

The death rate from diphtheria in England and Wales was, during 1892, 222 per million of the population living; the highest rate being in the case of London, with 459 per million; and the lowest in that of Dorsetshire, with only 74.

Taking, now, some of the South African towns, we find the following rates obtaining:—

Cape Town	...	...	...	804
King William's Town	...	...	...	830
Worcester	...	...	...	925
Malmesbury	...	...	...	1,625
Beaufort West	...	...	...	1,791
Murraysburg	...	...	...	3,828
Aberdeen	...	...	...	3,984

REPORTS OF MEDICAL OFFICERS OF HEALTH.

HUDDERSFIELD.

Still-born Children.—Dr. Kaye remarks:—"An investigation into the decline of the birth-rate led me, during the past year, to make inquiries into the number of still-born children. This inquiry has been surrounded with difficulties owing to various reasons. In some churchyards no record is kept of the interment of still-born children, because the English law enacts that those children born alive shall only be registered. On the Continent registration of still-borns is provided for, with the exception of Russia; so that in this country, so far advanced in all questions relating to the welfare of the public, we should not lag behind in this matter. I am informed also that sometimes the bodies of still-born children are disposed of surreptitiously by the relations during the night time in the burial ground. In other cases a fee of one or two shillings is charged, which goes to the sexton, and no record of any kind whatever is kept, while in some instances the fee goes to the minister, and there a register is generally maintained. So far as I have been able to ascertain, a yearly average of 119 interments of still-born children took place in five burying grounds during the decade 1884-1893 in this borough—that is to say, six to eight per cent. of the total births, or one to every fourteen living births. These proportions are much in the same ratio as reported by several investigators on this subject. From the figures at my disposal, there is little, if any, ground to believe that there has been any apparent increase in the number of still-born children. To show the necessity of registration in those cases, it has been brought to light in a Parliamentary return for 1890 that no less than 17,335 supposed to be still-borns were interred in 1,133 burial board cemeteries, and of this number 4,569 were interred without any medical certificate as to the cause of still-birth. . . . Under the present system, there is every opportunity for the conceal-

ment of illegal means, and for the disposal of children as still-born who had survived an hour or two, it may have been a day or so."

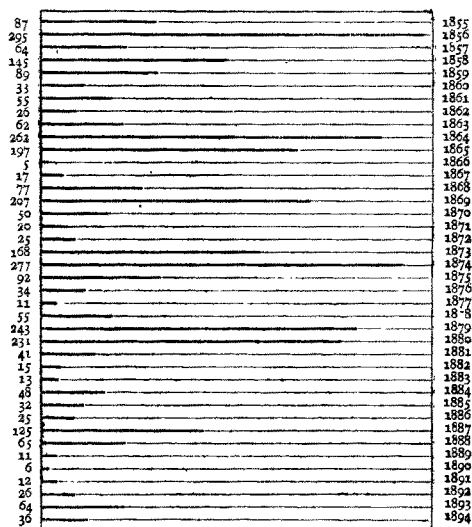
CERTAIN POINTS IN THE ETIOLOGY AND PREVENTION OF SCARLET FEVER.

BY

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SCARLET FEVER tends to recur in epidemics every few years. Thus during the last forty years there have been eight of these exacerbations. This is well shown by the diagram. It will be seen that there is a decided diminution in the magnitude of the last two epidemic waves. It is only since 1885 that active measures have been taken by the health department to prevent the spread of this disease. The methods referred to are the placarding of houses, exclusion of children from school, frequent inspections, disinfection, etc. It can hardly be doubted that scarlet fever is much more generally reckoned a contagious disease than it was twenty years ago, and it is extremely probable that it is chiefly to the recognition of this fact and the consequent precautions that are taken that the disease has been so considerably diminished during this period.

CHART SHOWING THE NUMBER OF DEATHS FROM SCARLET FEVER PER 100,000 LIVING, FOR THE FORTY YEARS, 1855 TO 1894.



The following table gives the results of my observations during the past eight years concerning certain points in the etiology and prevention of scarlet fever. This table does not include all the

families and cases, as some pass from observation through removal or otherwise; but for 1893 and 1894 all cases are included:—

	1887	1888	1889	1890	1891	1892	1893	1894	Total.
Number of families in which there was more than one susceptible child	232	244	73	66	198	220	345	359	1,737
Number of these in which there was a second case ...	130	147	30	27	78	90	150	177	829
Number of susceptible children in all the above families	986	827	242	215	605	711	1,212	1,293	6,091
Number of these children who were attacked ...	452	511	126	105	341	389	642	687	3,253
Number of additional families with susceptible children in the house where the disease appeared	112	128	18	15	98	154	198	244	967
Number of susceptible children in these families ...	381	354	34	30	238	369	493	587	2,486
Number of these additional families attacked ...	27	16	0	2	10	21	16	20	112
Number of children in these families who were attacked	58	21	0	2	12	44	34	34	205
Number of tenements disinfected where there were other families with susceptible children in the house	49	56	10	4	20	26	42	109	316
Number of above where the disease spread to other families in the house	5	5	0	0	2	1	2	2	17
Number of susceptible children who were at once removed	23	18	10	9	27	42	86	102	317
Number of these who were attacked on their return	3	1	0	0	0	2	8	4	18
Number of children who were exposed and who had previously had scarlet fever	—	—	—	—	—	—	—	100	100
Number of these who were attacked a second time	—	—	—	—	—	—	—	13	13
Number of adults who were exposed and who had previously had scarlet fever	—	—	—	—	—	—	—	230	230
Number of these who were attacked a second time	—	—	—	—	—	—	—	8	8
Number of above with susceptible Children where there was isolation... ..	—	—	—	—	41	27	127	37	232
Number of families where more than one child was attacked	—	—	—	—	23	13	32	14	82
Number of susceptible children in families where there was isolation	—	—	—	—	130	69	291	96	586
Number of the above who were attacked	—	—	—	—	52	23	108	52	235

The following table shows the number and percentage of persons of different ages exposed to scarlet fever who contracted it, and also the number who did not. When I began to collect these facts the inspector was not careful to obtain the age in every case, so that until 1890 only a portion of the cases are contained in the table, and it was only in 1894 that the facts in regard to all adults in the family were obtained.

Ages.	Cases, 1887-94.	Number Exposed, 1887-94.	Ratio of Cases to Number Exposed.
Under 1 year ...	96	264	26.3
1 " ...	161	308	52.2
2 years ...	293	486	60.2
3 " ...	327	501	65.2
4 " ...	335	489	68.7
5 " ...	368	575	64.0
6 " ...	370	528	70.0
7 " ...	327	498	65.6
8 " ...	253	446	56.7
9 " ...	215	402	53.4
10 " ...	157	301	52.1
11 " ...	129	274	47.0
12 " ...	108	272	39.7
13 " ...	80	208	38.4
14 " ...	72	201	35.8
15 " ...	47	161	29.1
16 " ...	35	133	26.3
17 " ...	27	96	28.1
18 " ...	18	68	26.4
19 " ...	18	65	27.6
20 " ...	21	64	32.8
Adults ...	169	1,681	10.0
Total... ..	3,624	8,131	44.5

From the data given on the preceding pages, I think several interesting conclusions can be derived. In the first place, the relative value of

the figures (with a few exceptions to be explained) varies little from year to year. Hence, conclusions drawn from a single year are verified by comparison with other years, and there is little likelihood that the numbers in the totals are not large enough for generalisation.

It is clear that susceptibility varies very much according to age. The only way to really get at age susceptibility is to take under consideration a large enough group of children who have been actually exposed to the disease. It is certainly fair to assume that the children of a family where the disease exists are thus exposed. The one who first takes it certainly is; and from what I have seen, I know that in this city, in the majority of cases, there is not the slightest attempt at isolation; and I am also sure that when the attempt is made it is very often entirely inadequate. An examination of the table will show that there is much less susceptibility during the first year of life than during the second, and less during the second than the third. The third to the fifth years, inclusive, are the most susceptible, for of 2,591 children of these ages exposed, 1,728, or 66.6 per cent., were attacked. From this age on, the liability to contract the disease diminishes. It is probable that the fifth and sixth years are the most susceptible. At first sight the table referred to looks odd, for there are many more children between the ages of two and eight than at either

earlier or later ages, while we know that in the general population there must be a continuous diminution in the number of children from birth onwards. But as the average family does not contain over three children, and as the enquiry itself presupposes one, and in most cases more than one susceptible child, it is evident that we are dealing with selected families (selected by scarlet fever), and therefore it is no surprise that an unusual age distribution is seen. Yet it is not claimed that the figures given are absolutely accurate, especially as regards the ages over fourteen, for until within a year or two the inspector was not careful to enumerate all over that age. Yet as the proportions, except as just noted, vary very little each year, it is probable that the conclusions are justified. Taking the total number of persons under twenty-one years of age, it is seen that 53.6 per cent., or a little more than one-half, are liable to attack if exposed. Below the age of one, the chance of attack is, roughly speaking, one in four; between the third and fifth years it is three in four; and after the twelfth year it sinks to one in four again.

As regards the immunity conferred by one attack of scarlet fever against a subsequent infection, data were gathered only during the year 1894. They are not, therefore, numerous enough to base very certain conclusions upon, but I shall be surprised if in subsequent years they are not fairly well confirmed. The greatest chance of error is in regard to the fact of the first attack. The diagnosis is not always to be relied upon, and the memory also is uncertain. But the figures as obtained show that of 100 children who had had a previous attack, 13 per cent. were attacked again; while, as I have shown above, if there was no immunity, 53 per cent. would have yielded. Of 230 adults who had previously had scarlet fever, 3.4 per cent. were attacked, while of the adults who had never had it, 5.6 per cent. were attacked. These figures, if correct, would show that age conferred greater immunity than a previous attack.

It has been shown that when families with more than one susceptible child are attacked with scarlet fever, and no pretence at isolation is made, the disease spreads beyond the first case in about 55 per cent., involving 54.8 per cent. of the children in these families. When isolation is fairly maintained, however, it spreads beyond the first case in 35.3 per cent., and involves 40.1 per cent. of the children. Thus it will be seen that isolation, as ordinarily carried out, has a very considerable protective power, considerably more than the above figures would indicate, for quite a proportion of the "secondary" cases are not really secondary, but were exposed to the same contagion as the primary case, and, of course, could not have been protected by any isolation. It is very rare indeed that perfect isolation is maintained when sick and well are kept in the same house. Yet the some-

what imperfect attempts that are made are, I think, of undoubted value.

It is only by the removal of the well children from the house, or the placing of the sick person in a hospital, that real isolation can in most cases be secured. The value of such removal of well children is shown by the fact that of 317 children who were at once removed, only eighteen, or 5.6 per cent., were attacked on their return. If these children had remained at home, doubtless half of them would have yielded to the disease.

ANNOTATIONS.

THE Bradford Licensing Committee recently refused the renewal of the license of the Napier Inn in that town on the ground that certain alterations had been made in the premises which increased the internal area. It appears that the alterations thus made use of to abrogate the license were ordered by the Local Sanitary Authority; and the case, therefore, is of interest from a public health standpoint. The alterations were made on the recommendation of Dr. Arnold Evans, the Medical Officer of Health. They consisted chiefly in the removal of a urinal, the widening of a passage, and the substitution of one room for another for the purpose of a drinking bar. The carrying out of these works has rendered the inn more sanitary, and unless the revocation of the license was justified by other considerations not contained in the local report of the proceedings, it is unfortunate that the difficulties connected with obtaining the execution of sanitary work should be thus increased. A partially successful appeal has been made against the decision of the Licensing Committee, but we suppose the moral is that in future any proposed structural alterations should, before being made, be submitted to the bench of magistrates.

INSUFFICIENCY OF HOSPITAL ACCOMMODATION IN LONDON.

In July the Managers (Metropolitan Asylums Board), not for the first time, addressed a communication to the sanitary authorities, suggesting that in the selection of cases for removal to hospital, preference should be given to those patients "who, as a consequence of their surroundings and conditions of life, are most in need of hospital treatment." This advice sounds reasonable, and effect is given to it as far as practicable. But a sanitary official finding a non-isolated patient to-day, could not properly neglect to take steps to remove the case to hospital because, perchance, a worse case might crop up to-morrow. If he did, he would probably find that some other parish had benefitted by his inaction, and obtained the bed which would not be at his