

progressed, but no increase in the area of the vesiculated surface being perceptible.

It is probable that the term “Atrophic Cancer,” as applied to a vesicular disease, has crept into use from the observation of such cases as this, and the circumstance that all conditions of the tongue with this peculiar eruption have been confounded, has caused the term cancer to be improperly applied to Earle’s disease.

The conclusions I would wish to establish in this brief memoir are these:—That there are three distinct conditions in which a vesicular disorder of the tongue may be found—one, the curable complaint described by Earle, where, however, the whole thickness of its substance is engaged; the second, the incurable vesicular disease of which I publish an illustration, and for which I have proposed a distinctive name; and, lastly, that well-known state where the vesicles are superficial, and dependent on some disorder producing irritation or congestion.

ART. XIX.—*On an Outbreak of Small-pox, illustrating the Relation between that Disease and Cerebro-Spinal Meningitis.**

By THOMAS WRIGLEY GRIMSHAW, A.M., M.D., Univ. Dubl.;
Physician to Steevens’ and Cork-street (Fever) Hospitals.

IN *The Dublin Medical Journal* of July, 1873, I published a “Report on the Small-pox Epidemic of 1871–73, as observed in Cork-street Fever Hospital.” In that Report I referred to purpuric, or malignant, cases of small-pox, of which there were 49. I also referred to cases complicated “with cerebro-spinal meningitis, and two at least died from this affection, the cases otherwise not being severe.”

In *The London Medical Record* of August the 13th, 1873, a notice of my Report was published, written by Dr. Collie, the well-known authority on zymotic diseases. In that article Dr. Collie remarks as follows:—“Dr. Grimshaw, like one or two other writers, mentions cerebro-spinal meningitis as a complication, and that two cases of small-pox, not otherwise severe, died of this complication. The present writer (Dr. Collie) believes that the cases of small-pox in which cerebro-spinal meningitis is said to have occurred were not cases of small-pox, but true cerebro-spinal

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meningitis, accompanied by a purpuric eruption, not easily distinguishable from the eruption which appears in some cases of hæmorrhagic small-pox."

As it was evident Dr. Collie had misunderstood my remarks on this and one or two other points, I wrote an explanatory note to the editor of *The Medical Record*, on September 10th, 1873, in which I made the following statement:—

"There is no doubt whatever that the cases stated by me to have died of cerebro-spinal meningitis were cases complicated by that disease. Neither of the cases were complicated by purpuric spots, but had all the other symptoms of cerebro-spinal meningitis, a disease with which we are, unfortunately, but too familiar in Dublin, and of which I have myself treated many cases of every variety. The purpuric eruption is by no means a constant symptom in acute cerebro-spinal meningitis as observed in Dublin, and the symptoms referable to the spinal cord are generally, though not always, unmistakable, though very variable."

I have made the foregoing quotations as introductory to an account of a very remarkable outbreak of small-pox, which came under my notice during the months of December, 1875, and January, 1876, which illustrates the point raised by Dr. Collie.

CASE I.—On December 22nd, 1875, a man, calling himself Peter M., presented himself at Steevens' Hospital, at 11 a.m., stating he was unable to pass water, and requesting relief. He was admitted to the accident-ward of the hospital, a catheter easily passed, and a not very large quantity of apparently healthy urine drawn off. The man at this time complained much of pain in his back. During the night the patient got worse; he had no vomiting, but became weak, his eyes congested, and at daylight on the following morning a number of purpuric spots were detected over his entire body, but especially over his hips and thighs. He passed water during the night without assistance. On the following morning, at about 10 o'clock, I was called to see him, and found him suffering intense pain in the lower part of his back and in his legs; there was great debility, congestion of his eyes, and the purpuric spots above-mentioned, which were small, numerous, and shotty to the feel. His temperature was 102·3°, which quickly fell below normal as the patient passed into collapse. I believed the case to be one of cerebro-spinal meningitis, specially affecting the membrane of the lower part of the spinal cord. I treated

him accordingly, and ordered considerable quantities of stimulants. He was removed to the fever-ward, where such cases were treated on former occasions. The man was rather heavy, dull, and uncommunicative; it was, however, ascertained that he was aged twenty-two years; that his friends lived near Sallins, in the county of Kildare; that he was on his way home, having arrived from Liverpool on the morning of the 22nd, and finding himself unable to pass water, he applied at Steevens' Hospital. This information was obtained with great difficulty. The patient is said to have stated that he thought some of the men on board the ship he came in from America suffered from the same disease with which he was affected. The man died about 3 o'clock on the 23rd of December. The purpuric spots had increased in number and extent before death, the eyes and eyelids congested and purpuric, the eyeballs being protruded, and the face of a dusky hue. The *post mortem* examination was conducted by Dr. Bookey, pathologist to the hospital. The appearances were as follows:—Surface of the body livid, especially on the back and points exposed to pressure; decomposition appeared to have commenced over the lower portion of the abdomen; there were numbers of the raised purpuric spots already observed during life; the muscles were dark and soft, especially those of the scalp and lumbar region.

All the thoracic and abdominal organs, especially the kidneys, were intensely congested, and the serous membranes studded with purpuric spots. Blood was effused in the neighbourhood of the gall-bladder and along the ureters; ecchymosed purpuric spots were found on the visceral layer of the pericardium and on the lining membrane of the frontal sinuses.

The dura mater covering the hemispheres of the brain was congested; there was some slight lymph exudation following the course of the vessels on the convex surface of the brain. The membranes at the base were healthy, puncta cruenta increased and enlarged, slight sanguineous effusion into the lateral ventricles. A small firm white growth of cartilaginous consistence was found in the anterior cornu of the left lateral ventricle, the tænia semicircularis of the same side was somewhat thickened and opaque. A small sanguineous extravasation was found on the back part of the medulla oblongata. The membranes of the spinal cord were healthy as far down as the lumbar region, where they became congested, the cauda equina was congested and the nerves were slightly glued together by lymph deposit. Dr. Bookey remarked at the

time of the *post mortem* examination that the condition of the cord was such as is sometimes met with in cases of small-pox.

The case was recorded in the hospital books as one of cerebro-spinal meningitis, which title seemed fully justified by the symptoms during life and the *post mortem* appearances.

By subsequent inquiries we ascertained that the patient had left New York by the "Idaho," steamship, on the 9th of December; thus the time occupied by his journey from New York to Dublin was almost exactly that recognised as the length of the period of incubation of small-pox. The disease was not prevalent in Liverpool when the man passed through that port, but was epidemic in New York and Brooklyn at the time the "Idaho" left America.

CASE II.—In the ward to which Peter M. was admitted was a patient convalescent from scarlatina, who was awaiting his discharge, but not being considered free from contagion, remained in the hospital until the 4th of January.

This man, by name Peter R., aged twenty, was a member of the Royal Irish Constabulary force, had been admitted to hospital on the 13th of December, suffering from a mild attack of scarlatina. He was much alarmed at the appearance presented by Peter M. On January 4th, R. was discharged from hospital, and transferred to the Convalescent Hospital at the Constabulary Barrack, in the Phoenix Park. On the morning of his arrival at the barrack he again became ill, and a rash having appeared, he was re-admitted to Steevens' Hospital on January the 8th. It will be observed that a period of between thirteen and fourteen days elapsed from the date of admission of Peter M. to Steevens' Hospital and the onset of the attack in the case of Peter R. The case of Peter R. proved to be one of small-pox, confluent on the face, running the ordinary course. The patient was vaccinated and fairly marked, and the disease, although severe, did not at any time cause serious anxiety. He was discharged on March 9th, his face being pitted by the disease.

A most careful inquiry seemed to exclude the possibility of Peter R. having been in contact with any source of small-pox contagion other than Case I.

CASE III.—A. W., aged nineteen, another Royal Irish Constabulary man, was admitted on January 11th, suffering from a rather severe attack of scarlatina, and was, unfortunately, placed in

the same ward as Patrick R. (Case II.) The patient progressed favourably until January 26th, fourteen days after admission, when he was attacked by modified small-pox of a mild type. He had been successfully vaccinated, and his arm showed a good mark. He was discharged on March 9th, 1876.

CASE IV.—J. G., aged eighteen, a Royal Irish Constabulary man, admitted on January 24th, 1876, suffering from a slight feverish attack; he was placed in a fever-ward at the opposite side of a passage from the ward where Cases I., II., and III. had been treated; he quickly recovered, was up in a few days, and was discharged perfectly well on February 2nd, 1876. He again took ill on February 10th, and was re-admitted on February 14th, suffering from a mild attack of modified small-pox. The patient had a good vaccination mark; he was discharged on March 9th, 1876.

CASE V.—M. W., aged eighteen, a Royal Irish Constabulary man, was attacked on January 10th with a cold, which, not being considered worthy of regular hospital treatment, was sent to the Convalescent Hospital, at the Constabulary Barrack, and was placed (he states) in the same bed which Peter R. (Case II.) had occupied. On February 1st he was found to be affected with small-pox, and was removed to Steevens' Hospital, where he passed through a mild attack of modified small-pox. He had a good vaccination mark.

CASE VI.—Mr. H., a student, attending Steevens' Hospital, saw Case II. during the commencement of the "stage of scabbing" on January 15th, and again up to the 22nd of January. On January 30th he was attacked by febrile symptoms, and passed through a mild attack of modified small-pox. He also was efficiently vaccinated.

CASE VII.—T. S., aged nineteen, a native of Dring, in the county of Longford, employed in a large establishment in Grafton-street, was admitted to Steevens' Hospital, suffering from enteric fever and pneumonia, on November 4th. He was in the ward opposite that occupied by the small-pox cases. He was discharged on January 20th, having been convalescent and up for a considerable time before his discharge. He returned to his home near Dring, and on the fourteenth day after his return home was attacked by modified small-pox of a mild type.

CASE VIII.—A child (a boy) who was in the house at Dring to which T. S. went was attacked with small-pox sixteen days after his first exposure to the infection carried from Dublin to Dring by T. S.

The foregoing narrative is interesting from many points of view:—

1st. How insidious may be the introduction of a contagious zymotic! It is more than probable that if the symptoms in Case I. had been developed during a journey from Dublin to the country, or had first exhibited themselves on his arrival in a remote country district, that the patient would not have been seen by a medical man, and a dangerous outbreak of small-pox might have been the result.

2nd. The cases illustrate the importance of having special wards in all our hospitals for the isolation of doubtful cases and for the separate treatment of contagious zymotics. Thus the origin of Case II. was owing to the failure on my part to distinguish this case of malignant small-pox from cerebro-spinal meningitis. Case III. was placed in the same ward as Case II. by an error on the part of the nurse. Case IV. originated owing to disobedience on the part of the patient, who, when convalescent, communicated, contrary to orders, with the small-pox patients. Case V. appears to have arisen from carelessness at the Constabulary Depot. Case VI. arose from the risk necessarily run by our pupils when obtaining clinical knowledge. Case VII. had an origin similar to Case IV., and Case VIII. clearly arose from carelessness in the country.

3rd. Several of the cases illustrate the period of incubation of small-pox. The first is especially remarkable on this account. There seems to be no possibility of the man having taken small-pox in Liverpool, or of his even having had it developed when he arrived in that port, as inquiries have been kindly made by Dr. Trench, Medical Officer of Health of the Borough, and Dr. Harrison, Medical Officer of the Port of Liverpool. The second case also agrees exactly with the usually recognised period of incubation of the disease.

4th. The most interesting issue raised by a study of the account of this outbreak is—what was the cause of the mistake in diagnosis between malignant small-pox and cerebro-spinal fever of the purpuric variety? I must say that I am at a loss to give an answer to this question, and shall be thankful for any aid in its solution.

I have had very large experience in the study of both diseases, having had unusual opportunities of observing and treating both these terrible forms of disease, but on a careful review of all the symptoms of both diseases, I see no distinctive mark between black small-pox and black meningitis, when fatal within the first twenty-four or forty-eight hours. In the case under consideration it is probable that if the patient had been capable of giving an intelligible account of himself, there might have been a history of the onset of the primary fever of small-pox, but of this we heard nothing. The absence of vomiting proves nothing, as, although generally present in both, it may be absent in either disease. The seat of the pain in the back appears to be the most important point. There can be no question that the pain usually commences at and is most severe in the upper part of the spine in cerebro-spinal meningitis, while it usually commences and is generally confined to the lower part of the spine in small-pox. I have, however, seen cases of meningitis where the pain was most severe in the lumbar region, as in the case of M. The spots certainly have no distinguishing characteristic to guide us. Even the *post mortem* examination did not solve the question, for the conditions met with, while sometimes present in rapidly fatal cases of small-pox, have also been met with in cases of meningitis terminating fatally in a few hours—in fact, cases which killed so swiftly that but little lymph deposit had time to form. I admit that I have not seen a fatal case of purpuric meningitis where, on *post mortem* examination, the signs of spinal meningitis were confined to the lower portion of the cord only. I need scarcely say that I consider Dr. Collie's suspicions are fully justified by the occurrence of such cases as that of the man M; but it must be remembered that purpuric meningitis and small-pox have not prevailed simultaneously in Dublin. I may here remark that Dr. Stokes' name, "Malignant Purpuric Fever," is as applicable to malignant purpuric small-pox as to malignant purpuric meningitis.

On carefully reviewing my experience of epidemic meningitis and small-pox, I still find myself unable to fix upon any symptom, or group of symptoms, which could be relied upon as a means of diagnosing the rapidly fatal purpuric varieties of these diseases from one another. The excision and microscopic examination of one of the spots is the only suggestion I can make for solving the question, and it is more than probable that this method might prove ineffectual.