x rays, we are able to depress and diminish to within normal limits the secreting power of the thyroid gland, we should expect to be able to relieve the patient's symptoms, so soon, at any rate, as the rate of elimination of thyroid product rose above the rate of its absorption.

Experience shows that this is what occurs, and, moreover, after a sufficient number of applications the effect becomes permanent, and some histological change, probably a fibrosis, takes place in the gland.

The treatment is applied as follows: The patient reclines on a couch, a cushion being placed behind the neck to render it more prominent; collars and neckbands are removed. A focus tube of medium resistance (that is, one having an alternative spark-gap of about 4 in.) is placed so that the distance from the anticathode to the skin is 16 cm. A current of half a milliampere is passed through the tube, which is arranged so as to allow the rays to pass in an antero-lateral direction on each side of the gland in turn. A cylinder of stout lead cuts off all rays other than those passing to the thyroid region, the skin over which is protected from the softer rays (which are liable to cause dermatitis) by a disc of "sole" leather about 6 mm. thick. At first a twenty minutes' irradiation on each side of the gland may be given once weekly, a careful watch being kept for signs of dermatitis. Then, provided the patient is making satisfactory progress (as shown by fall of pulse-rate, lessening tremor and palpitation, etc.), the interval between the applications is gradually lengthened to two, three, four weeks; the duration of the application being cut down to fifteen or ten minutes on each side of the neck. Any sign of erythema would indicate cessation of treatment for a few weeks; and thenceforward smaller doses would be indicated.

The total number of these patients who have come under our treatment and observation is 31—all females except one. Of the whole number, 14 were treated privately, and 17 came under the Light Department of the Leeds General Infirmary. I must discuss the two classes separately, because those patients treated in the hospital do not, on the whole, get on so well as the private cases, and this for various reasons: (1) They cannot, in many cases, secure the requisite rest and abundant food enjoined upon those in more favoured circumstances; (2) they do not attend so regularly; (3) the soreness of the neck induced by the treatment assumes an importance to the untutored mind quite sufficient to act as an excuse for ceasing to attend; (4) cases are probably more developed when first seen.

Of the 14 private cases 10 are apparently cured, 9 of them having been quite well for over a year, the other for some six months; two members of this group have had quite recently a normal pregnancy and given birth, after many years of previously childless married life, to a healthy full-time child. The remaining 4, not classified as "cured," show very marked relief of symptoms and have been enabled to return to practically all the activities of normal life, except, of course, vigorous games, running upstairs, and the like.

Of the 17 hospital cases 7 may be classified as cured, 4 are markedly relieved, 4 show very little improvement, 1 was operated on with a fatal result after only five doses of the rays, and 1 has only just come under treatment. So that of these 17 the result in 11 is satisfactory, and of the 4 who have made but little progress, 1 has phthisis, 1 attends very seldom, and 1 has left the district.

Altogether, therefore, the "cured" and "greatly relieved" number over 80 per cent.

The general progress of the cases while under treatment does not show sufficient variety to justify giving a lengthy series in detail, I will therefore mention two typical instances:

CASE I.

Miss D., aged 35. When treatment was commenced there was extreme nervousness and tremor; marked protrusion of the eyeballs; a moderate goitre, the neck measuring 14½ in.; great weakness, dyspnoea, a pulse-rate of 160; much palpitation.

These conditions gradually diminished, and at present she is free from nervousness and tremor; the exophthalmos is materially lessened; the neck only measures 12½ in.; she can do an ordinary day's housework and can walk three or four miles; is not now troubled with "heart attacks," nor was she distressed in any way by the heat of last summer; pulse-rate now 84.

The thyroid is still easily palpable and feels like a hard fibrous mass; it does not pulsate. Her own doctor says, "Practically all her Graves's symptoms have disappeared and I consider her cured."

CASE II.

Miss F., aged 19. When first seen, about eighteen months ago, there were marked nervousness, shortness of breath, and tremor; the eyes were very prominent and the thyroid much enlarged. Palpitation and amenorrhoea for the previous twelve months. Unable to walk far or to pursue her work as a pupil teacher. Pulse-rate 128. Very anaemic.

After ten irradiations, covering a period of some three months, one noticed a marked improvement. The tremor and palpitation had disappeared; she could walk without distress on the level; the neck was smaller, and the pulse-rate was 88. She has had since then occasional doses of the rays, and when I saw her a few weeks ago she was able to dance and cycle; there is, however, some shortness of breath on climbing hills, and the exophthalmos and goitre are still marked. She is continuing treatment, having a dose once in six weeks or so.

Summing the whole matter up one may say that the noteworthy features are the lessening, often rapid, of the nervousness, the dyspnoea, the tachycardia, and the tremor; the patient's weight increases, and there is a return, in a greater or less degree, to a normal enjoyment of life.

One defect undoubtedly did, and to a smaller extent still does, exist—namely, the soreness of the skin of the neck, a true radio-dermatitis, present as a rule only for a few weeks during the earlier part of the treatment, but unfortunately giving place to a permanent brown stain and patches of dilated capillaries, which to those who wish to wear low-necked dresses is necessarily a great disadvantage. These difficulties, however, are being overcome by filtering out the softer rays which are responsible for the mischief to the skin; and after all, I do not think it is a great price to pay for relief from a distressing disorder.

In conclusion, I should like to express my thanks to Dr. Rowden, honorary director of the electro-therapeutic department of the Leeds General Infirmary, for his kindness in allowing me to make use of his notes in many of the cases.

ON DERMOIDS OF THE TONGUE.

WITH A REPORT OF A LARGE SUBLINGUAL DERMOID CYST.

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ALTHOUGH congenital in origin, sublingual dermoids frequently do not attain sufficient size to attract even the patient's attention until many years have elapsed. Surgical interference, however, is usually sought long before the cyst attains a size at all approaching that of the one here recorded.

A few large sublingual cysts have been reported, one of the most interesting amongst them being a case noted by Flinn. In this patient a small rounded swelling, the size of a pea, was noticed lying below the tongue on the second day after birth, and it slowly enlarged to the size of a hazel-nut. It then remained quiescent until the patient had reached the age of 23 years, when it began quickly to enlarge until it filled the mouth and projected in the submaxillary region, its diameter being 5 or 6 inches; it produced rather severe dyspnoea.

In another case the cyst at 10 years of age was the size of a hazel-nut; at the age of 29 the man could not close his lips, and there was huskiness and dyspnoea.

These cysts have their origin in groups of epithelial cells which remain enclosed in the mesoblastic connective tissue; they are of the type called by Bland-Sutton "sequestration dermoids." They are found to originate precisely in the middle line, lying in the septum of the tongue at any point between the mandibular symphysis and the hyoid bone, to one of which bony points there usually runs a firm fibrous band of attachment.

Sublingual dermoids have to be distinguished in diagnosis chiefly from ranulae, which have a bluish, translucent appearance in contradistinction to the whitish-yellow colour of the dermoid; ranulae, again, are much softer, and present easy fluctuation as compared with the putty-like consistency of dermoids, which pit on pressure. As the cyst enlarges the first noticeable change is in the speech, which becomes gradually less clear, the "s" sounds being first affected; swallowing is next interfered with, saliva dribbles from the mouth, and if treatment

is still further delayed the patient may actually begin to starve from lack of food, and backward pressure may produce dyspnoea.

The present case is that of a boy of 13 years, who came under my care at Salford Royal Hospital in January last.

His history was as follows: When 14 days old he was taken to a doctor because of difficulty in sucking; after examining the mouth and tongue and dividing the fraenum, the doctor noticed, and pointed out to the mother, a small "lump" the

size of a pea in the floor of the mouth. Until the boy was 12 years old this "lump" grew very slowly, but then it began to enlarge so quickly that in less than a year, at the time of admission to hospital, it was so large that the boy could not close his mouth; in fact, he could not even bring his lips together. The tongue, the tip of which could be seen pressed against the upper incisors and hard palate, was only slightly movable. Liquid food only could be taken, and swallowing was performed with considerable difficulty, saliva dribbling from the angles of the mouth all day and night. The sublingual mucosa appeared to be tightly stretched by

the cyst, and at one point on the left side, just above the lower lateral incisor tooth, the thinning was so marked that it seemed likely to give way at any moment. The cyst was removed through the mouth under general anaesthesia by simply incising the mucous membrane covering it, and then by blunt dissection, the fibrous band connecting the cyst wall and lower jaw being divided by scissors. Some now redundant mucous membrane was cut away, and the edges brought together by catgut sutures.

After removal, the cyst proved to be about one and a half times the size of a golf ball.

Should a sublingual dermoid be too large for removal in this way, an incision would be necessary, running from the

Sagittal section through tongue and cyst. D, dermoid cyst; P, hard palate; S, base of skull; V, i, ii, iii, iv, v, atlas, axis, and lower vertebrae; Hy, hyoid bone; A.C., arytenoid cartilage; T.C., thyroid cartilage; C.C., cricoid cartilage; G.H.G., genio-hyo-glossus; Man., lower jaw; Myh., mylo-hyoid; G.H., genio-hyoid.

symphysis menti to the hyoid precisely in the middle line. The right and left mylo-hyoid muscles and genio-hypoglossi are retracted and the cyst dissected out, after puncturing it and removing the contents if necessary.

A CASE OF VIPER BITE IN EPPING FOREST.

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Cases of viper poisoning in this country are either extremely rare or very infrequently recorded, and since the victim on this occasion was an observant, intelligent man, and well able to describe events and symptoms, I have thought it worth while to publish his story:

On a bright sunny morning in April of this year, Mr. F. H., aged 28 years, was cycling through Epping Forest. He dismounted, and sat down on a dry bank covered with thick undergrowth, and almost immediately felt a prick on the back of the right hand. On looking down he perceived an adder, drawn up, head raised, mouth wide open, and prepared to strike again. This occurred at 9.30 a.m. He immediately jumped up, put his foot on the snake, and cut it about the head with a penknife. Whilst doing this his hand was smarting as though stung by a wasp, and at the site of injury he noticed two red punctures, about half an inch apart, with a bluish-white swelling around them. Blood was trickling freely, and he sucked the place vigorously, drawing a quantity of blood, which he estimates at a tablespoonful. It was then about 9.35 a.m.

He now felt considerable pain in the small of the back and stiffness in both arms, like the pains of "muscular rheumatism," and his vision became blurred and indistinct. However, he was able to wrap the snake up in paper and tie it to his bicycle, which he then mounted and attempted to ride home, a distance of about four miles (9.40 a.m.). The pain in the back was not quite so bad, and the left arm had recovered, but he felt giddy.

After riding three-quarters of a mile he got some brandy at a public-house, and was seized with a violent shivering fit, which lasted about ten minutes, then he began to feel sick, and noticed a painful swelling of tongue and lips. Notwithstanding this, he got on his machine again, and struggled on for nearly two miles. A severe pain, paroxysmal in character, had now commenced in the pit of the stomach, and this, combined with the increasing pain in his injured arm, vomiting, and impaired vision, caused him at length to collapse. This was at about 10 a.m. He was picked up by a passing motor car, and conveyed to my surgery, which he reached at 10.25 a.m.

His condition was then as follows: He was unable to walk without support; his face was very pale, had an expression of great agony, and was covered with cold, clammy sweat. Breathing was short and jerky, with much groaning, speech spasmodic, one or two syllables at a time. He had intense pain in the epigastrium, which he described later as being like that produced by a blow on the "mark" or having the "wind knocked out" of one. The position of greatest ease was sitting huddled up with the head between the knees. There was retching and vomiting of clear, pale yellow gastric fluids, almost continuous. The pulse was 120, very soft, and difficult to find. The pupils were dilated; there was no sign of convulsions, and the pain in the hand and arm was completely submerged in the agonizing abdominal crises.

The two punctures on the hand could easily be seen, with a bluish-red areola around them, the hand and arm being already swollen and oedematous. On being informed of the nature of the injury, an elastic ligature was placed round the arm; but on learning that it was an hour since the bite, this was removed as being too late to be of any use. Strychnine and morphine were injected hypodermically, and a teaspoonful of sal volatile in water was given by the mouth. Seven minims of a solution of potassium permanganate, 1 in 30, were injected at the site of injury. About twenty minutes later the symptoms had slightly abated, and the patient was conveyed to the local hospital.

At mid-day the pulse was still rapid, but much better in quality. The severity of the abdominal pain was reduced, partly by hot bottles, and also by a second hypodermic injection of morphine. Retching continued, but was not so incessant.

In the evening the oedematous condition of the tongue and lips was evident, and the arm was very swollen and painful. Temperature was never above normal.

The following day all except the local symptoms had subsided.

On the third day the arm presented a peculiar bluish-green discoloration along the lymphatic routes, like a "black eye" about its fourth day; there were also ecchymoses in places. The axillary glands were tender, but not enlarged.

Recovery was rapid and uneventful, and the patient was out walking on the fifth day, feeling quite well except for stiffness and tenderness of the arm and some vague "rheumatic" pains about the loins and shoulders.

It is some comfort to know that in this country the adder, or viper, is very shy, and will always avoid other creatures if possible. Also that the venom, or the quantity of it, is not sufficient to kill a full-grown man in good health. But deaths have occurred to little children, aged and feeble persons, and drunkards.

The adder in this case was about 23 in. long, and its species was easily recognized by the wide, flat head marked with a V, and the zigzag marking all along the back. It is possible that, owing to the earliness of the