CASES ILLUSTRATING THE IMPORTANCE OF AN EXAMINATION FOR THE DIPHTHERIA BACILLUS.

BY

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At the London Fever Hospital, during the last two years, we have met with many instances of the value of a bacteriological examination for the diphtheria bacillus. In this short communication we propose to quote a few cases which appear to us to be of especial interest.

The method we have adopted has been the well-known one of cultivation upon the surface of coagulated blood serum, and, when necessary, the virulence of the cultivations has been tested by the inoculation of guinea-pigs.

SCARLET FEVER COMBINED WITH DIPHTHERIA.

Several observers have shown that the pultaceous or even membranous exudation upon the fauces, which often accompanies the acute stage of scarlet fever, is not caused by the diphtheria bacillus, and is therefore not true diphtheria. In a paper read by Dr. E. W. Goodall and one of the authors before the Clinical Society in 1893 this was insisted upon, and a number of cases were quoted in support of such a view. The authors did not deny that a true diphtheria might complicate the acute stage of scarlet fever; but they considered it to be uncommon. Our observations at the London Fever Hospital confirm these views, and the case we are now quoting is an exceptional one, in which the acute stage of scarlet fever was accompanied by an exudation upon the fauces produced by the diphtheria bacillus.

A boy, aged 9, was admitted into the London Fever Hospital suffering from scarlet fever. The history of the illness was that he was attacked with sore throat on the day before admission, and that the rash appeared within twenty-four hours of the onset. On admission there was a well-marked scarlatiniform rash, accompanied by the usual symptoms of scarlet fever. On the right tonsil there was a patch of whitish pultaceous exudation, similar in appearance to the exudation commonly met with in the acute stage of scarlet fever.

The case was put in the scarlet fever ward; and, simply as a matter of routine, a bacteriological examination was made. On the next day many typical diphtheria colonies developed in the tubes. The exudation spread to the opposite tonsil, but soon cleared off from both sides. Well-marked desquamation ensued, and followed the usual course. Cultivations were made from the throat at short intervals during the patient's stay in the hospital, and on each occasion diphtheria bacilli were found. They are still present at the time of writing, six weeks after admission.

POST-SCARLATINAL DIPHTHERIA.

A pultaceous or membranous exudation, occurring on the fauces during the convalescent stage of scarlet fever, is frequently a true diphtheria caused by the diphtheria bacillus. In some fever hospitals this post-scarlatinal diphtheria is very prevalent, and there has been much discussion as to its causation. The case we have above quoted points to one of the ways in which this may arise. Had the case not been recognised, it is quite possible that it might have given rise to an epidemic of post-scarlatinal diphtheria in the ward. The following case is instructive from the same point of view.

A boy was admitted with an ordinary attack of scarlet fever, accompanied with rhinitis. The symptoms disappeared in due course; but during convalescence the rhinitis re-appeared. This was considered to be a recrudescence of the rhinitis caused by the scarlet fever, especially as there were no other symptoms, and the throat was quite normal. A

bacteriological examination of the discharge from the nose was made, and virulent diphtheria bacilli were found.

DURATION OF INFECTION IN DIPHTHERIA.

At the London Fever Hospital no patient is considered free from infection until a bacteriological examination has shown the absence of diphtheria bacilli from the throat.

The time varies very much in different cases: the longest period of which we have notes was sixty-three days after the disappearance of the membrane. In this case a number of examinations at different intervals were made, and bacilli were always found. Towards the end, the virulence of the bacilli, which were of the short variety, was tested and found absent. Attempts were made to disinfect the throat with various antiseptic sprays, but with no effect. It should be mentioned that the boy was suffering from adenoid growths in the pharynx.

THE VALUE OF A BACTERIOLOGICAL EXAMINATION MADE SOME TIME AFTER A SLIGHT UNRECOGNISED ATTACK OF DIPHTHERIA.

The following case will serve as an illustration: A boy suffered from a mild attack of what was considered to be coryza, accompanied by a slight nasal discharge. He quickly recovered, and nothing more was thought of it until some cases of diphtheria broke out among his companions. It was then thought possible that the coryza might have been a mild attack of nasal diphtheria, and one of the authors was consulted. A careful clinical examination of the patient, made three weeks after the attack of "coryza," failed to reveal anything abnormal; a bacteriological examination, however, revealed the presence of diphtheria bacilli, which were proved to be virulent by inoculation. There thus appeared little doubt that the "coryza" was really diphtheria, and that the boy was in an infectious stage at the time of examination.

DIPHTHERIA BACILLI IN THE THROATS OF OFFICIALS IN ATTENDANCE ON CASES OF DIPHTHERIA.

A nurse, who was in perfect health, was in attendance upon cases of diphtheria. A systematic bacteriological examination of her throat was made. Although the throat appeared absolutely normal, yet diphtheria bacilli were present on each of many occasions during a period of six weeks. The bacilli were of the long variety, and were proved to be virulent. The nurse did not suffer at all in health.

An examination of the throat of another official, who was often in contact with cases of diphtheria, was made on one occasion. Diphtheria bacilli of the short variety were present, but they were found not to be virulent.

The throats of four other nurses in attendance upon cases of diphtheria were examined, but with negative results as far as the presence of the diphtheria bacillus was concerned. One of these nurses suffered on two occasions from a mild angina while on duty in the diphtheria ward. On neither occasion were diphtheria bacilli present in her throat.

TYPHOID FEVER AND OYSTERS AND OTHER MOLLUSCS.

By SIR PETER EADE, M.D., F.R.C.P.,
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THE striking array of facts contributed to the BRITISH MEDICAL JOURNAL of January 12th by Sir William Broadbent, coupled with the further evidence adduced in the editorial article in the same issue, as to the possible or probable connection, in some cases, of typhoid with the consumption of oysters, will necessarily at once challenge the attention of the whole medical profession. And no doubt in every fresh case of this fever occurring just now careful inquiry will be made as to the possibility of these molluscs having been the medium of conveying the infective bacillus into the stomach and intestines of the patient.

My object in writing is to point out that the oyster is not the only shellfish to which such suspicion may attach.

Some few years ago a considerable epidemic of typhoid disease occurred at Norwich, the poorer classes being those principally affected. As it was prolonged, and no definite cause could be ascertained for its continued prevalence, I took some trouble in the matter, and made many inquiries as to possible causes and sources of the disease. After a time one of the medical officers of the Local Government Board came down and inspected the city sanitary arrangements; and at an interview with him I mentioned a suggestion which had been made to me by a leading surgeon residing in one of our coast towns as to the possibility of mussels being a medium of contagion. We could not demonstrate this, and indeed it was then a mere hypothesis, but the suggestion was noted in the subsequent medical report to the Board, and as the epidemic shortly after this died out, the matter dropped.

It is well known that mussels are collected in large quantities on our shores, and are stored in the beds of our estuaries until required for sale. I have myself seen them lying stored in the bed of one such tidal estuary, into which the sewage of the adjacent town was (and I believe is) constantly discharged, although, of course, at a little distance from this "living fish warehouse."

If, then, oysters be proved to be capable of ingesting typhoid germs, and of passing them on undigested to human consumers, it seems in the highest degree probable that mussels also may be capable of being such carriers of contagion; and it is well known that these molluscs are constantly on sale on public stalls in our large towns, and are largely consumed by the poorer classes.

With the evidence now before us, and considering the seriousness of the matter, I cannot but think that attention should be directed to the mode of storing these, and that medical officers of health should forthwith insist upon their not being allowed to be placed in waters contaminated by town sewage. Doubtless the accepted view has been that current water, and especially sea water, was an immediate and complete destroyer of these living germs, whilst we should certainly have expected that the digestive processes of the mollusc would have destroyed their vitality. But the facts now being adduced appear to render this view doubtful and dangerous. Of course, the typhoid bacillus is specific, and, if no local typhoid disease existed, ordinary sewage matters could not propagate this disease; but it would become recurrently dangerous, as cases of this disease from time to time appeared or reappeared in the town draining into the water.

I may mention that quite recently I saw, in consultation, in one of our county towns, a case of typhoid, where the patient had visited London some ten or twelve days before his seizure, and had there eaten oysters.

MULTILOCULAR CYST—(?) OVARIAN OR MESENTERIC: ABDOMINAL SECTION: RECOVERY.

By GEORGE BUCHANAN, M.A., M.D., LL.D.,
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Mrs. M. D., aged 40, was admitted to the Western Infirmary on November 2nd, 1894. She is a healthy woman with a slightly sallow complexion. She has had eleven children, the last in October, 1893. Following on her last confinement she had an attack of influenza which confined her to bed for four months. Nevertheless, she has been nursing the child up till the present time, and has not menstruated. After recovering from influenza she regained her usual good health till about three weeks ago, when it became apparent to her that her abdomen was increased in size. On close questioning she admits that there may have been some swelling for a longer time as she was rather stout, and not particularly observant on the matter.

On examination the abdomen was found to be greatly enlarged: circumference at level of umbilicus 44 inches; from pubes to umbilicus 9 inches; from there to ensiform cartilage 8 inches; from right anterior superior spine to umbilicus 11

inches, and from there to left spine 10 inches. It was occupied by a globular mass, somewhat prominent at the umbilicus. This was decidedly fluctuant, with some feeling of resistance at the sides, suggesting the idea of some solid matter. Percussion was dull in front and at the sides, but tympanitic in the lumbar region. The mass was slightly movable from side to side. The uterus was low down in the pelvis, not enlarged, and movable in the vagina. The diagnosis was that of a multilocular ovarian tumour.

Abdominal section was performed on November 9th, Dr. Renton assisting. I made a long incision from the pubes to an inch above the umbilicus. When the peritoneum was opened the cyst bulged forward. Passing my hand all round in front and at the sides, no adhesions were detected, but, owing to the abdomen being completely distended by the mass, the hand could not be passed round behind to feel if there were any posterior connections. I therefore reduced the bulk by tapping, till most of the fluid ran out (280 ozs.), and it remained about the size of a young child's head. The fluid was oily or starchy looking, of a pale greenish-yellow colour, with some whitish flakes floating in it. Immediate microscopic examination of it showed abundant oil globules, epithelial cells, and cholesterine.

After its size was sufficiently diminished, I lifted it out from the wound, and, when half out, I found that it pulled after it the mesentery, which, along with a large loop of intestine running round, was firmly adherent. By carefully scraping and tearing with the finger-nail and a director, and cutting through—between two fine catgut ligatures—several fair-sized veins, which seemed to enter into the substance of the walls, I succeeded in separating all the peritoneal attachments, but, to my surprise, there was no pedicle nor any connection with the ovary or broad ligament, so that, when freed from the mesentery, it slipped out. A good many bleeding points on the edge of the torn mesentery were tied with fine catgut. A few clots which were lying among the coils of the intestine were removed, and a quart of tepid boracic solution was poured into the pelvis. I now passed down my hand into the pelvis, and felt and took between my thumb and finger the uterus and both ovaries, which seemed to be in their normal place, and in size and consistence were very much as they should be in a woman at the gestating age. I looked in and saw them, and in neither ovary could I find any indication of present or former cystic disease. I again poured in two or three quarts of tepid boracic solution, and removed it thoroughly with successive spongings.

The wound was closed with five strong silk deep sutures, and numerous surface silkworm gut sutures.

Result.—The patient never had a bad symptom, and made a rapid recovery. The wound was not uncovered till the fifteenth day, when the stitches were removed, and union was found to be complete throughout.

PATHOLOGICAL REPORT BY PROFESSOR COATS.

A large cystic tumour, whose external surface presents many tags of connective and adipose tissue. The wall generally is of a white fibrous character. Internally the cyst is seen to be divided by many partial septa, and in some places there are collections of developing cysts. In addition, the internal wall frequently presents a white flocculent deposit, and this in several places has a glistening satiny look; for instance, there is a flat deposit of this kind measuring 5 cm. by 6 cm. Microscopical examination shows these deposits to be largely composed of cholesterine.

MICROSCOPICAL EXAMINATION BY DR. SUTHERLAND.

Sections made through the entire thickness of the wall show essentially a fibrous structure. Externally there is a considerable amount of adipose tissue, and this also occurs, in less amount, superficially in the substance of the wall. The connective tissue fibres are disposed irregularly, interlacing throughout the tissue, which, tolerably rich in spindle-shaped nuclei, is permeated with numerous blood vessels. Internally there is no appearance of any definite endothelial lining, but applied to this surface, and adherent in part, are considerable masses of altered fibrin, with occasional leucocytes. Scattered irregularly throughout the entire thickness of the wall there are areas of massed leucocytes. These areas are of a size visible to the naked eye. In