ceived after the Bill has reached the House of Commons, and suggesting that each institution interested in the Bill should appoint a small committee to see the member for the district in which the institution is situate, and urge upon him the importance of this measure to education in London. The President, together with Mr. A. G. Howse, was requested to take steps for the promotion of the Bill.

SMALL-POX AND VACCINATION IN GERMANY.

THE article which appeared in the BRITISH MEDICAL JOURNAL of January 15th was copied or quoted by several newspapers here and in Scotland, and has aroused the fury of the anti-vaccinationists. Volumes that we have handled and read have, they maintain, no existence. Three of the allegations now again put forward involve issues which they evidently look on as constituting the key of a position which they must carry *per fas aut nefas*. We appeal to the phenomena exhibited by the German and French armies during the war, and the German and all other peoples since. We do take the year 1874 as our era, our terminus *ad quem* and *a quo*, but not, as Dr. Hadwen insinuates, because, the awful epidemic of 1870-72 having well-nigh exhausted the susceptible material, Germany, in common with the rest of Europe, enjoyed a respite of a few years, beginning before the passing of the present Vaccination Act of 1874. We appeal to it because, while the lull was but short elsewhere, the mortality soon rising to or exceeding its former proportions, and epidemics recurring with their accustomed periodicity, Germany has been ever since exempt from epidemics, and the annual mortality has continuously and rapidly diminished as the last generation of persons who, born before 1860, escaped the provisions of the Act is dying out. Indeed, but for the frequent introduction of infection from abroad, small-pox mortality would probably ere long be reduced to zero.

The three allegations are: (1) that there are no, or no authentic, statistics of the small-pox deaths in the two armies; and that, even if the numbers were as we say, the explanation must be sought, like that of the mortality from typhus, in causes other than the relative degrees of vaccination, since (2) the French army was as thoroughly vaccinated as the German, and (3) the virtual extinction of small-pox in Germany must be ascribed to better sanitation, a higher standard of living, and spread of intelligence. They maintain that the civil population, at any rate in Prussia, was as generally vaccinated and revaccinated before, as it has been since, the passing of the Act of 1874, which was, say they, with a few slight alterations, the same as that previously in force in Prussia, but then extended to and imposed on the other States of the Empire. They say also that, as regards Prussia, the change was in the direction of less stringency, primary vaccination being required before the end of the second, instead of as previously the first, year of life. This last remark contains the only grain of truth in the whole contention.

(1) The absurdity of the suggestion that the medical service of the German army was "so disorganised" by the strain put on it in the war, "that no records of the deaths from small-pox were kept" must be patent to anyone acquainted with the perfection of the military system. The official report, indeed, comprises seven huge quarto volumes, including records and tabulated analyses of every case of wounds or illness admitted to the hospitals in the field or at home from over a million German troops and 375,000 French prisoners. The production of so colossal an undertaking was the work of years, and it was not published till 1886; but though it has been before the world for twelve years, its existence is denied on the strength of a statement of Earl Granville when Foreign Secretary, a post which he resigned in 1885, the year before it appeared. From it we learn that the mean strength of the army in the field was 788,213, though, adding those who were constantly being drafted from the reserves to take the places of the killed, wounded, dead, or invalided, over a million must have been actually engaged in the war. Among these the cases were 4,835=6.1 per 1,000 of the mean strength, and the deaths 278 (not, as we stated, 262). The French prisoners

in Germany were 372,918, and among them the cases amounted to 14,178=380.19 per 1,000 on the mean strength of 262,496, and the deaths 1,963. The number would have been far greater had it not been that whenever any cases appeared in a detachment or fresh arrival of prisoners the rest were promptly vaccinated even, as in the Turco regiments, by force.

(2) The character of the vaccination in the French army may be judged from the fact that we find the authorities in 1884 congratulating themselves on the great improvement effected since the war, the proportion of successful operations having reached 30 or 35 per cent. In the German army anything less than 90 per cent. would not be considered satisfactory. We thus see that in 1884 not more than 1 French soldier in 3 was really revaccinated, and that the proportion was considerably lower in 1870; this, too, in the regular troops only, for the Gardes Mobiles, who formed a large portion of the army after the deportation of the garrisons of Strassburg and Metz and the surrender at Sedan, were under no such regulations, and the Breton regiments who suffered most were almost wholly unvaccinated.

(3) In the annotated edition of the Act of 1874, by Drs. Guttstadt and Martin, Dr. Guttstadt says that compulsion was unknown save in Hanover, Schleswig, and Nassau; that only in Saxmeiningen, Anhalt, and Nassau was any legal provision made for revaccination; and that in Nassau alone was there even a limited form of obligation in respect of revaccination. The Act of 1874 was, we repeat, adopted from the local regulations of the free city of Frankfurt. These are not questions of opinion or inference, but matters of fact, which all who wish to learn the truth may verify by reference to statute books and official reports of statistics, to the BRITISH MEDICAL JOURNAL, 1894, vol. ii, p. 1213, and an article by Dr. Edwardes in the *Practitioner* of May, 1896.

ON THE EPIDEMIC OF ENTERIC FEVER AT KING'S LYNN, OCTOBER, 1897.

AN ANALYSIS OF 50 CASES.

By C. B. PLOWRIGHT, M.D.,

King's Lynn.

THE series of enteric fever cases known as the Lynn typhoid epidemic presented certain peculiarities which it is desirable to put upon record. While it is probably true that no two cases of enteric fever are ever exactly alike, yet the Lynn cases of last autumn had certain distinctive features, constituting a distinct type of disease. The statistical details of this epidemic have already been published in the able report of Dr. F. St. George Mivart. The present remarks deal more particularly with the medical aspect of the cases. They are derived from the examination of a series of 50 cases, part of which came under my care as their medical attendant, and part as medical officer of health for the Freebridge Lynn Rural District, into which a suburb of King's Lynn (Gaywood) extends. During the rush of an epidemic one does not get much time for note-taking, but I was fortunate in securing, at an early period of the outbreak, the help of Mr. H. W. Henshaw, M.R.C.S., L.R.C.P., who took great interest in the work, so that between us we were able to keep some little record of the cases which came under our care.

Period of Incubation.—A heavy rainstorm on September 29th, in which 2.25 inches fell in 24 hours, was followed in three weeks to a month by the bulk of the cases. To be more exact, on the twentieth day after this storm the first case of this series of 50 cases was notified, on the twenty-first day a second case, on the twenty-second day 3 cases, and on the twenty-third day 5 cases. In the borough of King's Lynn the epidemic began on October 23rd, as far as the notifications were a guide. The weekly notifications were as under:

Week ending	Number.	Week ending	Number.
Oct. 2nd	...	Nov. 13th	...
" 9th	...	" 20th	...
" 16th	...	" 27th	...
" 23rd	...	Dec. 4th	...
" 30th	...	" 11th	...
Nov. 6th	...	" 18th	...
Total cases	...		50

In other words, instead of the commonly accepted period of 14 days our cases were from 3 to 4 weeks developing.

Abortive Cases.—Of these 50, four were distinctly abortive cases, in which the temperature fell to normal in a week or ten days. They all occurred during the week ending October 30th, when the epidemic was at its maximum. Headache with general malaise were the most marked symptoms. They had a commencing temperature of from 102.5° to 103.8°, falling to normal on the fifth to the ninth day. In one case a complete night and morning chart was obtained from the commencement of the attack, which is shown on Chart 1. This case is

Chart 1.—Abortive enteric, Miss H. M. A., aged 15.

the more interesting because Dr. H. E. Durham observed the serum reaction three months later. These cases are of importance, inasmuch as they show that enteric fever can run a course of less than three weeks, and, moreover, there was no little discussion at the time as to whether these were really enteric cases or only influenza. They would have been called "febricula" in the olden days. Two other charts show a fall in the temperature between the twelfth to fourteenth days.

Mortality.—One case out of the 50 only proved fatal, that was on the twenty-fourth day from hæmorrhage. Taking the whole epidemic, which up to date has comprised well on for 500 cases, the mortality has been about 10 per cent. With regard to this difference, we must remember that the abortive cases were not generally notified, and that of these 50 only one was removed for treatment. A considerable proportion of them had skilled nursing early in the disease at their own homes.

Duration of the Disease.—It was not possible in all the 50 cases to find out the number of days the fever lasted. If we take the number of weeks spent by the patients in bed as a rough but fairly accurate indication of the duration of the disease, we shall find that excluding the 4 abortive cases the 46 averaged 6.2 weeks in bed. The subjoined table shows the number of weeks the 50 cases spent in bed respectively:

Weeks in bed ...	1	2	3	4	5	6	7	8	9	10	11	12
Patients ...	4	2	4	4	14	7	1	3	4	4	2	1

The influence of age upon the duration of the attack is shown below.

	Under 5 Years.	Five Years and under 15.	Fifteen Years and under 25.	Over 25 Years.
Number of cases ...	6	23	8	9
Average weeks in bed ...	3.8	6.3	7.25	6.5

Convalescence was often very slow; many of the cases were not able to resume their ordinary duties for ten, twelve, and even fifteen weeks. Of the 46 cases, 28 were males and 18 females.

The special characteristic of the outbreak was constipation, which was noted in 91 per cent. But upon further inquiry it

became apparent that no less than 52 per cent. had diarrhoea, in most cases lasting one or two days, in others for three or four, in some few for a week or even ten days. In only 11 per cent. did it persist throughout the attack.

Rash was present in 82 per cent. of the cases.

Hæmorrhage was present in 9.5 per cent.

Epistaxis in 20 per cent.

Temperature.—It has been said that a "thermometric chart of the first four days showing a rise day by day with morning remissions" is suggestive of enteric fever, and without doubt this is often the case, yet it may be asserted that it was not characteristic of those cases in this epidemic in which we were fortunate enough to obtain night and morning temperatures during the invasion period of the disease. What we found was a comparatively sudden rise on the second, third, or fourth day to 104.5, 105, 105.5, 105.7, and in one case to 105.8°,

Chart 2.—Master J. G., aged 12.

Chart 3.—Miss F. G., aged 12.

this was succeeded by a fall to 102.5 or 103 or 104° evening temperature lasting to the third or fourth week, when the characteristic morning remissions often, but not always, appeared. After the initial maximum temperature had been obtained the tendency was for the thermometer to show a gradual decline towards the end of the disease, as shown by the Charts 2 and 3. Although no regular day-by-day ascents were observed at the commencement of the attacks, yet they were often pronounced enough with relapses.

Delirium was noted in 48 per cent. of the cases, often very slight and transient, but in several of the cases both continuous and noisy, reminding me of what I used to see when a student, in the typhus wards of the Glasgow Royal Infirmary. One adult escaped from the house and was out-of-doors before his nurse could catch him. Four boys talked continually for three, four, and five weeks, two of them subsequently had transient aphasia.

Pain in the limbs was another of the distinctive symptoms of the epidemic; 46 per cent. had it while in bed and 54 per

cent. after they got about. Of those who had it during the course of the fever, some had it in all four limbs, but more frequently the thigh, the leg, the arm, shoulder, or wrist was affected. In 2 or 3 cases only could any increase in the circumference of the affected limb be made out on measurement, and then only the most trivial. Hyperæsthesia of the skin was frequently associated with the pain; in short, the pain seemed rather to be due to neuritis than thrombosis. Myalgic pains in the legs troubled the convalescents.

Desquamation was observed in 27 per cent. of the convalescents.

Anæmia was present in 72 per cent. No doubt anyone confined to bed for six weeks and fed on slop diet all the time would look pale; but the anæmia, when it did occur, was as distinctive as the post-scarlatinal anæmia; in fact, the three last-named symptoms, pain, desquamation, and anæmia remind one very much of scarlet fever.

The cases were characterised, therefore, by a rather long period of incubation, by their low rate of mortality, by their long duration, constipation, high initial temperatures, frequently violent delirium, pain in the limbs, and subsequent desquamation and anæmia. There was an absence of diarrhoea, of the tumid abdomen so frequently seen in enteric, and, as far as I could judge, of the enlarged spleen to which so great diagnostic importance is attached by some authorities. Whether the peculiar type of our cases was due to any extraneous cause operating upon the infecting medium—for instance, its free dilution with large quantities of water before it was administered to the population, or whether some special form of microbic life differing from the ordinary was at work amongst us—must be left for others to determine.

Various sequelæ were met with—for instance, periostitis of the tibia, orchitis ending in suppuration in the pus of which Dr. Durham found living typhoid bacilli, and in one case a mental condition approaching dementia but subsequently ending in mania.

My thanks are due to Dr. Durham for help in his special line of research, and to Mr. H. C. Allinson, Dr. Chadwick, Messrs. C. Jackson, A. L. Saunders, and G. A. Trevor-Roper for information freely given.

ARCHÆOLOGICA MEDICA.

XLIII.—BOERHAAVE'S TREATMENT OF SYPHILIS.

HERMANN BOERHAAVE (1668-1738) enjoyed the personal affection of his fellow citizens at Leyden very much in the same manner as did Sir James Young Simpson at Edinburgh. The personality of each man must have been very remarkable. It is told of Boerhaave that on January 11th, 1723, all Leyden was *en fête*; the bells were ringing merry peals, the houses were decorated and the streets were brightly illuminated because the founder of modern scientific medicine had recovered from a severe attack of gout. All Edinburgh was moved in 1850 when the discoverer of chloroform was laid up with blood poisoning.

Boerhaave's enormous practice and the great reputation he enjoyed amongst the members of his own profession render it certain that his method of treating syphilis was that adopted by the majority of his contemporaries. The tract in which he describes his treatment forms part of his famous *Aphorisms*, translated into English by Dr. Delacoste "from the last editions printed in Latin at Leyden in 1715." Boerhaave here recognises the acquired and the inherited forms of syphilis, and, for children at any rate, he acknowledges the extraneous sources of infection, for he says: "Sometimes children get it by sucking unclean nurses..... Dry nurses will communicate it to children when, having pocky ulcers in the mouth or throat, they taste the children's papp or meat." He avoids the error into which John Hunter afterwards fell, of associating syphilis with gonorrhoea, though he indicates that they are often combined in the same individual, but he only classifies the various forms of venereal ulcer in the roughest possible manner.

Pustules and chankers must be consumed to the quick with mercurials and then cured with gentler means, still with a small mixture of them to the last. And you must all along use the internal means..... But when the pustules are dispersed all over the body, pains invade the limbs and nightly uneasiness, large buboes, gnawings of the bones and often renewed clasp, all these show that the patient is Pox'd and nothing then will do but a salivation by mercury.

It is clear, therefore, that the great physician had no idea of the primary, secondary, and tertiary stages of the disease as we now recognise them, and that the treatment was purely empirical. The business of salivation was a serious one both for the physician and his patient. There was a period of preparation during which "the patient was to drink plenty of ptyanes. Then, give him every two hours a small dose of *mercurius dulcis*." This far-famed preparation of mercury known as "the tamed dragon" was made by subliming a mixture of corrosive sublimate and mercury which had been beaten up in a mortar with a little vinegar. It was given in doses of 15 to 20 grains, and was renowned because "it brings forth all poisonous and vitious humours and rectifies the very marrow in the bones, yet works not at all by vomit." Boerhaave directs the mercury to be given

.....until the breath begins to stink, the gums to ache, the teeth to grow loose and stick out. Then ought the Physician to attend carefully and consider whether he ought to go on, to stop, or even to make some diversion. If the patient spits three pints or two quarts in four and twenty hours it is sufficient. If he spits less, you must again give one or more doses (of mercury). If (it) is more than what his strength can bear you may suspend it with a gentle glyster, purge or sweating medicine. If the mercury runs violently downwards causing griping, and painful stools give an opiate and diaphoretic. If the mouth, gums, or jaws do swell or pain too much, you must use a soft, gentle liquid, gargle or wash or a glyster, purge or sweat. You must go on till all the symptoms are vanished which generally takes up to thirty-six days. Then you ought for thirty-six more days to give him still now and then a small dose of mercury to retain yet a small spitting. Nor is there any other sort of remedy requisite here to restore perfect health. The nodes are lessened with specific plaisters, or by scraping the bone after having laid it bare.

This was the active treatment meted out to the unfortunate sufferers from syphilis throughout Europe during the eighteenth century. It is no wonder if the remembrance of this period still lingers in the memories of the vulgar and sometimes disinclines them even now to enter upon that modified course of mercury which is essential to the radical cure of syphilis.

It would be of some historic interest to know how and why this severe salivation came to be looked upon as a necessary part of the treatment of syphilis. It is supposed that Giacomo Berengario da Carpi, who was Professor at Bologna from 1502 to 1527, was one of the first to use mercury in the treatment of syphilis. Benvenuto Cellini (1500-1571), the great Italian artificer of the Renaissance, says of him, "This able man, in the course of his other practice, undertook the most desperate cases of the so-called French disease. In Rome this kind of illness is very partial to the priests and especially to the richest of them. When, therefore, Maestro Giacomo had made his talents known he professed to work miracles in the treatment of such cases by means of certain fumigations." The results however were not very satisfactory, for in another place Cellini says, "He was a person of great sagacity and did wisely to get out of Rome, for not many months afterwards all the patients he had treated grew so ill that they were a hundred times worse off than before he came. He would certainly have been murdered if he had stopped." Cellini himself caught the disease, but he had it during the milder period which succeeded the first terrific outbreak and he cured himself with guaiac. John of Vigo (1460?-1517?), who was living when syphilis first appeared in Europe in an epidemic form used "a symple unction fortified wyth a lytle quyksyluer quenched with spittle," but in 1519 Ulric of Hütten, the poet and valiant knight of the sixteenth century, in telling of his own case says that he had been eleven times salivated and was at last cured by guaiac. Ambroise Paré, the great French surgeon (1510-1590) and Clowes (1540-1604), the Englishman who wrote *De Morbo Gallico*, treated their syphilitic patients with inunctions and fumigations, whilst Wiseman (1620?-1676), the only surgeon of renown during the Commonwealth and Restoration periods, taught that "the methods of salivating are divers, but all by mercury."

A BELGIAN MEDICAL TEMPERANCE SOCIETY.—A Medical Temperance Society has just been founded in Belgium. The Provisional Committee is composed of Dr. Barella, President; Dr. de Vaucleray, Vice-President; and Dr. Bienfait, Secretary. Among the members are Dr. Van den Corput, Member of the Belgian Senate; Drs. Lentz, Moeller, Barella, and de Vaucleray, Members of the Brussels Academy of Medicine, Professors Francotte, Putzeys, Verriest, and Drs. Mahaim, Romée, Voituren, Van Coillie and Wibo.