investigations, which showed that the brawny arm of breast cancer indicates arrest rather than great activity of the cancer process, and is produced by lymphatic obliteration. Its success confirms the pathological conclusions upon which it was based, and shows that the more recent methods of pathological histology are full of unexhausted possibilities.

MEANS OF PROMOTING THE NATURAL CURE OF CANCER.

We have seen that the natural local cure of cancer is brought about by fibrotic processes which cut off the cancerous epithelium from that contact with connective tissue cells which is necessary to maintain its vitality. Superficially, at any rate, this process presents some analogy with the natural cure of tubercle, which also takes place by a process of fibrosis. And certain cases in which I have seen great apparent benefit to cancer patients as the result of a change of residence from town to country, or from a sea voyage, lead me to suggest that the open-air treatment, which has proved so successful in tubercle, may be worthy of trial in the more chronic cases of inoperable cancer. The treatment as applied to tubercle would require modification for cancer; the carcinoma patient, for instance, as contrasted with the tuberculous patient, would probably require less food and more exercise; but there would appear to be no very strong objection to the tentative treatment of cases of inoperable cancer side by side with cases of tubercle in sanatoriums. Under no circumstances whatever should the treatment be recommended as a substitute for operation, if operation is possible.

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THE TREATMENT OF CANCER BY THE USE OF POTASSIUM BICHROMATE.

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[A PRELIMINARY COMMUNICATION.]

THROUGH the courtesy and indulgence of the Editor of the *BRITISH MEDICAL JOURNAL*, I am permitted to lay before the profession, of which I have the honour to be a member, a number of cases of cancer successfully treated by the use of injections of bichromate of potassium into the substance of the tumour. The dose used is from 7 to 10 minims of a sublimate solution; in some cases 15 minims are injected. In 1906 I submitted a paper on the treatment of rodent ulcer, which perhaps at that time was not of sufficient importance to claim publicity. Since then, however, about 25 cases of cancer treated by my method, with notes, were presented to the Académie de Médecine, Paris (November 29th, 1908). It is these cases, with notes, I herewith present for the unbiassed and charitable criticism of my professional brethren.

Fig. 1.—Case II. Cancer of breast beginning to slough.

she consulted me, having first consulted Dr. Jackson of Nelson, who informed her that the cancer had returned. There was a lump about the size of a hen's egg in the line of the cicatrix. I commenced treatment in January, and it was quite well in March, 1908. The result of the treatment is that there has been no further recurrence. She has lost the cancerous cachexia, and is looking quite well and feeling strong. This was a case of secondary scirrhus.

CASE II.

Miss N., of Nelson, aged 42. She came to me on May 21st, 1907, with a lump in the breast. This the Clinical Research Association, London, reported on as follows (May 30th, 1908): "This is evidently a malignant growth of a carcinomatous type. But the specimen is too small to say whence it has originated." She was not well until June, 1908, on account of my having been ill with rheumatic fever, and the treatment having been suspended. The photographs show the case when it began to slough, and when (on November 3rd) it was quite well.

CASE III.

Mrs. B., of Bristol, aged about 54. She came to me in June, 1906, with large growth in breast. The doctor in Bristol advised her to have breast taken off for cancer. On examination I found a large growth which had fastened itself upon the ribs just over the heart. She was under treatment about four months. When the slough came away a large portion of one rib came away also. Dr. Laurent, Professor of Operative Surgery at the University of Brussels, saw this case at my house. His opinion was that there had first been some tuberculous condition preceding the cancerous growth. I had a report from her on October 28th, 1908. She is quite well, with the exception of some peripheral neuritis. Her own doctor in Bristol is of opinion that the general neuritis is due to an exposed intercostal nerve—a nerve exposed by the portion of rib sloughing away. She put on 20 lb. in weight after treatment. She looks well and has lost the cancerous cachexia which previous to treatment was well marked. Dr. Dymoke and Dr. Reynolds, of Bristol, both say it was a case of cancer.

CASE IV.

Mrs. K., of Blackburn, aged 82. She came to me in 1906 with a large tumour in the posterior triangle of the neck. The Clinical Research Association report, November 3rd, 1906, was: "This specimen is a portion of the integument. Its deep surface is invaded by a new growth, which appears to be an epithelioma. There are no cell nests, but the central cells in the processes have undergone granular degeneration. The lesion is evidently a secondary formation." The photographs (see p. 590) show the growth previous to treatment and the condition afterwards. This patient died about December, 1907, from some intercurrent disease; I think it was bronchitis.

CASE V.

T. S., of Accrington, aged 77. He had a rodent ulcer on right right side of nose as large as a franc. He went to Dr. Frankish, who told him it was a cancer, and refused to attempt anything for him. He came to me on November 5th, 1907, and was well in seven weeks. I applied bichromate upon cotton-wool to the place, the cotton-wool remaining *in situ* until the following day. He had four applications. Slough followed, which separated in about three weeks, leaving a clean granulating sore, which healed up in a week.

Fig. 2.—Case II. Cancer of breast. After treatment.

CASE VI.

Mrs. McL., aged 52. First went to Dr. Reid of Preston, then came to me in February, 1908. The Clinical Research Association report, February 14th, 1908, was: "This piece of tissue is infiltrated by a carcinoma, which is spreading along the lymphatics in the cutis vera. The growth has the usual

characters of a scirrhus carcinoma." She was quite well on July 20th, 1908, as she was also at the last report on November 3rd. Accompanying are photographs (see p. 590).

CASE VII.

Mrs. P., aged 53. She saw Dr. Cran Duthie of Blackburn and Dr. Rawlins of Manchester—a cancer specialist—in May, 1907. Both advised her to have the breast off. She came to me the same month, and was quite well by October 20th, 1907. She

L. A. R., aged 47. She had her breast taken off at the Victoria Hospital, Burnley, in August, 1907. In January, 1908,

had about forty injections of 7-minim doses. She came to the surgery about every other day.

CASE VIII.

Mrs. G., of Blackburn, aged 68: She first consulted Dr. Taylor and Dr. Nutter, who told her she was too old to be operated upon. She came to me on May 9th, 1907, and was under treatment twelve weeks. The cancer was in the breast. The Clinical Research Association reported on May 13th, 1907: "This section of nipple shows at one end (marked with ink-line) a small area of tissue infiltrated with carcinoma. The growth seems to be of the columnar-celled type, such as would originate from duct epithelium." She had about twenty injections. She reported herself on November 3rd, 1908, as being quite well.

CASE IX.

A. P., of Blackburn, aged 42. He first saw Dr. Martin, senior surgeon to Blackburn Infirmary, and was operated upon for a growth in the root of the right ala of the nose. He came to me on November 26th, 1906. The Clinical Research Association reported on December 21st, 1906: "This growth is a carcinoma of the skin of the rodent ulcer type. It consists of branching, epithelial columns, possibly arising from sebaceous glands or hair follicles, and infiltrates the tissues with a characteristic rosetted outline." He had about forty injections, and was attending my surgery for about six months. He still keeps in perfect health.

CASE X.

J. H., of Lytham, aged 48. He first consulted Dr. Millan, of Lytham; then Dr. Sellers, of Preston Infirmary. He was operated upon by the latter at Preston Infirmary in November, 1905. He came to me in April, 1906, the growth having returned in four months. I gave him six injections, and he reports to me (November 3rd, 1908): "I enjoy the best of health, and have felt no effect of my lip since you treated it."

CASE XI.

Mrs. T., of Muswell Hill, aged 49. She came to me on June 9th, 1907, with cancer in the cheek, after having been eighteen months under treatment in London without any good result. The Clinical Research Association report of June 12th, 1907, was: "This specimen is a carcinoma of the skin, belonging to the rodent ulcer type. It consists of branching masses of small epithelial cells, and shows a tendency to cystic change in places from degeneration." In nine weeks she was quite well and returned home. I made nine to twelve injections.

CASE XII.

Mrs. B., of Blackburn, aged 57. In March, 1906, she consulted Dr. Bradley, of Blackburn, who advised her to have a lump cut out of her breast. She came to me and I found a lump as large as an egg. I commenced treatment in March, 1906. She had eighteen injections of bichromate (10 per cent. solution) of about 7 minims each, these being given every other day. A slough followed, which stank very much. In September she was quite well, and has kept well ever since. The later of the accompanying photographs (see p. 591) was taken on November 3rd, 1908.

CASE XIII.

Mr. E., of Harle-soike, Burnley, aged 28. He had a growth upon the upper lip. He first consulted Dr. Marsden, of Burnley, who for eighteen months treated it in various ways. He declared it to be cancer, and advised him to have it operated upon.

The patient consulted me in July, 1906. I used about six injections. A report from him on November 3rd, 1908, says he is quite well and there has been no return.

CASE XIV.

Mrs. B., of Church, aged about 50. She had a lump as large as a duck's egg in the breast. Two doctors told her it was cancer, and advised her to have the breast taken off at once. Instead of having that done she came to me in January, 1906, and by May was quite cured. I have a photograph showing the tumour in the sloughing condition coming away from the previously unaffected skin, and another showing the result after treatment. In November, 1908, I saw her again, and the condition remained healthy. A soft white scar was left. The glands in the axilla, which had formerly been enlarged, had now resumed their normal condition, and the patient said she had never felt better in her life.

CASE XV.

Mrs. A., of Colne, aged 46. She first went to Dr. Doyle of Colne, who said she would need to have her breast off. She came to me on September 22nd, 1906. She had fifteen injections of about 7 to 10 minims of potassium bichromate of unusual strength. On January 21st, 1907, she was quite well, and has remained so up to date (November 3rd, 1908).

CASE XVI.

Mr. B., of Accrington, aged 61. He first saw Dr. Greenwood of Accrington, who told him he had cancer of the tongue. He came to me about June 15th, 1906. He had six injections, and was quite well on September 15th, 1906. Report on November 3rd, 1908: "Quite well."

CASE XVII.

Mrs. P., of Clayton-le-Moors, aged 44. She first consulted Dr. Clegg, Surgeon to the Victoria Hospital, who told her she had cancer of the breast. She came to me on October 19th, 1906. She attended me about three months and had about forty injections. She was quite well on November 3rd, 1908.

CASE XVIII.

Mrs. B., of Blackburn, aged 46. She was operated upon in March, 1896, for a lump in the breast. The lump reappeared in September, 1907. Dr. Steward of Liverpool and Dr. Walters of Manchester (both specialists in cancer) declared the growth to be cancerous in 1896, and its reappearance in 1907 appears to confirm the diagnosis. She came to me in October, 1907. She had twenty injections, after which the growth sloughed out, and she is now quite well. She was under treatment about six months. Reported to me, November 3rd, 1908, as quite well.

CASE XIX.

Mrs. D., of Blackburn, aged 47. She saw Dr. Bowen and Dr. Shaw of Blackburn, who said she had cancer of the breast. She came to me in June, 1906, and was under treatment until November 20th, 1906. She had twenty-six injections, after which the growth sloughed out. The report to hand, November 3rd, 1908, says she keeps quite well.

I should like to call attention to two of the cases—namely, Nos. I and x—which prove to my mind that the treatment is superior to operation. Then, again, let me point out the important fact that in Case vii the result of the treatment is that, after the menses had been stopped

Fig. 3.—Case iv. Epithelioma of neck. Before treatment.

Fig. 4.—Case iv. Epithelioma of neck. After treatment.

Fig. 5.—Case vi. Scirrhus of breast. Before treatment.

Fig. 6.—Case vi. Scirrhus of breast. After treatment.

for some years, they were re-established, appearing regularly for five days every month without pain, just as in her early and healthy days.

Here, then, as the above cases abundantly show, is a treatment which can be carried out in every surgery. It is simple and inexpensive, within the means of the humblest patient, and I can conscientiously say in respect of rodent ulcer and epithelioma, which I have been treating for fourteen years, that it is a treatment that will be lasting in its effects, if carried out in the manner I will indicate in a future paper if permitted. There need never again be seen a case of rodent ulcer which has eaten away the eye or the frontal bones and exposed the brain. If any such case is seen again it will be the fault of the profession or the wilful neglect of the patient. If called upon for further or more detailed proof I will supply it with alacrity.

Cases Treated by Dr. Pilkington, of Philadelphia.

For the following three cases I am indebted to Dr. Pilkington, of Philadelphia, who came from America to my house in 1906, and stayed for a week in order to learn the treatment:

CASE I.

Geo. F., aged 68, painter, veteran of civil war. He first consulted me in July, 1907. He had an irregular lesion, about 4 cm. in diameter, just anterior to and on a level with the right ear, gradually increasing in size during the past six months, and with no tendency to heal. There had been no special treatment

for a malignant ulcer, it being treated as an ordinary one. The pathologist's report was that it was an epithelioma of a fibrous character. The edges of lesion were thickened and rounded, with a marked destruction of subcutaneous structures. There was no history of traumatism, but much exposure to the sun and weather. The patient gave a history of long bleeding fol-

Fig 7.—Case XII. Lump in breast. Before treatment.

lowing cuts or scratches, and this proved to be the case during treatment, bleeding from a needle puncture often persisting for fifteen minutes or more; and in August, 1907, he spent a week in the local hospital after a copious and unexpected haemorrhage from the lesion. There was difficulty in forming a firm slough, owing to a tendency for a haematoma to be formed after an injection; but when granulation set in healing was uneventful. After twelve months the cicatrix is soft and flexible and appears likely to be so permanently. Patient has recovered his health fully and is following his occupation.

CASE II.

Thos. G., aged 78, West Chester, U.S.A. Labourer. Veteran of war between the States. He said that for ten years he had had sore on left shoulder, which would respond but poorly to treatment. On examination I found a rather poorly nourished patient; general health much below par; a large pear-shaped superficial epithelioma over left shoulder, having its base at the spine of the left scapula and extending below the lower border of the clavicle, forming an ulcer the size of a man's hand, with a small island of undestroyed skin near the centre. From time to time the ulcer had been curetted, cauterized with nitric acid, and treated with astringent and mild caustic powders in an effort to heal it up, but never with more than slight success. On July 20th, 1906, I began to apply locally a saturated solution of potassium bichromate, repeated at irregular intervals, for although his treatment was entirely gratuitous, he never could be induced to report at regular intervals. In about five weeks a firm thick slough had formed, covering the entire ulcer, with the exception of the small island in the centre. After this he reported but once in two months, at the end of which time the ulcer was entirely healed to the centre point, where there was a firm scab; this is well shown in a photograph taken at that time. The newly-formed skin was very soft and pliable, well supplied with blood vessels, and more resembling normal skin than cicatricial tissue. He was ordered to report regularly to have this centre spot treated, but failed to do so. On my inquiry in November, 1908, he reported that this spot promptly forms a

dry scab, but that he daily knocks it off by carrying a shovel on that shoulder when following his occupation; the area of reformed skin retains its soft, adherent character.

I cite this case to show the penetrating properties of potassium bichromate, and the ease with which these rodent ulcers can be removed, without the patient's losing a day's work. I much regretted the intractable nature of this patient, for it entirely prevented me from observing the rapid growth of new skin over such a large area.

CASE III.

Thomas F. G., of Philadelphia, U.S.A., aged 48; occupation, contractor. Father died at 52 years, heart trouble; mother living, aged 70, healthy; brother killed on railroad; six brothers and sisters living, all healthy. No known case of cancer in family on either side. Patient lost one leg in railroad accident. First noticed fever blister on lower lip about November, 1905, which did not heal up. In July, 1906, he went to the Samaritan Hospital, where his disease was diagnosed as an epithelioma, and was treated by x rays for three months. The surface healed up, but he had a hard callus underneath, which was sore, much like a boil. On November 10th, 1906, he consulted a Philadelphia cancer doctor, who applied four plasters between that date and March, 1907; but the growth steadily got worse, half of the lower lip being now involved. Early in April, 1907, he entered a cancer sanatorium on the Upper Hudson, New York State, and was treated by plasters for six weeks; but the growth began to increase at an alarming rate, and the patient, becoming discouraged, returned home to consult his family. On May 22nd I saw him, in consultation with Dr. Macfarland, and found that the growth involved the whole

Fig 8.—Case XII. Lump in breast. After treatment.

of the lower lip and the chin to the lower border of the jaw, also extending around the left angle of the mouth and upper lip for half an inch. In the left cheek, and firmly attached to the cauliflower-like mass on the lip, was a gland-like mass of about the size of a large grape. The discharge was extremely offensive, and it was impossible to prevent its entering the mouth

with the saliva. The patient was very cachectic, about 50 lb. below his normal weight, and suffering from extreme nervousness with insomnia, due to anxiety as to the outcome of the disease. Advised that the exuberant mass be excised at skin margin, to prevent the extensive absorption of toxins. Excision was done under ether; the blood vessels ligated, for they were numerous and very large; no effort was made at resection, or to remove the mass from the left cheek. A simple dressing was applied until the following day, when the base was first injected with half a gram of a saturated solution of potassium bichromate. Injections were made every other day, the dose being increased until 1½ grams were used. There was considerable pain, but it was controlled by a judicious use of hypnotics, administered hypodermically a few minutes before the injection. A good slough formed of the whole growth, and came off early in August, 1907. A portion of the periosteum of the inferior maxillary bone, about the size of an almond nut, was destroyed, but granulations being free, with a good blood supply, healing rapidly followed, the patient being discharged November 1st, 1907.

At this time (December, 1908) the patient is in the best of health; the cicatrix is soft and pliable, and abundantly supplied with blood vessels, and there is but little deformity.

THE foundations of a medical institute for the education of women have been laid in Odessa.

A BILL has recently been introduced into the Pennsylvania State Legislature providing that a marriage licence shall not be issued until each of the applicants shall present to the clerk a certificate from an authorized practitioner stating that, to the best of his knowledge and belief, the person applying for the licence is not afflicted with pulmonary tuberculosis, epilepsy, insanity, imbecility, idiocy, or other hereditary disease.