also noted in hypertrophied tonsils. This improvement in nose and throat conditions can be accounted for, to some extent, by the throat and nose operations performed last year on recommendation of the school physicians.

The decrease in cervical glands is partly due to the fact that this year school physicians have been instructed not to report slightly palpable glands when secondary to adenoids, tonsils, carious teeth, pediculosis, or some allied condition. These cases are kept under observation, and only the primary causes reported.

In 99,862 pupils examined last year, forty-four cases of pulmonary tuberculosis were found. In 104,287 physical examinations for the present school year, there were only twenty-two cases reported. This is certainly a remarkable showing, and it is hoped that future reports will continue to note a marked diminution.

In commenting on the report of last year, the editor of the JOURNAL stated, referring to cardiac diseases, "After all, the majority of children with organic lesions will always be handicapped, and all the medical care in the world cannot bring them up to the average physical standard." A comparison of the tables of last year and this year would seem to indicate that this observation was well founded.

The decrease in nervous diseases, organic and functional, including chorea, is encouraging.

The various activities of the School Department that have for their object the prevention of dental disease are too broad to discuss in this article. This year the medical department has paid special attention to the kindergarten and lower grades and has devoted much energy to securing the coöperation of the various dispensaries. Encouraging results are expected from this work in the near future.

THE USE OF RADIUM IN THE TREATMENT OF CUTANEOUS EPITHELIOMA AND KERATOSIS SENILIS.

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WHATEVER discrepancies of opinion which exist at the present time with respect to the value of radium in systemic malignant neoplasms, there seems to be unanimity of opinion regarding its efficacy in the treatment of epithelial tumors of the skin, and to which should be properly appended keratosis senilis as a precancerous lesion.

Since the early work of Wickham and DeGraiss in France, and Abbe and Simpson in this country, evidence in favor of radium treat-

ment for skin cancer is cumulative. While it should never be the brief of the physician to avoid surgery, except when other methods warrant it, yet it should be granted that if surgery can be avoided in a given affection and equally good results obtained, there are distinct advantages in favor of such procedure.

The efficacy of x-ray, for example, has long been conceded, as statistics tend to prove. But here one is confronted with increasingly complicated apparatus and corresponding delicacy of technique. Accurate dosage in x-ray therapy has always been difficult to obtain and even today, with the more perfected tubes and direct methods of gauging dosage, the margin of safety is still rather narrow and demands an operator of the utmost skill.

It is not our purpose to eulogize radium in too optimistic terms, and in general we are interested mainly in the cure of our patients by any means whatsoever. Our experience in the use of radium during the past two years, however, prompts a cordial appreciation of its ability to heal skin cancers; while its uniformity of potential, allowing accuracy of dosage, together with a fairly broad margin of safety, renders it a remedy especially adaptable to lesions of this nature. Healing is obtained with slight inconvenience to the patient; no discomfort of any moment and with cosmetic results unobtainable by any other means.

The following case reports, taken from private practices of the writers, are illustrative of types amenable to radium treatment. The results were obtained by one-half and one-quarter strength applicators, collectively containing eight milligrams of radium element.

CASE 1. Mr. F. B. N., aged 47. Quarter-sized epithelioma of one year's duration on the right cheek.

Radium in a half strength applicator was applied for seven hours, divided in seven treatments

FIG. 1.

FIG. 2.

of an hour each at weekly intervals. Twelve weeks after the first application the lesion was completely healed. There was no sign of a recurrence after four months.

CASE 2. Mr. A. M. C., aged 42. Dime-sized, superficial epithelioma on the concha of the left ear, of nine months' duration. A slight exposure for three hours of unscreened, half strength radium applicator was sufficient to eradicate the lesion. Complete healing took place in one month.

CASE 3. Mr. S. K., aged 65. Recurrent epithelial growth, 1 by 2 cm., at the periphery of a scar of an old growth curetted some years before from the right cheek. The lesion completely healed in two months' time, after two treatments for an hour each, at four weeks' interval, with a half strength radium applicator.

CASE 4. Dr. X., aged 60. A small ulcerated epithelioma, $\frac{3}{4}$ cm. in diameter, situated on the left ala nasi. The borders of the lesion were firmly indurated. The affection was first noticed four or five years ago as a small keratosis. It remained practically stationary until three months ago, when it began to enlarge and become a nodule.

Radium was applied to this patient for an hour and a half, divided into two applications of three-quarters of an hour each, at weekly intervals. Quarter strength applicators were used. Complete healing ensued; the scar was slight and plastic, and there has been no recurrence after an interval of seven months.

CASE 5. Mr. G. A., aged 70. Recurrent epithelioma in cicatrix following excision and treatment by x-ray. The affection began five years ago over the left mastoid region and became an ulcerated nodule 2 by 3 cm. in diameter. Two years ago the lesion was excised but it recurred in three months.

A total time of six hours' application of radium was made to this lesion, divided into three exposures. Quarter strength applicators were used with a screen of .5 of aluminum. Healing was complete in two months. The cicatrix is still sound with no evidence of relapse after seven months.

CASE 6. Mr. G. E., aged 79. Epithelioma over

right malar prominence, 3x3 cm. in diameter. The lesion was mainly ulcerative, but there was also a characteristic indurated periphery. There were also several small keratoses on various parts of the face which were also removed by radium. This epithelioma was given a total dosage of seven hours, unscreened, each exposure lasting from one to two hours. Some time was needed in this case to remove a deep nodule at the upper part of the lesion. The patient is still coming for treatment of a keratosis on one side of the neck. The scar at the site of the recent epithelioma is observed to be sound.

CASE 7. Miss R., aged 40. Two small nodules, $\frac{1}{4}$ cm. in diameter, near the muco-cutaneous border on the left lower lid. The affection had been noticed for about six months. The nodules disappeared following three hours' radium application. Light screening with aluminum foil and $\frac{1}{4}$ -strength applicators were used.

CASE 8. Mrs. P. M., aged 78. Epithelioma of left side of lobe of nose, recurrent in cicatrix. This lesion was treated by one of us with x-ray three years ago. There have been three recurrences during this period. After five hours' treatment with radium, complete healing ensued, and there is no evidence of return after a lapse of seven months.

CASE 9. Mr. J. E., aged 65. Extensive ulcerative epithelioma of the nose. The affected area is roughly quadrilateral in shape, the lateral diameter being two inches, the perpendicular diameter two and a half inches. The borders of this lesion are indurated and everted; the central portion is an ulcer.

To this epithelioma a total exposure of eighty hours was given, divided usually into two- and three-hour treatments. With the longer applications light lead screening was used.

After four months there remain but two palpable nodules. These are at present under treatment.

CASE 10. Mrs. P., aged 68. Nodular and ulcerative area on the left side of frontal region, approximately an inch in diameter. The patient's family physician had frequently cauterized the outbreak, but it had invariably relapsed in the scar. Here was complete healing after three hours of radium.

CASE 11. Mrs. J. V., aged 65. Small nodule, $\frac{1}{2}$ cm. in diameter, on the external surface of the left auricle. Complete healing occurred from four hours' exposure.

CASE 12. Miss L. R., aged 38. Epithelial nodule, occurring at the border of a pigmented nevus. Healed after three hours' exposure.

CASE 13. Mr. F., aged 55. Keratosis sculis. Several small keratoses on the external surfaces of both auricles. Each lesion was given one hour's exposure with $\frac{1}{4}$ strength applicators. Prompt healing followed.

CASE 14. Miss B. E., aged 35. Small epithelial nodule at the left inner canthus. Complete healing with three hours' exposure. Light aluminum screening was used.

CASE 15. Mr. A. J., aged 80. Epithelioma, nodular and ulcerative, on the left side of the forehead, one centimeter in diameter. Complete healing after four hours' exposure; $\frac{1}{4}$ strength applicators were used, without screening.

CASE 16. Mr. J. O., aged 58. Ulcerated nodule, $\frac{1}{2}$ cm. in diameter, on left lower lid. The patient also has numerous keratoses. The nodule and also several of the more prominent keratoses were healed with five hours' exposure.

CASE 17. Miss W., aged 54. Two small keratoses, one on either side of the nose. Each lesion healed after exposure of one-half hour, without screening.

CASE 18. Mrs. M., aged 56. Three small keratoses, one on the nose, the others on the left cheek. Complete healing after two exposures of one-half hour each.

CASE 19. Mr. L. P., aged 60. A business man presented a dime-sized, simple keratosis senilis upon the left malar eminence. Radium, in a half-strength applicator, was applied for twenty minutes, without screening. Reaction to the extent of reasoning and the formation of a dry crust appeared after seven days, and on subsiding about six days later, the skin appeared normal, and has remained so after a period of one year.

CASE 20. Mrs. R., aged 72. This lesion consisted of a rapidly-growing tumor, half an inch in diameter, with pearly borders and a central horn, three-eighths of an inch high, that had been present upon the upper lip for six months. Unscreened radium, in a half-strength applicator, was applied three times at weekly intervals for periods of forty-five minutes, one hour, and one hour and a quarter respectively. The projecting horn began to crumble away at once, and ten days after the last treatment considerable redness and crusting appeared as the result of the exposures. The applicator was screened with 2 mm. of brass and applied for thirty minutes. Two weeks later the reaction had entirely disappeared, leaving only a slight crust on a flat surface. Radium, with the same screening, was applied for forty-five minutes. The final scar was smooth and free from recurrence.

CASE 21. Mr. H. C., aged 70. The patient showed an epithelioma of several years' duration, upon the right side of his neck, at the collar line. The lesion was oval, an inch wide at its broadest point, and had a crusted ulcerative center and raised pearly borders. Six hours of unscreened radium, in hour exposures at weekly intervals, completely healed the lesion. Recurrence was guarded against by applying the radium with the 2 mm. brass screen for one hour every fortnight for four times.

CASE 22. Mr. R., aged 68. This patient had been troubled by a small, hard, keratotic growth in the outer fold of the right ear. Pain on pressure was so severe as to compel the patient to give up sleeping on the affected side. A single twenty-minute application of unscreened radium, in a half-strength applicator, was sufficient to relieve the pain after a few days. Two further twenty-minute treatments entirely removed the keratosis.

SUMMARY.

Radium effectively heals *epithelioma* and *keratosis senilis*. The cosmetic results following its use are excellent. An especial field of usefulness is about the nose and eyelids, where surgery is difficult and the results deforming. An advantage over x-ray therapy is the accuracy of dosage and the greater margin of safety.

Book Reviews.

A Text-Book of Fractures and Dislocations, With Special Reference To Their Pathology, Diagnosis and Treatment. By KELLOGG SPEED, S.B., M.D., F.A.C.S., Associate in Surgery, Northwestern University Medical School; Associate Surgeon Mercy Hospital; Attending Surgeon, Cook County and Provident Hospitals, Chicago, Ill. Illustrated with 656 Engravings. Philadelphia and New York: Lea & Febiger. 1916.

Dr. Speed's book is essentially a Chicago production, in spite of the fact that it is published by Lea & Febiger. The writer is associated with Chicago hospitals and a Chicago Medical School, and dedicates his volume to a Chicago surgeon who is well known throughout the United States. In his preface, Dr. Speed acknowledges the helpful co-operation of his colleagues in the hospitals with which he is connected and of members of the Chicago Surgical Society.

The book may, therefore, be taken as an index of the best surgical viewpoint in the great Middle West of the complicated subject of fractures and dislocations. It contains about 900 pages, with more than six hundred illustrations, a very large number of which are line drawings reproduced from tracing of Roentgenograms of an actual case. The illustrations, as a whole, are most satisfactory: anatomical plates are almost all taken from Gray, and the many line drawings of fractures are sharp and clear and show unmistakably and definitely the lesion which each picture is intended to illustrate.

It is a little difficult to speak concisely of the text. The book seems to be a miniature encyclopedia not only of the observer's own cases, but also of the literature. The reviewer feels the absence in many places of a definite statement of the writer's own convictions upon subjects which are at present under discussion. In other words, the author frequently tells what other men do in given conditions, but not always what he does, or what he advises the reader to do. It is a trifle disconcerting to find Whitman's method of treating fractures of the femoral neck dismissed with a few lines; we may again sympathize with Whitman who in a recent article remarked that he had yet to see in medical literature his own method described in his own words.

The book might be described as a consideration of the present knowledge and treatment of fractures, and as such may be recommended rather to practitioners than to undergraduates. The author has evidently spent much time and care upon the subject; has been systematic and thorough in following and codifying the literature; and the results of such conscientious compilations should always be both interesting and helpful to the busy physician.