															Total	Total Number Cells.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Main Prison.	Wing A.	—	1	3	—	—	—	—	1	5	4	—	3	1	2	—	3	25	143
	" B.	—	1	3	—	—	—	—	3	3	1	3	2	1	—	—	2	23	164
	" C.	—	8	17	2	7	4	4	1	1	3	3	—	1	1	—	4	44	261
	" D.	—	2	1	1	—	4	1	—	1	1	—	—	—	1	1	1	15	153
	" E.	—	1	—	1	—	3	1	2	—	—	1	3	—	1	1	1	15	121
Detached Prison.	G.	—	—	—	—	—	1	2	—	2	1	—	—	—	—	—	6	35	
	" H.	—	2	—	2	3	—	1	—	1	1	2	2	1	1	2	18	90	
	" K.	—	2	2	1	1	—	1	1	1	—	—	—	—	3	—	13	75	
		3	14	7	17	12	17	15	10	13	8	13	6	4	4	11	5	159	1043

The symptoms and signs observed were shivering in various degrees, fainting, frontal headache, giddiness, general muscular pains and "soreness," especially in the back and legs with marked weakness of the knees, a sense of aching in the eyeballs and around the orbits, soreness of throat, running from eyes and nose, cough, vomiting, diarrhoea, loss of appetite, and perverted taste, etc. No distinctive rash was observed, but herpes of the lips occurred in a few cases, and in two instances there was marked oedematous swelling of the cheeks and eyelids followed by desquamation. Catarrhal symptoms were absent in a large proportion of cases—considerably more than half the number—at all events at the outset of the attack. Catarrh appeared to me to be more a sequela than a symptom of the complaint. The soreness of throat complained of seemed to be muscular, for nothing could be seen generally to account for the apparent difficulty of articulation and swallowing.

Suddenness of onset was a very common feature. Several men had their attacks ushered in by a fainting fit in chapel at the daily morning service.

Temperatures ranged for the most part between 99° and 102°. In two cases it reached 104°, but rapidly subsided in ten or twelve hours. Nothing was noted in regard to the pulse further than what is usually found in connection with the febrile state. There were 2 cases of transient delirium occurring in the early stage. One patient had a slight attack of pneumonia of one base, and his urine showed a trace of albumen. Bronchial catarrh and bronchitis were frequent after the first few days of pyrexia, and

slight rises of temperature in the evening, with "hot flushes," often continued for seven or eight days, though the morning and midday temperatures might be normal.

Among the 159 prisoners affected only one relapse was noted, and it was remarkable that this prisoner did not return to work in a warm cell, but in a draughty passage, where he was engaged in sedentary employment, making baskets. When readmitted to hospital two days after his discharge his temperature was 103°.

Of the 19 officers attacked, 2 who returned to duty too soon had relapses, which were in each case more severe than the original attack.

None of the cases ended fatally, although patients of all ages, from infancy to 76, were victims of the epidemic, which seemed to spare neither the weak nor the strong. The average duration of illness was four or five days.

The most troublesome complications and results noticed were irritating cough, general languor and weakness, with much anæmia, and these were out of all apparent proportion to the duration and character of the febrile stage.

Out of the whole number of prisoners who suffered, 20 of the worst cases were treated in hospital. The remaining 139 were dealt with in their cells, the essence of the treatment being strict confinement there for three or four days in an equable temperature of about 60°, which was easily maintained uniformly throughout the prison at this period owing to the mildness of the weather. Exemption from work was of course ordered in all cases, and rest in bed when necessary. The medicines ordered were generally Dover's powder, cough mixtures of the usual kind, ammonia, steel and quinine. Of these the last mentioned seemed to be the most serviceable and trustworthy, but I have grave doubts whether any medicine had much direct influence on the disease. It should be noted that all who showed symptoms came under notice very soon, and so enjoyed the advantage of early treatment.

I can give no facts that will throw a light on the length of the incubation period, but I should judge it to be short, and not more than from one to three days.

Whatever the mysterious influence may be which gives rise to this complaint, there can be little doubt that the very definite and peculiar symptoms point to a specific virus and a living organism of some sort. As an early victim in this epidemic, I had the unpleasant experience of studying in my own person the behaviour of the poison, and, although I am peculiarly susceptible to what I have hitherto known as an "influenza cold," I became convinced that this attack was quite novel to me. I had, in fact, no catarrhal symptoms from first to last, and I never felt so weak-kneed before.

The secondary effects of the poison, as shown in the notorious prostration that follows an attack, are equally striking. Other peculiarities of this contagium, which make influenza the most typical of epidemic diseases, and at the same time distinguish it from all others, are its extreme diffusibility, the speed with which it travels, and, I would add, its apparently rapid development, decay, and death. When the bacillus is brought to light, and its ways and habits investigated, I am inclined to think it will be found to flourish best in the open air.

In regard to the etiology of this epidemic in the prison, it will be seen by reference to the table that the outbreaks in the two prisons were practically simultaneous, and at points far apart from each other. The prison stands on open ground on 35 acres of land at Wandsworth common. Within the boundary wall there are enclosed 12 acres. In the prison quarters for officers outside the walls the disease had already made its appearance on January 1st, and in the Wandsworth district generally it was very prevalent at the same time. The postal service was carried on with difficulty, owing to the number of letter carriers who were on the sick list. All this would appear to point strongly, if not conclusively, to some general cause, and to signify that the contagion was in the air, and was not imported by one case and passed on rapidly to all the others. One warder was taken ill with influenza symptoms on December 30th, but when he reached the prison at 6 A.M. he was unable to go on duty, and returned home on the sick list. It seems highly improbable that even if he had gone on duty he could have inoculated the virus at so many points. Moreover, this would argue a very high degree of contagion in influenza patients, the existence of which there is much reason to doubt. Facts appear to me to point in a distinctly opposite direction, and to show that the disease is not infectious or communicable from person to person, at all events in any marked degree.

Isolated country houses are attacked where no known source of

infection is near, and within a few hours—much too short a time for an incubation period—several cases appear. Very few people can give any more definite account of how, when, or from whom they caught the infection than the man-in-the-street source—a circumstance that is not usually observed in case of other contagious disorders.

In this prison epidemic none of the patients already in hospital contracted the disease, although men in various stages of influenza, to the number of twenty, passed through the wards between January 2nd and February 1st. At the same time three hospital orderlies out of four, who were moving about and taking exercise daily out of doors, were struck down at the beginning of the epidemic, and suffered rather severely.

If it be true, as held by some, that the virus is given off in the breath of the patient, we have pretty strong evidence that this virus does not live long, or show such tenacity as the germs of other infectious diseases, notably scarlet fever. Since January 21st, when the last fresh case occurred in the prison, the average weekly number of prisoners received has been about 170. Many of these have occupied cells in which infected men, beds, and bedding were for several days together. None of these cells were disinfected, nor were any special precautions taken in regard to them. It is impossible to think that all these new comers were insusceptible to contagion; and yet none of them caught the influenza.

NOTES ON AN OUTBREAK OF INFLUENZA AT KING EDWARD'S SCHOOLS FOR GIRLS.

By HUBERT C. BRISTOWE, M.B.LOND.,
Clinical Assistant Bethlem Royal Hospital.

I AM permitted through the kindness of Dr. R. Percy Smith, Superintendent of Bethlem Royal Hospital, to give an account of an outbreak of influenza at King Edward's Schools for Girls. The school is under the superintendence of the authorities at Bethlem Hospital; it contains in all 240 girls, varying from the age of 11 to 16; of these 175 were affected, making about 73 per cent. of the total number. Two mistresses are also included in this account. Before January 17th there had been one or two cases, of which, however, no special notes were taken. On the morning of January 17th there were 4 cases, by the 20th there were 76, and by the 24th, 162; after which only a few cases appeared daily till the 29th, since which there have been no fresh ones. These girls spend a great deal of time in the open air, but only in the grounds connected with the schools, and have practically no communication with the outside world, except through the mistress and medical officers, who might, of course, have carried the infection. In almost all cases the disease was mild, and there have been no deaths amongst them.

Earliest Symptoms.—In almost every case the first symptom complained of was headache; only two were without it, and it is extremely doubtful whether these two ever had the disease at all. The headache in most cases was in the frontal region, the eyes also very often ached, and in some cases were tender to the touch. In only 14 per cent. was backache complained of, whilst 15 per cent. complained of pain in the side, in the lower costal region; and here there was always distinct tenderness, which seemed to be in the muscles. Aching in the legs was present in 16 per cent. only.

In 176 cases there was distinct watering of the eyes, the conjunctivæ being slightly injected. The face in 143 cases was extremely flushed from the first, in the other 34 cases the face was pale, and the patients were anæmic.

The temperature in most cases rose above 100° F., but the majority did not exceed 102°; in one case, however, it rose to 105°, and in only 4 cases was there shivering at the commencement of the illness. The children generally slept well, and 9 were markedly drowsy. The pulse certainly was not particularly slow, and was usually above 100; it was soft and weak.

In the 73 cases the tongue was furred, in 78 pale, flabby, and indented by the teeth, while in 7 it was red and dry, and in some of these almost strawberry-like in appearance.

In 61 cases there was vomiting, in all of which it started on the first day, and in only one case did it last longer. The action

of the bowels was generally normal, but in 21 cases there was diarrhœa, with more or less abdominal pain, and in 19 cases there was marked constipation.

In 4 cases there was epistaxis, and in 1 there was what seemed to be hæmatemesis, the vomit being largely streaked with blood, which was, however, bright red.

Cough to a slight extent was present as a later symptom in 72 cases, but in only 9 cases were there any signs of bronchitis. There have been 3 cases of pneumonia, 2 of which recovered rapidly. Sore throat was present in 5 cases only.

Rash.—Besides what appears to me to be the true rash, in 17 cases there was labial herpes. In 36 cases, or over 20 per cent., there was a distinct rash; it was papular in character, the papules being slightly larger than the darker elements in the rash of scarlet fever, and of much the same colour. The papules often contained serum, which occasionally became purulent. The skin round the papules was of a bright scarlet colour. In most cases the rash was confined to the face and neck, though it often appeared on the arms and hands as well, and in 2 cases on the shoulders and chest; it itched much, and generally after two or three days the bright colour faded, and it became scaly. In one case the rash was all over the neck, chest, legs, shoulders, and arms, and was at the time thought to be scarlet fever; but the temperature never rose above 100.4°, and the other symptoms of influenza, including pains in all the limbs, were present. There was no sore throat, and the tongue was only slightly furred. In two days the rash had almost completely gone.

A simple erythematous blush on the face was present in 9 cases. In the cases in which the rash was best marked no drugs had been given, the rash appearing as one of the earliest symptoms. In the other cases salicylate of soda, in 2½-grain doses, had been given three times a day, and only in cases in which the temperature had been high was antipyrin given, and then only in small doses of 2 grains.

In all cases the symptoms rapidly subsided, the worst symptoms, that is, pain and high temperature, being over in two days, the watering of the eyes generally lasting two days longer, and convalescence was completed in a week except in the 9 cases of bronchitis and the 3 of pneumonia. Weakness and giddiness were greatly complained of during the first day or two of convalescence.

A good many accounts of influenza have already been published, but, as yet, none of epidemics among children, and it is on that account that I think this may be interesting; it also shows that influenza affects children just as easily as, though perhaps in a lighter form than adults.

	Total.	Per. cent.
Headache	175	98.305
Backache	25	14.124
Sideache	27	15.254
Chest pain	6	3.358
Stomach pain	13	7.344
Legache	29	16.384
Armsache	2	1.130
Total pain	176	99.435
Watery eyes	170	96.000
Sick	61	34.483
Bowels normal	127	71.751
" confined	19	10.734
" diarrhœa	21	11.864
Tongue normal	19	10.734
" furred	73	41.243
" red and dry	7	3.954
" pale and flabby	78	44.067
Rash, herpes lab.	17	9.600
" erythema	9	5.085
" papular	36	20.339
Lungs, cough	72	40.676
" bronchitis	9	5.085
" pneumonia	3	1.700
Sore throat	5	2.825
Epistaxis	4	2.260
Drowsy	9	5.085
Face pale	34	19.709
" flushed	143	80.800
Shivering	4	2.260
Total	177	
Total in schools	210	
Per cent. affected	73.75	