fever does not appear, but even when it does the temperature is lower and the fever of shorter duration than is usually the

Case of Small-Pox: Treated in Red Light; no subsequent pitting.

case. As a result of the absence of suppuration the disease becomes of shorter duration and less dangerous, as the greater number of complications do not show themselves; further, the patient escapes pitting. Some authors have observed "minute scars" on the nose and fingers in some few cases; but this only proves that what are generally known as "pock marks" are done away with. It would seem that children—perhaps on account of their fine epidermis—are more completely exempted from scars than adults. It must, however, be mentioned that this treatment does not prevent the skin becoming hyperæmic where the vesicles have been; the hyperæmia, however, disappears after six to eight weeks, and it is then impossible to see that the person in question has suffered from small-pox.

From the above it is evident—so much so that I need hardly point it out—that this treatment is only a skin treatment; upon the infection itself it has no influence, or at least so slight a one that it is not worth noticing. Should the patient come under treatment after the fifth day of the disease, it is uncertain whether the suppuration can be avoided; sometimes this is the case, sometimes not; but it would appear that in such cases the treatment renders the suppuration less severe and less malign. Some authors (Feilberg) advise the use of the red light even when the suppuration is commencing.

METHOD OF CARRYING OUT THE TREATMENT.

As far as the carrying out of the treatment is concerned, the following main points must be noticed:

1. The exclusion of the chemical rays must be absolute; even a brief exposure to daylight may produce suppuration and its sequelæ. In other words, the skin during small-pox is as susceptible to daylight as a photographic plate, and must be kept from the chemical rays in the same way and almost as carefully. If, therefore, red window glass is employed, it is necessary for it to be of a deep red colour, and if curtains are used, they must be very thick or in several layers. When the patient takes his meals, or during the physician's rounds, artificial light—for instance, faint candle light—may be used without any danger. As even a brief exposure to daylight can produce suppuration, and as this treatment is somewhat burdensome for the nurses, so that they are often tempted to draw back the curtains, it is necessary when they cannot be depended upon to take care that the treatment is carried out correctly, for instance by nailing the curtains.

2. This method does not prevent but allows the employment of any other treatment which may be considered necessary.

3. The treatment should be commenced as early as possible; the nearer the commencement of the suppuration the smaller the chance of success.

4. The patient must remain in the red light until the vesicles have dried up.

A CASE OF MYOMATA OF THE UTERUS, WITH PREGNANCY OF FIVE MONTHS' DURATION: TOTAL EXTIRPATION OF UTERUS AND TUMOURS: RECOVERY.

By MURDOCH CAMERON, M.D.,

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THE following case is of interest from the rapid development of the tumours during pregnancy, and the almost complete obstruction of the parturient canal caused by them:

Mrs. C., aged 36, was admitted to the Western Infirmary under my care on July 16th, 1895, complaining of great distension of the abdomen. The patient considered herself about five months pregnant, but as the abdomen was so much distended she consulted me regarding her condition. She stated that she had always enjoyed the best of health until the spring of the present year, that menstruation commenced at the age of 15 and continued perfectly normal and regular until February, 1895, that she had been married for

about two years, and had had no children and no miscarriages.

About eight years ago the patient noticed for the first time and quite by accident a swelling in the left iliac region. It was about the size of a hen's egg when she first felt it. For a month or two it increased in size slightly, then ceased growing and remained stationary until she became pregnant at the end of February. On February 19th she menstruated for the last time. Three or four weeks after she began to be troubled with morning sickness, and about the middle of June she felt foetal movements for the first time. She was quite satisfied that she was pregnant; but what troubled her was the fact that her abdomen became so rapidly distended. It was, however, during the six or seven weeks previous to her admission into hospital that the distension seemed to increase most rapidly.

Her general condition on admission was not very satisfactory. There was great oedema of the legs and thighs but apparently no ascites. There was some dyspnoea. The mucous membranes were of a good colour. She had no difficulty in passing urine but her bowels had been very constipated. There was nothing abnormal in the lungs and heart; milk could be expressed from both breasts. The abdomen was much distended, presenting the appearance of a pregnancy at full time. It measured 37 inches at the level of the umbilicus. On palpating the abdominal tumours, a large smooth, round, hard swelling was found to occupy the left side. It crossed the middle line, and was continuous with a swelling on the right side, from which it was separated, however, by a sulcus. This swelling on the right side was elastic in consistence, but two or three hard rounded nodules could be distinctly made out upon its anterior surface. The uterine *souffle* could be heard over it, but no foetal heart sounds could be recognised.

On vaginal examination, the whole cavity of the pelvis was filled up with a hard mass firmly impacted into it, and continuous with the tumour above. So completely did this tumour block up the pelvic cavity that the forefinger could with difficulty be passed up the vagina. The uterus appeared to be very much drawn up, as the examining finger could not reach the os externum.

On July 19th, the patient was examined under chloroform, but nothing further was made out.

On July 22nd abdominal section was performed. On opening into the abdomen a large irregular tumour was met with, the left portion consisting of an interstitial myoma, the right of the distended uterus. In addition, implanted on the upper and posterior uterine walls, were several subserous myomata, varying in size from a walnut to an orange. Having made an incision through the anterior wall, a foetus of 5 months was removed. It was perfectly formed, and had evidently only quite recently died. The placenta was well developed, and was easily detached. An elastic ligature was passed round the uterus and tumours as close as possible to the cervix and secured, after which the uterus with the tumours were cut away. The uterine and ovarian arteries could now be more easily reached and were ligatured. The ovaries and tubes were also removed. The tumour blocking up the pelvis was with some difficulty drawn up on account of impaction and adhesions. Having enucleated this mass of tumour nothing remained but the cervix, which was also separated from its connections. The peritoneum was stitched round and round with catgut ligatures to the mucous membrane of the vagina. These ligatures were then drawn down into the vaginal canal by means of a pair of long forceps passed up into the abdomen through the vagina. The abdominal wound was then closed with silkworm sutures; no drainage tube was used. The parts removed weighed 27 lbs.

The patient made a good recovery. She had a little sickness on the third and fourth day, when the temperature thrice registered 100.2° F. After that it never rose above 100°, and fell to normal after the ligatures were discharged from the vagina on the tenth to the twelfth days. She left the hospital in the seventh week after the operation perfectly well.

A POST GRADUATE School of Medicine has recently been founded in Washington, where it is said to be much needed, as there is no school of the kind south of New York and Philadelphia.

THE TREATMENT OF MALIGNANT TUMOURS BY THE TOXINS OF THE STREPTOCOCCUS ERYSIPELATIS AND BACILLUS PRODIGIOSUS.

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THE treatment of inoperable malignant disease has hitherto proved so hopeless that it is not to be wondered at that we have been slow to believe that any remedy can do good in such cases, and that therefore the method indicated by the title of this paper has scarcely received the attention it deserves, although in proportion to the hopelessness of the case we should be glad to welcome any gleam of hope.

Malignant tumours have been known to disappear occasionally after the patient affected had suffered from an intercurrent attack of erysipelas, and when Fehleisen¹ made the important discovery that he was able to produce a factitious erysipelas by inoculating pure cultures of the streptococcus erysipelatis, he applied this knowledge to the treatment of malignant disease. Although only 1 of the 6 cases which he inoculated was reported as being well six months after inoculation, other inquirers were stimulated to work in the same direction, and Bruns,² Kleeblatt,³ Coley,⁴ and others have published cases in which an accidental or factitious erysipelas has exerted a beneficial or curative effect in cases of malignant disease. Sarcoma has generally been more amenable than carcinoma, and Bruns, in his record of 14 cases of malignant disease associated with erysipelas, found that of 5 cases of sarcoma in which the diagnosis was confirmed microscopically 3 were permanently cured.

Coley⁵ has collected 38 cases (including his own) of malignant disease, in which erysipelas occurred either accidentally or intentionally. "Of these 38 cases the erysipelas occurred accidentally in 23 cases, and was the result of inoculation in 15 cases." Seventeen cases were carcinomatous, of which 3 (17.6 per cent.) were cured, and 1 (5.9 per cent) died; 17 were sarcomatous, of which 7 (41 per cent.) were cured, and 1 (5.9 per cent) died; 4 were either carcinomatous or sarcomatous, of which 2 were cured. "Grouping by themselves then the cases where the erysipelas was artificially produced, we find 7 cases of carcinoma, 1 cure or 14.3 per cent., and 8 cases of sarcoma, 2 cures, 25 per cent." From these figures it appears that a factitious erysipelas has not been attended with such good results as regards disappearance of the tumours as an accidental erysipelas.

The reaction following inoculations (for Coley repeated them in the same patient) usually subsided in 36 to 48 hours, unless a definite attack of erysipelas was produced; but as the effect on the patient and the tumour was much the same in either case, Coley argued that the effects must be due to the toxic products of the streptococci rather than to the active development of the organisms themselves, and he therefore determined to experiment with filtered cultures, "the germs having been removed by means of a Kitasato filter, without subjecting the filtrate to heat."

Roger's⁶ researches pointed in the same direction, but he further found in experiments upon rabbits that the bacillus prodigiosus has the power of intensifying the action of the streptococcus erysipelatis, and therefore the toxins of the two germs were mixed—the filtrate in each case being obtained by means of a Kitasato filter as already explained. The advantage of using these filtrates, if successful, lay in the fact that the danger of an attack of erysipelas would be removed, and that isolation of the patient would not be necessary.

This was a great advance, and Coley⁷ confirmed the fact that the mixed toxins had a more beneficial effect than when used singly, and also found that in a certain proportion of cases (*vide infra*) the tumours disappeared. He subsequently thought that the filtration method failed to utilise anything of value in the bodies of the organisms themselves, and he therefore prepared the toxins "by subjecting the cultures to the lowest temperature (58° C) that would suffice to destroy the germs." In this way Coley⁸ has treated 13 sarcomata, with 3 cures, and 11 carcinomata with improvement only; or,