SUMMARY OF ELEVEN YEARS' EXPERIENCE
OF RADIUM ON SUPERFICIAL CANCER, WITH
EXHIBITION OF CASES NINE YEARS CURED.

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IN 1904 I had the privilege of relating to you my experience of radium in the treatment of certain diseases, and in 1906 I exhibited at this Academy cases of superficial cancer (including rodent ulcer) cured by it.

It occurred to me that it might be not only interesting, but instructive, if I were to give you a further record of these cases, together with an *epitome* of my experience consequent on the uninterrupted application of this method of treatment ever since. It is just possible such a report is more likely to be of service in view of the fact that while the literature of radium-therapy has since accumulated with almost lightning rapidity, still the widest diversity of opinion exists amongst *bona fide* workers of all nations not only as to the possibilities and limitations of radium-therapy, but also as to its action on human tissues in health and disease. In my former paper in 1904 I referred to a few of the many difficulties with which early workers were confronted. Amongst others, I mentioned the difficulty of procuring, in sufficient quantity, radium of a reliable standard of radio-activity. I also referred to our almost total ignorance regarding the

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method of applying it, and our crude conceptions as to dosage. I had hopes that many of those difficulties would solve themselves in the process of time, and that out of the chaos then existing would filter, consequent on experience, data for our further and better guidance. I had also cherished hope that in the light of modern research a better understanding as to the nature and causation of cancer would do much to elucidate many of the vagaries of this most mysterious remedy, and so rid the public mind of some of the horrors which the word malignancy conveys. The author then gave a *résumé* of the evolution of this method of treatment, mentioning the various pioneers and workers in this field of research.

The patients, whose history follows, were shown to the Section, many of them for the second time.

CASE I.—Mrs. F. X., aged fifty-three; married. Has four children, all living and healthy. Admitted to City Skin Hospital on the 3rd of July, 1904.

Personal History.—The little lump which she took to be a wart began about ten years ago. Not having caused her any inconvenience except slight itching occasionally, she did not bother consulting a doctor. In about two years from its onset the pimple or wart used to bleed if irritated with the towel in drying. About this time it was the size of a sixpence. She noticed it becoming softer and larger and discharging a little. The itching was less, but she began to notice a few darting pains. She now consulted a doctor, who prescribed a powder which she thought dried it up, but as the sore appeared to be spreading and the darting pains became more constant she consulted a surgeon early in 1902, who did not consider her case a suitable one for a surgical operation. She continued under his care for a year and eight months. The surgeon meantime died, and she came to the City Skin Hospital.

Condition on Examination, July 3rd, 1904.—There was an

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irregular area of ulceration, a little smaller than a florin on the left cheek close to and slightly lower than the ala of the nose. It presented all the typical characteristics of rodent ulcer. The edge was well raised, distinctly serrated or bitten out. The floor of the ulcer had extended down to the left superior maxilla; the floor was very irregular, and from it exuded a copious thin fluid. Under local anæsthesia a small piece of the growth was removed; microscopic examination of this confirmed the clinical diagnosis.

Between the 3rd of July, 1904, and the 15th of January she had in all thirty-five exposures of radium bromide—thirty of fifteen minutes with 5 mg. and five of 50 mg. After the first ten exposures the discharge steadily became less, the raised, rolled-in edges softened and became perceptibly less pronounced. After the twentieth exposure a reaction set in with increasing pain, swelling and tenderness of part, the temperature running up to 100° F. All treatment was suspended for a month. During this time the floor of the ulcer became smooth and filled in considerably. Pain, tenderness, and swelling had now subsided. The further treatment went on uninterruptedly until January, 1905, when she was discharged with the sore perfectly healed over as seen in the illustration.

CASE II.—Mrs. R., aged forty-eight; married. Three children living and healthy. Her parents lived to seventy-five and eighty respectively. She complained of a sore on the left side of her nose for about six years. She had it scraped in 1900 and burnt twice afterwards, the last time in 1903. At first it came as a little pimple, which afterwards formed into a small crust which became itchy and bled on being scratched. The rubbing in drying the face used sometimes draw blood. It did not spread much, but it seemed to grow deeper, and for the past three years a few stinging pains made her think it was not an ordinary wart.

Condition on commencing Radium Treatment, May 4th, 1904.—An ulcerated patch the size of a shilling, involving the left ala of the nose. Edge irregular and somewhat raised above surrounding tissues. The floor of the ulcer was studded over with granulations which bled freely; the

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CASE III.

underlying cartilage could be distinctly felt with the probe; on removing the probe free bleeding took place. Removal of a portion of the growth revealed the presence of cell nests very distinctly.

From the 4th of May to the 7th of July she had in all eighteen exposures of radium bromide—sixteen of fifteen minutes with 5 mg. and two of thirty minutes with 50 mg. After the first fifteen exposures the edges of the ulcer slowly but steadily melted; the discharge, which was never excessive, entirely disappeared. The floor of the ulcer had by this time become flush with the surrounding surface. On the 7th of July it had completely healed over, presenting a cicatrix pretty much as you now see it almost two years later.

CASE III.—Mrs. F., aged forty-seven; married; one child living and healthy. Admitted to City Hospital for Diseases of the Skin and Cancer on the 1st of November, 1904.

Present History.—A small spot, about the size of a pea, occurred under the left eye about eight years ago. She frequently picked off the scale, but it always soon reformed, and the sore appeared to increase somewhat. Had itching but no pain until latterly, when she observed some darting pains occasionally.

Condition on Admission, November 1st, 1904.—A small encrustation, about the size of a threepenny piece, under the left eye, situated midway on a line drawn from the left outer canthus to the left ala of the nose. Border slightly raised; slight exudation with frequent formation of crust. From the 1st of November, 1904, to her discharge on the 10th of March, 1905, she received forty-seven exposures of radium bromide of from ten to fifteen minutes' duration. On the 11th of August, 1911, she presented herself to me at the City Hospital for Diseases of the Skin and Cancer, nearly seven years after the original growth had completely disappeared, with metastasis in left cervical glands, of one month's duration, nearly the size of a plum, from which she died eleven months later.

CASE IV.—Miss B., aged twenty-six, shirtmaker, was admitted early in 1904 for radium treatment to the City Hos-

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pital for Diseases of the Skin and Cancer. A growth on the left cheek, about the size of a shilling, slightly elevated above the surrounding skin. There was no pain and no discharge. Within the last few months she thought it had increased in size.

Condition on Examination, January, 1904.—A darkish brown patch, about the size of a shilling, slightly raised above the surrounding surface of the left cheek, with most of the characteristics of a mole. It was painful on pressure. There was neither ulceration nor itching. Unable to procure a specimen for microscopic purposes, fearing the disfigurement might be increased by so doing.

During nine weeks' treatment she received forty-one exposures of radium bromide, varying in duration from fifteen to forty-five minutes.

The growth steadily broke down, leaving a pliable, smooth cicatrix, scarcely perceptible but for the presence of a very slight dimple.

CASE V.—Miss S. F., submitted to radium on the 4th of September, 1911.

Personal History.—She suffered from a warty patch on the side and tip of the nose for seven years, during which time it increased from the size of a sixpence to that of a half-crown. She had various treatment, medical and surgical, including ionic medication, but it continued to spread and become more troublesome, hot, itchy, and painful by times.

Condition on Examination, September 4th, 1911.—An area of ulceration on the left side and tip of the nose, the size of a half-crown, irregular in outline, margin somewhat raised and hard, the floor of the ulcer irregular, and studded over with unhealthy granulations which bled on being touched.

From September, 1911, to February, 1912, she had thirty-eight exposures, varying in duration from fifteen minutes to two hours. She had four exposures of two hours with 50 mg. radium bromide.

CASE VI.—Mrs. M'K., aged sixty-nine; married. Admitted the 10th of September, 1911; discharged the 17th of December, 1911.

BEFORE TREATMENT.

CASE V

AFTER TREATMENT.

BEFORE TREATMENT.

CASE VI.

AFTER TREATMENT.

Personal History.—For about twenty years she suffered from a lump on the back of her hand which caused her no trouble or anxiety until about four years ago, when stinging pains shooting up the arm were first noticed. These grew steadily worse. About this time she consulted “Nature’s Doctor,” whom she described as the seventh son born of the same parents without a daughter intervening. He massaged the lump, but she thinks it grew more steadily larger. Early in 1911 the pain became more severe, especially at night. Shooting pains were now pretty constant, and the back of her hand became swollen. Her power of gripping things became very feeble. She now consulted a doctor, who advised her to go at once to a surgeon and have an operation done without further delay. She did not think her chest would stand being put to sleep, as she always suffered from bronchitis. So she delayed going to the surgeon recommended.

Condition on Admission to Radium Treatment.—A fungating growth on the back of the left hand nearly as large as a plum. It bled on being touched. It was irregular in outline and uneven on surface. The hand was swollen and the back of the hand and wrist œdematous. She had acute pain, increased on lowering the hand by the side, and her power of grasp was perceptibly diminished.

She had fifteen exposures of thirty minutes and five of one hour’s duration.

The growth steadily melted down. The discharge was copious in the early stage of irradiation, but diminished later. The cavity consequent on the disappearance of the growth slowly filled up, leaving healthy scar tissue and slight depression to mark the original position of the growth.

CASE VII.—Mrs. D., aged sixty-nine; widow. Admitted to the City Hospital for Diseases of the Skin and Cancer on the 25th of June, 1912; discharged cured on the 8th of November, 1912.

Personal History.—Suffered for nine years from a small lump on side of lower jaw. For the first three years she took no notice of it. It was slightly itchy at times, but not troublesome; sometimes she used to hurt it when washing

BEFORE TREATMENT.

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CASE VII.

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CASE VIII.

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the face, and a little blood might be seen on the towel. For the past six years she noticed a moisture like clear water; sometimes it was mixed with blood. She has not been able to rest on that side at night for at least five years.

Condition on commencement of Radium Treatment, June, 1912.—An ulcerating growth on side of right cheek as large as a good sized plum. It was distinctly adherent to the left inferior maxilla. The edges were distinctly raised and serrated. Floor of ulcer irregular. Watery matter mixed with blood exuded on pressure. With the probe the mandible could be clearly felt, in parts denuded of its periosteum. Microscopic specimen showed cancer with a few cell nests.

Had in all forty-three exposures of radium, varying from thirty minutes to two hours.

CASE VIII.—P. K., aged fifty-nine; married; three children all living and healthy.

Personal History.—Thirteen years ago a small wart grew on the side of the nose; sometimes itchy, and when scratched or rubbed with the towel it bled. Within the last three years it became larger and sorer; applied various ointments and washes, but it never disappeared.

Condition on Admission, June 6th, 1913.—An irregular ulceration of left ala of the nose and adjoining tissues of the cheek. The inflammatory area corresponded to the size of at least a two-shilling piece, from which there was a copious discharge of foul-smelling pus, mixed with blood. The ulcer presented an eaten-out border; the floor was distinctly uneven, and covered with unhealthy granulations, which bled freely on being touched.

From June to November, 1913, he was subjected to fifty exposures. After the twentieth exposure a rather sharp reaction manifested itself. The edges of the ulcer became swollen and very tender. The discharge increased, and assumed the colour of dark blood. The odour was very foul-smelling. The temperature reached 102° F., and all the aforementioned symptoms persisted for twenty-four hours. The patient remained in bed under restricted diet, with hot boracic fomentations to the ulcerated region. The end of the second day the temperature reached normal again, the

soreness and excessive discharge grew steadily less. Radium treatment was resumed in three weeks from onset of reaction and continued uninterruptedly until the date of his discharge, November 8th.

[A large number of lantern slides from photographs of these and other patients showing their condition both before and after treatment were shown at the meeting. Thirteen of these are here reproduced.—ED.]