Considering this, and considering that as yet we have no evidence, *pro* or *contra*, of organisms in relation to cholera, it would be certainly better, for the scientific discussion of the ætiological question relating to this disease, to dismiss germs for the present from consideration than to allow them to obscure the facts, or to confuse or bias our judgment as to their meaning. In point of fact, both of the opposing views have actually been so embodied. In most people's minds, the "germ-theory", as it is loosely called, of cholera is identified with contagionist views; but, in the very philosophical work of Professor Nägeli of Munich, just published,* you will find a much more maturely worked out theory of *contagium vivum*, which is in accordance with Indian as well as with European experience.

[To be continued.]

REMARKS ON BATTEY'S OPERATION.

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II.—DR. SIMS'S CASES (*continued*).

CASE IV.—Miss D., aged 20, had never had a menstrual period without pain; but her sufferings were not confined to the period. She was never clear of pain in the pelvic region. She had had the best medical advice in the country without any benefit. She was admitted to the Woman's Hospital in October 1873. She had antelexion, small os tinæ, and contracted cervical canal, with hypertrophy of the anterior wall of the uterus. I promised to cure her by incising the cervix and enlarging the canal, so as to permit a free discharge of the menstrual flow. The operation was done, and she left the hospital not much improved. She returned a year afterwards (October 1874), suffering quite as much as, if not more than, she had ever done. On examination, I found that the cervical canal was nearly as much contracted as it was before the operation a year ago. And I also found, what I had previously overlooked, that the left ovary was the seat of disease, and was probably the source of all her suffering. We now spoke of Battey's operation, but concluded to repeat the operation on the cervix, not with the expectation of making a radical cure, but with the hope of ameliorating in some degree her dreadful suffering. The operation and its effects over, my patient went home; and returned to New York a year afterwards (1875), suffering as much, if not more, than she had ever done before. Then it was that we began to discuss in earnest the propriety of performing Battey's operation. Miss D. was willing to have it done a year ago; but now she was anxious for it. The operation was performed in November 1875. The left ovary, being the principal seat of pain, was extirpated by the vaginal incision. It was somewhat enlarged, and had undergone cystic degeneration. The pedicle was severed with the electro-cautery. This was followed by hæmorrhage, and it was necessary to apply a ligature. The operation produced a severe attack of pelvic peritonitis and pelvic cellulitis, which fortunately terminated by resolution. She was confined to her bed for several months, and barely escaped with her life. She left New York emaciated to a skeleton, and confirmed in the "opium habit". She returned again in October 1876, a most wretched sufferer, but plucky to the last; for she came expressly to have the other ovary extirpated. I did not have the courage to do the operation, though she begged for it. Yet I am sure she can never be restored to health but by Battey's operation by the abdominal section. Here again I made the mistake of removing but one ovary (instead of both), simply because it alone was the seat of the pain.

CASE V.—Mrs. C., aged 38, regular, but had suffered great and constant ovarian pain for more than eight years, which was aggravated during menstruation. The uterus was retroverted. The posterior wall was hypertrophied and tender on pressure. The left ovary was somewhat enlarged, and very painful on pressure. It seemed to be the centre from which radiated all her suffering. She had been under the care of Dr. W. T. Walker for a long time two or three years previously. He operated on the cervix uteri, hoping to relieve the pain of menstruation; and he adjusted a Hodge's pessary for the retroversion. The instrument could be worn with comfort for a little while, but soon the ovary would become prolapsed, and the instrument pressing on it would produce so much pain that it could not be worn. After several weeks of well directed effort by Dr. Walker to relieve her, she went home not

improved. Mrs. C. intended to return to New York for a repetition of the incision of the cervix uteri. But her visit was delayed till after Dr. Walker's death. She then came with her physician to see me.

I found the left ovary to be the source of all her suffering. I gave it as my opinion that there was no remedy for her but in Battey's operation. I advised her to submit to the operation, or to return home and stop all medication. The patient, her husband, and her physician went to their hotel, and held a consultation on the subject, and decided to have the operation done. I then advised extirpation of the ovary by the abdominal section, as in Cases 1 and 11, securing the pedicle in the lower angle of the incision, with the view of curing the retroversion at the same time that the diseased ovary was removed. The operation was performed in February 1876. She was stout and fat; the abdominal walls were thick, and the operation was by no means an easy one. Both ovaries had undergone cystic degeneration, and both burst and discharged their contents during the effort of drawing them up to the surface of the abdomen. Both pedicles were brought out at the lower angle of the wound, and clamped. This was evidently a mistake; for the ligaments were very short, and the walls of the abdomen very thick; and thus the traction on the pedicles produced such intense suffering as to necessitate large and repeated doses of morphia hypodermically. She died of peritonitis on the seventh day after the operation.

CASE VI.—Miss H., aged 20, menstruated at 14, the flow soon becoming regular and normal in quantity and quality. At 15, she had a severe fall, and was badly injured in the spine. She was never afterwards clear of pain in the lumbo-sacral region and through the pelvis. But the most remarkable feature of this case was coccygodynia of such intensity as to require large and repeated doses of morphia by the skin. The morphia never entirely controlled the pain, even when given in the largest doses. She groaned and moaned all day and all night. She appeared to be in constant pain, even when asleep. Indeed, it seemed that she had almost lost the power of sleeping; but, of course, she slept, although she declared she did not. Her mother thought she got short naps of sleep, but certainly never an hour or two continuously.

Her physician, Dr. Mitchell of Mount Sterling, Kentucky, after exhausting all his resources, sent her to Dr. Wright of Cincinnati, who performed Dr. Nott's operation of extirpating the coccyx; an operation which, based on the history of the case and the symptoms immediately following upon the fall, was certainly justifiable. But no benefit whatever resulted from it; and, after a few weeks, she returned home, suffering as much as she had before the operation.

A year after this, Dr. Mitchell sent Miss H. to me. It was truly pitiable to see one so young so worn down with physical suffering. The pain at the end of the spine was continuous and most agonising. It never ceased for a moment day or night. It was never modified in the least, except by enormous doses of morphia hypodermically, and often repeated. She could stand, and walk with unsteady gait, but she could not sit at all, because she could bear no weight on the coccygeal region or on the right nates. She lay in bed most of the time in a semi-erect position, always on the left side, the head bent on the chest, the knees flexed and drawn up towards the chin, with lumps of ice applied to the seat of pain. She usually kept her head covered to exclude the light. Photophobia was a marked symptom of the complete derangement of her whole nervous system. When her head was uncovered, her eyes, so sensitive to light, were kept half-closed, and she was frowning and blinking all the time. She had a strong intellect and a kind heart, but her long suffering had soured her temper and depraved her whole nature. She was at times dictatorial, self-willed, and obstinate. She would often cover up her head and refuse to see anyone, or to speak to her physician (Dr. Harry Sims), even when he spoke in the kindest and most persuasive manner. Her natural gentleness was submerged by her physical suffering. She fretted and whined like a sick infant; or she was dogmatic like a spoiled child.

The idea of examining the seat of pain produced in her great nervous agitation. She shuddered and shrank from even the thought of it.

I found a longitudinal cicatrix, an inch and a half long, over the coccygeal region, marking the seat of the operation performed a year ago by Dr. Wright for the extirpation of the os coccygis. This cicatrix was elevated a little above the level of the adjacent skin. It felt hard and gristly, and was exceedingly tender to the touch. Indeed, the gentlest touch produced intense suffering. Even titillation with a feather was agonising. The sensitiveness was not confined to the cicatrix alone. It extended for an inch or more above, and as much below it. It also extended laterally on the right side of the nates for about two inches, but not at all on the left. The skin on the right of the cicatrix was thicker than natural. Its follicles were hypertrophied. The skin of the whole sensitive region was thicker and coarser than that on the

* Die niederen Pilze in ihren Beziehungen zu den Infektionskrankheiten. By Professor C. V. Nägeli. Munich: 1877.

† Continued from page 842 of last number.

opposite side of the cicatrix; while the skin on the left side of the nates adjoining the cicatrix was natural in appearance, and its sensibility was normal.

The fall, the concussion of the spine, and the coccygodynia following immediately afterwards, all conspired to concentrate my attention on the chief point of suffering, the end of the spinal column. I could see the case only as Dr. Mitchell and Dr. Wright had seen it before me; so I determined to repeat Dr. Wright's operation, removing the tender cicatrix, a larger piece of the bony structure, and all the thickened supersensitive skin on the right of the original operation.

The operation was performed in November 1876. The wound did not heal entirely for about three months. The operation was not attended with the least improvement; and was, therefore, a perfect failure.

On February 1st, 1877, Miss H. was on the eve of returning home, worse, if possible, than when she came under my care. As I said before, she had suffered greatly from dysmenorrhœa ever since the fall, and she never ceased to complain of pain in the right ovary, but the excruciating pain of the coccygeal region masked all other symptoms, and naturally monopolised the thoughts and attention of every medical man who had seen her.

After my signal failure to relieve her in the least degree by the operation on the end of the spine, the idea occurred to me that all this exaggerated hyperæsthesia might possibly be merely a reflex symptom. Then it was that I turned my attention seriously to investigate the condition of the pelvic organs. A great obstacle to this investigation was found in the fact that she had a vaginismus of the worst sort.

On a minute examination, I found a well marked retroflexion, with the right ovary very painful. On pressing the ovary suddenly, she shrieked out, saying the pain shot from the ovary down to the seat of hypersensitiveness in the coccygeal region. I repeated this experiment several times, and she always declared that, while the local touch was agonising, the radiated pain was more so. I then came to the conclusion that the malposition of the uterus and the attendant ovaritis were due to the fall, and that the coccygodynia was simply symptomatic of the utero-ovarian trouble.

I then proposed Battey's operation, which this poor sufferer gladly and hopefully accepted. The operation was performed on April 6th, 1877, by the vaginal incision. The right ovary was soon seized, brought down, and crushed off with the *écraseur*. The operation was immediately followed by a severe attack of pelvic peritonitis and pelvic cellulitis. Her pulse went up to 130, and her temperature to 103½ deg. She had a pelvic abscess, which fortunately discharged by the vagina. She had pyæmic poisoning, and pyæmic abscesses in various parts of the body. Her sufferings were so greatly aggravated, that we were obliged to give her immense doses of morphia hypodermically to make life bearable. Altogether, she was made much worse by our well meant but misdirected efforts to relieve her; and she left New York seven weeks after the operation, in the most miserable condition imaginable.

If I had extirpated both ovaries by the abdominal section and secured the pedicle in the incision, as in Case I, there would have been some chance of radical cure of this case. As it is, she has been made worse by an operation half done.

CASE VII.—Mrs. G., aged 38, married at 20, enjoyed good health till the birth of her child fifteen years ago. Since then, she had not seen a well day. The labour was prolonged and difficult. It was followed by subinvolution and a train of uterine troubles that required constant care. In spite of the best medical aid, she grew gradually worse and worse; and she was eventually obliged to resort to opiates for the temporary relief of her inordinate suffering. In October 1876, her physician, Dr. McSherry of Martinsburg, Virginia, came with her to New York for advice.

She was naturally frail and delicate. She was anæmic and very thin, because she could not take enough nourishment. The daily use of morphia hypodermically, which was absolutely necessary, impaired her appetite and digestion. She had constant pain in the pelvis. She had had a severe form of dysmenorrhœa ever since the birth of her child (fifteen years before); and she was never at any time clear of pain, even when under the influence of morphia. She had retroflexion of the uterus, with great hypertrophy of the posterior wall, which was very tender to the touch. The os was exceedingly small. The cervix was of gristly hardness. The canal was contracted through its whole length to the cavity of the uterus. The os internum was abnormally contracted just at the point of flexure; and the passage of a small probe produced exquisite suffering. The uterus was bound down with adhesions to the rectum, for it could be elevated by the uterine repositor to an angle of only about 45 deg. above the axis of the vagina, and at that point the pain produced in the rectum became so intense that I

was obliged to desist. But the worst feature of the case was, that the ovaries were the source of all her sufferings. They were very tender and sensitive to the touch; and slight pressure, especially on the left ovary, produced the most intense agony.

I gave the opinion that the case was incurable, except by Battey's operation. Dr. McSherry thought it would be wiser to operate on the cervix first by incision, for the purpose of relieving the obstructive painful menstruation. If that should fail to give relief, then we might subsequently resort to the more serious operation of Battey. Accordingly, the operation of incising the cervix was performed. The cervix was so much indurated, that the noise made by the knife in the incision could be heard by the assistants. [Where there is such a gristly degeneration of tissue in the cervix, we can never expect any permanent relief from operation.] The induration and the grating sound of the knife at the os internum were as great as at the os externum. She menstruated more freely at the next period than she had done for many years, and the pain was less. But at the next period the canal of the cervix had contracted down nearly to the size it was before the operation, and the menstruation became again scanty and painful as before. The ovarian pains were not relieved in the least degree. Mrs. G. went home to await the full result of the operation; and, at the end of three months, being no better, she returned to New York with Dr. McSherry's full consent to the performance of Battey's operation. I was at this time fully persuaded that the easiest and safest method of doing this operation was by the vaginal section. Accordingly, the operation was attempted in May 1877. The incision in the vagina was made according to Battey's plan. In my three previous operations by the vagina, the opening into the peritoneal cavity was made easily enough; but in this case it was exceedingly difficult, on account of the adhesions between the rectum and the posterior surface of the retroverted uterus. These adhesions, which were old and dense, were broken up by the finger. Then, by the uterine repositor, the uterus was raised up into its normal position, which was impossible before the adhesions were broken up. Holding the uterus up with the repositor, and pulling its anterior surface forward almost in contact with the inner face of the pubes, I passed my finger into the peritoneal cavity, and attempted to bring down the ovaries. They were firmly bound down by strong bands of false membrane, and it was impossible for me to dislodge them. I made steady and determined efforts to remove them piecemeal, as Battey had done before, but (fortunately) I could not. Then, to my great mortification, I was forced to abandon the operation. Being a firm believer in Lister's antiseptic method, I tried it in this instance; and to this I attribute, in a great measure, my total failure to finish the operation; 1. because the carbolic spray corrugated the parts and rendered them dry and unyielding; and 2. because it deadened the sensibility of my finger, so that I could not distinguish one part from another.

It might well be asked why I did not complete the operation by the abdominal section. I did not, because my patient was very feeble, and quite exhausted by the half-hour's etherisation, and I thought it safer to stop at once, than to submit her to the anæsthetic for another half-hour.

In the three cases on which I had previously operated by the vaginal incision, all had pelvic cellulitis (one of them pelvic peritonitis). In some of Battey's cases by vaginal incision, similar results followed. In this case I feared the same unlucky complication, because of the extensive laceration of false membrane that bound the opposing surfaces of the uterus and rectum together. But there was no complication whatever. She recovered from the immediate effects of the operation at once. Her pulse and temperature rose but little above the normal standard, and only for the first twenty-four hours after the operation. Was this due to the antiseptic spray? If this operation had been performed by the abdominal section instead of the vaginal, both ovaries would have been removed entire with the possibility of a complete cure. I knew, before the operation, that the uterus and rectum were bound together by false membrane, because this bond of union had prevented me from replacing the uterus in its normal position. But I was then labouring under the delusion that, even with adhesions to break up, the vaginal route was safer than the abdominal, because it favoured drainage.

[To be continued.]

BILLROTH AND VOLKMANN.—Last week, the completion of Billroth's tenth year of professorship in Vienna was celebrated by a festival, at which, at least, fifteen hundred students were present. Professor Volkmann of Halle was honoured on December 7th with a numerously attended festival, in celebration of his refusal to quit the scene of his labours for the Chair of Surgery offered to him in the University of Würzburg.