OUTBREAK OF ENTERIC FEVER THE RESULT OF INFECTED ICE-CREAM.

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TOWARDS the latter half of September a sudden and alarming outbreak of enteric fever occurred within a circumscribed area of the burgh of Govan, and as its causation was speedily determined a short account of the epidemic may be of interest, especially in view of the proposed legislation with respect to the manufacture and sale of ice-cream.

The sequence of events may be briefly summarised as follows. The first case of the series within this area was reported to the health department upon Sept. 20th, followed by two cases on the 21st, six on the 22nd, four on the 23rd, four on the 24th, and one each on the 27th and 28th respectively. To be strictly accurate, the two latter should be ante-dated to the 20th and 21st respectively, for the usual characteristic clinical manifestations were indefinite, and Widal's reaction in both instances at first gave a negative result, although the reaction was positive when the cases were notified. Both had been ill for at least a week. Excluding the case which undoubtedly gave rise to the outbreak it will be seen that in all there were 19 cases within a period of five days—viz., from Sept. 20th to 24th inclusive. Seeing that they had all occurred within a well-defined area and that only a few sporadic cases had been reported previously in other parts of the burgh (population 91,000) outside the affected zone, investigations were conducted with a view to eliciting the local cause of the outbreak. Nothing in common as regards the drainage or water-supply of the district could be regarded as the determining factor, but inquiries as to the milk-supply disclosed the fact that 15 of the 20 cases, or 75 per cent. of the total, received their milk, either wholly or in part, from a dairy in the immediate neighbourhood. At the same time it was ascertained that amongst the first cases reported several had recently partaken of ice-cream at a certain shop kept by an Italian also within the affected district and separated only by a few yards from the above-mentioned dairy, and that although the ice-cream vendor occasionally used the milk for his own personal consumption from the same source as the majority of the persons attacked, that which entered into the composition of the ice-cream was obtained from a totally different part of the burgh and which was, and still is, entirely free from any similar cases. At this stage the milk was naturally looked upon with grave suspicion, but this was soon dispelled when it was found that the dairyman in question had other three shops in the town all supplied with the same milk, but to which no cases could be attributed, in addition to which it was all "pasteurised" before being retailed or sent out to his customers, with the exception of the morning's delivery which came from two farms in an adjoining county. That the latter also could have no causal relation to the outbreak was shown by the fact that the medical officer of health of the county from which the milk was obtained reported both farms to be in good sanitary condition in every respect and that there had been no recent illness amongst the dairy hands.

As the drainage, water, and milk-supply were thus shown to have absolutely no connexion with the outbreak attention was again directed to the ice-cream shop. When the inspector called to see the proprietor he was informed by the man in charge that he had not been at business for several days on account of illness, and on visiting him at his house, which was just above the shop and entering from a common passage, he was found to be in bed and without medical attendance. This information was immediately communicated to the medical officer of health who upon examination found that the proprietor had been ailing since Sept. 4th and that he had continued attending to the manufacture and sale of ice-cream in the said premises up to Sept. 15th, since which date he had been confined to the house from what he himself believed to be an attack of "influenza" but which undoubtedly proved to be enteric fever and presented all the characteristic symptoms of the disease met with during the third week of the illness. In order to demonstrate that the disease was unquestionably enteric fever a specimen of his

blood was sent to the bacteriological laboratory here for examination by Widal's reaction. A recent agar growth of the bacillus typhosus was employed in a dilution of 1 in 30, when agglutination and cessation of movement occurred within half an hour, thus proving beyond a doubt the true nature of the disease. The patient was again visited immediately after the reaction was found to be positive, when he was informed of the result and his shop was at once closed: the stock of ice-cream found on the premises was destroyed, the patient was removed to hospital, and the house and shop were thoroughly disinfected.

The result of further investigation was to show that without exception every one of the other 19 cases had used the ice-cream manufactured in the shop between Sept 4th and 15th inclusive, this being the period during which it had been exposed to infection. As the incubation period of enteric fever lies between the extremes of seven and 21 days the date of sickening in each instance was carefully gone into, the result of which was to show that corresponding to the shortest period within these limits the first case sickened on the 12th, whilst four sickened on the 13th, two on the 14th, eight on the 15th, three on the 17th, and one on the 19th, the extremes being in this outbreak between eight and 15 days, the usual average being regarded as from ten to 14 days. As the above source of infection ceased to be operative after Sept. 15th and as the recognised period of quarantine is 23 days and as this stage has now been passed, it is satisfactory to report that there have been no further cases in this connexion and that the outbreak is at an end.

A similar outbreak on a much larger scale has been recorded by Dr. A. Campbell Munro, medical officer of health of Renfrewshire, in the latter half of 1893.¹ That enteric fever may be spread by the use of ice and ice-cream has been conclusively shown by the fact that the micro-organisms of the disease have been cultivated after having been frozen in ice for 103 days.² The above facts show the absolute necessity of having all such premises duly licensed and inspected under the Dairies, Cowsheds, and Milk-shops Order, notwithstanding the judgment that an ice-cream vendor in whose business milk forms such an important constituent is held not to be a purveyor of milk (*Lang v. Pianta*, Jan. 22nd, 1894, 21 R. (J.C.) 20; 1 S. L. T., 474).

Govan.

A CASE OF ACUTE INVERSION OF THE UTERUS; REDUCTION BY TAXIS ON THE SEVENTH DAY AFTER LABOUR.

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IN THE LANCET of June 11th, 1904, p. 1649, I, in association with Mr. R. Muschamp, fully reported a case of acute inversion of the puerperal uterus in which reduction by taxis was satisfactorily effected on the eighth day of the puerperium. A similar case in which I replaced the uterus on the seventh day having recently come under my care is, I think, worthy of a brief record owing to the rarity of the condition.

The patient, aged 29 years, was delivered of her third child on July 4th, 1904. She was attended by a midwife. There is no sufficiently trustworthy history as to the events which occurred at the time. On the 5th, however, the patient sat up in bed to use the bed-pan and while straining she felt something come down. Severe hæmorrhage took place and a medical man who was sent for discovered the completely inverted condition of the uterus and as a temporary measure plugged the vagina. On the 6th the patient was anæsthetised with ether and a prolonged attempt was made to reduce the inversion. As further attempts might possibly have been harmful it was thought better to desist and to adopt gradual methods. Aveling's repositor was then inserted, but owing to the large size of the uterus it could not be kept in favourable position to be of use. On the 11th, being the seventh day of the puerperium, she

¹ Public Health, vol. vii., p. 30.

² Aids to Sanitary Science, by Dr. F. J. Allan, Medical Officer of Health of Westminster, 1903, p. 193.

came under my care in the Hospital for Women and Children, Leeds. A careful examination showed the uterus to be still completely inverted. There had been no further hæmorrhage, the lochial discharge being moderate in amount and not foul. The patient was very anæmic and the temperature was about 101° F. As the uterus still seemed fairly soft I decided to try if reduction could be yet effected provided no undue force were required. The patient was anæsthetised on this occasion with chloroform and was placed in the left lateral position. After the usual preparations I introduced my left hand into the vagina and grasped the inverted uterus in the hollow of the hand. The fingers of the right hand were employed for counter pressure on the rim of the inverted cervix through the abdominal wall. The depression caused by the inversion was easily defined. Without great difficulty I succeeded in gradually obtaining complete reduction until the fundus uteri could be defined through the abdominal wall and the shape of the uterine cavity ascertained to be normal by the fingers of the left hand following the ascending uterine walls. The uterus was washed out and carefully packed with iodoform gauze from above down. The gauze was renewed next day and at intervals for a few days during which the uterus contracted well and retained its normal shape. The temperature gradually subsided and the patient made a good recovery.

In attempting replacement of an inverted uterus at an interval of several days, as in my two cases, it is obviously a delicate question whether reduction can be safely done without injury. The possibility of inflammatory effusion and adhesion being present on the peritoneal aspect of the uterus and cervix has to be borne in mind. In both cases, as far as one could judge by the absence of pain and tenderness or the presence of any thickening or swelling in the pelvis above the cervix, it seemed probable that no such trouble was present. In both cases the actual reduction only took a few minutes and undue force was not required. I think possibly that the choice of chloroform instead of ether may have facilitated replacement, the uterine muscle being more easily relaxed by chloroform.

Leeds.

A FATAL CASE OF TABETIC GASTRIC CRISIS.

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I KNOW of no recorded case of this condition but I find in the newest edition of Church and Peterson's "Nervous and Mental Diseases," 1903, p. 428, this statement: "They [the gastric crises] may even cause a fatal termination." On the other hand, Gowers and Taylor write, even in the latest edition of their "Manual of Diseases of the Nervous System," vol. i., p. 416: "Even the gastric symptoms, prostrating as they are, are never fatal."

The patient was a good clinical witness; he neither exaggerated nor underrated his condition. He was bright, cheerful, and quite sound mentally, and continued his work till within a fortnight of his death. When he came to me he had been to all the well-known neurologists of London who had all diagnosed his case as one of tabes dorsalis. I saw him first on Sept. 14th, 1896. His age was 45 years; he was married and had several healthy children. He had syphilis when 25 years old (he was quite frank about this), otherwise he had a clean bill of health for the last 20 years. With regard to the history of the illness, for 18 months he had had attacks of severe vomiting, with only slight pain, of one or two weeks' duration (his stomach was said to be dilated, he told me). For from 12 to 15 months he had had little or no sexual desire. For three months there were "numbness of the calves, chiefly the right, and front of the knees," "tingling sensation of the leg," and the ground "felt peculiar." (These sensations had persisted.) He had lateral diplopia once; the date was not entered in my book. On clinical examination the gait was found to be normal and the knee-jerks were absent, even on reinforcement. The pupils were equal, circular, reacted well to light and on accommodation, and dilated well to shade. The ocular fundi were normal in all parts. The tongue was clean; digestion was stated to be good between the attacks. There was no bladder trouble but on further inquiry from me as to the appearance of his urine he said it had for two

or three years often been muddy. There were no girdle sensation and no lightning pains. Examination of the abdomen and chest was negative. There was no evidence of intracranial disease, especially cerebellar disease. There was nothing in his case to negative the diagnosis of tabes, for neither normal pupils nor absence of pains, ataxy, and optic atrophy, nor the "incomplete" nature of the crises could weigh for a moment with the positive points mentioned. I saw him again ten days later. He then felt numbness of the lower part of the thighs and he said that his gait was a little unsteady, but this was not obvious to me on testing it then. He was treated with tonics and cod-liver oil, and tepid brine baths were ordered, also salt douches to the legs after a hot foot-bath, and rubbing of the legs and back. His condition remained practically unchanged for just two years. I was then urgently called to him at his home as he had had an unusually severe gastric attack for about six days and it showed no signs of yielding. The patient when I arrived was vomiting frequently a thin watery fluid. At the beginning of the attack it was bilious. The tongue was clean and there was no diarrhoea. The knee-jerks were absent. Indeed, the only alteration I could detect in his condition after the lapse of the two years since I had last seen him was, in addition to increased thinness, the almost complete loss of pupillary light reflex in both eyes. The only point that perhaps threw some light on the severity of this attack was that during a few days' holiday a week previously, the weather being very hot, he had eaten very plentifully of raw greengages but he had had no diarrhoea. He was kept as much as possible in the prone position and had the bowel washed out. I never doubted the attack would cease in the course of a few days probably and I gave a good prognosis. However, he did not improve nor did he become appreciably worse till five days later, when his circulation failed ominously, according to Mr. H. J. Hildige of Pinner, who was in attendance on him. He rallied on the following day, when I saw him about 9 A.M. He was sleepy but answered questions well and correctly and was quite cheerful. He died, however, the next day; there was no post-mortem examination.

Though the case followed the rule that ataxy is either absent or slight so long as gastric crises occur, yet it was in some respects one of a rather unusual type. Möbius writes, in his very full article on Tabes in "Twentieth Century Medicine," vol. xi.: "Gastric crises may appear as the first signs of the disease and may continue for years before other symptoms noticeable by the patient manifest themselves." He writes further, on the same page: "The great majority of tabes patients, although constipated, have a good digestion." Gowers and Taylor also note this latter point. Of impotence in male tabetics Möbius writes: "That it generally develops sooner or later. May appear at a very early or at a relatively late stage. In rare cases the function suddenly disappears for ever. As a rule, desire becomes more and more weak and infrequent. The potentia generandi is probably often preserved unless a complication (epididymitis or sarcocele) is present. But finally an atrophy of the testicles may develop." Now, my case had at any rate great diminution, if not absolute loss, of sexual desire from early in 1895 to September, 1896, and to my surprise I found in 1898 that his wife bore him a child some time after the latter date, I think in 1897.

The lessons of an instructive case seem to me to be: a tabetic with severe incomplete gastric crises, great diminution of sexual desire, and good general health may show practically no change after the lapse of three and a half years with the exception of increased loss of flesh and some pupillary phenomena. He may become a father after some two years of his disease and still be quite near his death from intractable vomiting unless morphine be used. I think that we ought to try to cut short gastric crises by morphine before any marked degree of prostration be reached and I think also that tabetic patients should be kept from such dietary indiscretions as a surfeit of greengages.

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THE ENTRIES AT THE MEDICAL SCHOOLS.—Last week we published a table showing the entries at the medical schools in London and the provinces. We have now received the figures relating to University College, London, which are as follows: Full medical course, 30; special courses and preliminary science, 40. Last year the number of full medical students at this College was 25, so that this year there is an increase of five.