A large variety of preparations of thyroid is employed in the treatment of obesity, myxœdema, and other ailments. Perhaps the tablets of the dried extract are the most popular. But none of the extracted preparations commonly used contain all the active ingredients in the same form or proportion as they are found to exist in the gland itself.

Last spring I obtained from Mr. E. C. C. Stanford, F.I.C., F.C.S., whose researches on iodine are so well known, a new preparation of the active ingredients—thyroglandin. I have made numerous trials of this substance in a number of cases of obesity, and in one case of myxœdema.

CASE I. *Obesity*.—B. McR., aged 21, married, complained of rapidly increasing gain of flesh, with debility and great shortness of breath on exertion. She was put on 1 grain of thyroglandin thrice daily for a few days. The dose was then rapidly increased until 9 grains in the day were being taken. The decrease in weight was as follows: June 1st, 12st. 4lb.; June 12th, 11st. 10 lb.; July 10th, 11st. 2 lb.; August 10th, 10st. 6lb.; September 4th, 10st. 5 lb.; September 29th, 10st. 1lb. Since last date this patient has been taking about 1 grain daily, and her weight remains fairly stationary.

CASE II. *Obesity*.—R. C., aged 46, married, multipara, consulted me on account of her obesity and dyspnoea. She was put on 1 grain of thyroglandin thrice daily, and as this dose was well tolerated it was rapidly increased to 9 grains in the day. Her weight at different dates was as follows: July 18th, 14 st. 13 lb.; July 25th, 14 st. 10½ lb.; September 17th, 13st. 12 lb.; September 24th, 13 st. 10 lb.; October 8th, 13 st. 1 lb.; October 19th, 12st. 9 lb.; October 26th, 12 st. 5½ lb.; November 19th, 12st. 0½ lb.; November 26th, 11st. 9 lb.

CASE III. *Obesity*.—Mrs. M., aged 40, under 5 feet in height; had great difficulty in moving about, and complained of excessive dyspnoea on exertion. She was put on thyroglandin in doses similar to the two former cases, and her weight fell as follows: May 16th, 13 st. 11 lb.; June 14th, 12 st. 1½ lb.; July 6th, 11st. 6 lb.

In all of these cases the rapid loss of flesh was accompanied by few of the unpleasant symptoms so commonly experienced. There was no sickness, diarrhoea, sore throat, excessive sweating, or cardiac failure, and no persistent symptoms of thyroidism.

CASE IV. *Myxœdema*.—Mrs. P., aged 49. This patient first came under my observation in 1893. She was suffering from myxœdema of many months' duration. In June of that year the treatment with raw thyroid gland was begun. Four glands were given in the week. In two weeks a marked improvement began. Dyspnoea became less pronounced, insomnia disappeared, œdema of legs and arms diminished, and coldness of the extremities became less. Her weight, too, was considerably reduced, and she was able to move about with some ease. At the end of two months a most obvious change in her facial expression was recognised. She continued the use of the gland for six months, with occasional intervals, which were followed by relapses if the cessation was prolonged beyond two weeks. This patient's residence being in the country, it was found to be inconvenient to procure the necessary weekly supply of fresh and healthy glands. In 1894 treatment was continued with the tablets of dried extract. Since then almost all the preparations of thyroid, including several fluid extracts of various makers, and thyroïdin (Bayer's) have had prolonged trials, but the results were not satisfactory, while these preparations were not nearly so therapeutically active as the raw gland. Early in 1897 thyroglandin was begun. The dose was 5 grains daily. This was continued for one month. Her general condition when she began this treatment was similar to when the raw gland was first commenced, except that œdema and breathlessness were not quite so marked. She responded at once to the thyroglandin, and in three weeks she became more comfortable, greatly improved in appearance, and swelling disappeared almost entirely from her arms and legs. From that time up till now the thyroglandin has been continued, with occasional intervals of from two to three weeks. The therapeutic effect of this remedy seemed to me to be quite equal to that of the raw gland, while it produced no unpleasant symptoms.

In many cases in which I have employed similar preparations, prescribed at different dates, but under conditions as nearly as possible identical, the results have been far from uniform. I have been led to believe that these differences depend more largely on a want of uniformity in the preparation employed than on any inherent difference in the patient.

Most of the preparations on the market have some drawback, and, as far as I am aware, none of them contain the thyroïdin and the antitoxins in the same proportion, or of the same activity, as that in which they are present in the gland.

The thyroid gland may be administered either in the raw state or dried at a gentle heat under the coagulating point of albumen. To either of these forms there are obvious objections, because animal substances foreign to the essential active principles are almost certain to be present, and bacteria of a dangerous kind may be introduced into the system of the patient.

The thyroid gland contains two important principles: one of these is an iodoglobulin, the larger constituent, and the other is thyroïdin, discovered by Baumann. Both contain iodine, and both are requisite to produce the specific effects of the gland itself. Several chemical processes¹ have been

introduced with the object of separating the active principles from the animal substance—for example, boiling in dilute sulphuric acids, or in solutions of caustic soda, or digesting in closed vessels with water at a high temperature, or digesting with pepsin, or extracting with solutions of common salt and precipitating the solution with tannin.

It has been found, however, that none of these processes separate the active principles of the gland in the form or proportion in which they are contained in the gland; they all result in the destruction of the iodoglobulin entirely, or in the partial separation of the thyroïdin only, or in its association with other substances of a useless or objectionable nature. That the products of these processes have not the same medicinal effect as the gland itself is admitted by all who have employed them as substitutes on account of their greater convenience.

Thyroglandin is prepared by the following chemical process:

1. Selected and healthy glands are macerated in cold water, which extracts the soluble iodoglobulin. This solution is decanted or filtered off, and is evaporated to dryness at a temperature of 212° F. The resulting product is reduced to a fine powder.

2. The residual glands are then boiled for one hour with a weak solution of caustic soda which eliminates the thyroïdin. After filtration the solution is exactly neutralised with hydrochloric acid, evaporated to dryness, and powdered.

3. The two powders so obtained (iodoglobulin and thyroïdin) are mixed together and constitute thyroglandin.

It will thus be seen that this new preparation is made in such a way that thorough sterilisation is secured, and that it is freed from everything deleterious which might be derived from the other animal substances of the gland, while it contains the iodoglobulin and thyroïdin in the form and in the proportion in which they exist in the gland.

Thyroglandin keeps perfectly, if kept thoroughly dry, without deterioration. It may be administered in capsule or in tablets, and in doses of 3 to 5 grains, which are equal to half a gland of average size and weight.

The very active therapeutic properties which are exhibited by thyroglandin lead me to believe it is a preparation of great value. If it really represents all the active constituents present in the gland in their correct form and proportion, it may prove a very useful addition to our thyroid preparations.

REFERENCE.

¹ Vide articles by Robt. Hutchinson, M.D., *BRITISH MEDICAL JOURNAL*, January 23rd, 1897; March 21st, 1896; and *Journal of Physiology*, vol. XX, p. 474.

SHORT NOTES ON THE TREATMENT OF LUPUS VULGARIS WITH "T.R." TUBERCULIN.

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EARLY in September I selected four patients; one was treated entirely as an out-patient, the others were admitted to my wards. The following are condensed notes of the cases. The minimum dose injected was 1½ mg., and the maximum 10 mg.

CASE I. *Lupus of the Nose*.—J. J., a delicate girl, aged 15. The disease first made its appearance five years ago at the junction of the left nostril with the lip. When admitted on July 16th, the left cartilages, the septum, the columna, the right lower cartilage, together with the lobe, were in a state of ulceration, and numerous discrete nodules were seen at the base. The ulcerated surfaces were thoroughly scraped and cauterised and the nodules were bored with a wooden match dipped in liq. hydrarg. nit. acid. In a month the nose was soundly healed. At the beginning of September a few fresh nodules were observed beyond the area of operation, and for these the treatment with T.R. tuberculin was commenced on September 5th. September 26th. It was noticed that the nodules were disappearing, becoming depressed and scaly. September 30th. A few scales only marked the original site of the disease. October 15th. After six weeks' treatment the patient was obliged to return to her home in Wales, but with absolutely no trace of the disease. November 19th. She returned for inspection, when it was observed that a few fresh nodules had appeared. During her absence the treatment had been suspended, but it was subsequently carried out by Dr. Griffith of Castellmarch, Pwllheli, but without benefit. April 2nd. The patient returned a second time to hospital for further operative treatment, ulceration having again occurred on the right lower cartilage and base of nose; otherwise she had gained weight.

CASE II. *Lupus of Nose*.—E. W. aged 32, a domestic servant, has suffer

for seven years, the left lower cartilage being destroyed. Treated by scraping and cauterisation, a recurrence of the disease having taken place, treatment with tuberculin was begun on September 2nd. September 28th. It was noticed that the nodules were becoming depressed. October 6th. Nodules less defined and scaly. December 10th. Many of the nodules have entirely disappeared, while others which were beginning to ulcerate have partially or completely healed. January 6th. The patient was shown at the Medical Institution. The injections were continued until the end of March in spite of which fresh nodules made their appearance and healed ulcerations broke down.

CASE III. *Lupus of Face*.—E. S., married woman, aged 39, has had eleven children, three of whom died in infancy from convulsions. At the age of 24 she suffered from suppurating glands in the neck, and from which the disease originated. Her mother, a brother, and a maternal aunt died of phthisis. The disease occupies the right half of the face, the ear of the same side, the nose, the lobe of which is ulcerating. The upper margin follows a line more or less ulcerating drawn from the top of the ear across the temple and the lower eyelid to the root of the nose. The lower margin, dry and scaly, sweeps downwards and forwards from the ear, beneath the inferior maxilla to the larynx, and upwards and backwards to the angle of the left jaw, enclosing the whole of the chin and mouth. The included area consists of numerous nodules embedded in the more or less atrophic skin of the cheek, while the skin of the chin is much infiltrated and scaly. September 15th. The treatment was commenced. September 25th. The face looked red and glazed. September 27th. The nose is healing and the face is generally improving. October 5th. Redness and infiltration is less; nose is nearly well. October 15th. Face very much improved. October 18th. Face red and hot; patient complains of backache, nausea, headache, trembling, and very nervous. October 21st. Face improving. October 30th. Face flushed, hot, and burning; feels very poorly in herself. November 30th. Continued to improve until this date, when it was observed that the already healed ulceration of the nose was breaking down again. December 7th. Patient returned to her home. January 6th. Shown at the Medical Institution. January 17th. It was noticed that the nose had again healed, but that a slight recrudescence of the disease had occurred on the cheek. January 25th. A fresh eruption of nodules has appeared on the left side of the nose, and the cheeks are studded with small-sized pustules. The upper margin of the disease and the lobe of the nose are now crusted with dried exudation. March 8th. Fresh eruption of nodules; breaking down of healed ulcerations; injections discontinued.

CASE IV. *Lupus of Nose and Face*.—C. N., a girl, aged 15. This patient had been under treatment with the thyroid extract for eighteen months previously, but latterly the disease had seemed to stand still. It was one of those cases which admitted of no operative interference. The disease had begun in the nose nine years ago, and gradually involved the whole of the face and eyebrows, destroying the nose. The cheeks and chin were greatly infiltrated. The lips had been destroyed by ulceration, and in consequence the oral orifice was gradually closing; this was enlarged with scissors from time to time to enable the patient to take her food. Saliva kept continually running over her chin and interfering with repair. September 5th, first injection. October 5th, the epidermis is rapidly healing round the mouth and over the base of the nose. Large granulations on the lower lip are much diminished in size, and the mouth is rapidly closing. October 19th. Mouth completely healed. December 17th. The oral orifice was enlarged by snipping through the angles with a strong pair of scissors, and an attempt was made to bring the skin and mucous membrane together with sutures, but owing to the infiltrated condition of the tissues it was found impossible, and considerable sloughing followed. January 6th, shown at the Medical Institution, when it was noticed that considerable diminution in the width of the lower half of the face had taken place as compared with a photograph taken before the treatment was begun. January 17th. Patient became an out-patient. From this date until the end of March the girl attended weekly for injection, during which time healed surfaces again broke down, and numerous lupus nodules erupted.

REMARKS.

It will be observed that these notes refer more particularly to the local effects of T.R. tuberculin, but it must not be assumed that no constitutional symptoms were produced by the injections. All the patients suffered from *malaise*, *anorexia*, pains in the back, and weakness or trembling of the legs.

The local reactions differed from those produced by the old tuberculin in being milder and confined strictly within the diseased limits. No abscess formation occurred as the result of the injections.

During the earlier treatment improvement was most marked, and excited hopes that substantial benefit would follow; then came a period of no advance, and lastly a stage of breaking down of healed ulcerations and a recrudescence of the disease.

A CASE OF MALIGNANT POLYPUS OF THE NOSE, WITH REMARKS.

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An important, probably the most important, point in the matter of malignant polypus of the nose is that of early diagnosis. This may be said to hold good of all organs and

regions, for it may be assumed as a general rule that the success of operative treatment of malignant disease, wherever situated, is in direct ratio to the earliness of the stage at which it is applied. In the case of the nasal cavities this is particularly true; and it is chiefly with the view of assisting in the early diagnosis, and of eliminating certain fallacies which might mislead the observer, that the present communication is made.

The text of this paper is afforded by the following case:

A lady, aged about 60 years, with no hereditary tendency to disease, and who had hitherto been very healthy, came under my notice on September 23rd, 1897. She was reported by her medical attendant, who was a near relative, and who accompanied her, to have polypi in both nostrils. The initial nasal symptom, and that which had ultimately led to a casual inspection of her nares, was hæmorrhage from the left nostril of a very profuse nature. The first flow of blood had occurred about three months previously, and between that date and the period of my seeing her, three or four severe recurrences had taken place. Polypi had been observed almost protruding from the left nostril about a week before coming to me. Hæmorrhage was the only thing of which she complained, and I noted that the sense of smell was good.

I found many polypi in both nostrils. In the right they presented the appearances and characters of simple growths. In the left they were numerous, and completely filled up the nasal cavity; their colour was mostly dark brown, but at places slaty grey and resembling simple polypi, and on gentle probing they bled freely. The individual polypi could be differentiated, but distinct pedicles could not be made out. No pain was present, and there was no glandular enlargement.

An attempt to operate by the cold snare in the left nostril was followed by severe hæmorrhage. On several subsequent occasions the electric snare was used, and even this induced considerable bleeding. A passage was, however, cleared into the naso-pharynx; but rapid recurrence of the growths soon led to complete reblocking, and, as further and more radical measures were declined by the patient's relatives, subsequent treatment was limited to removing so much of the disease as appeared outside the nose. The growths by this time (December, 1897) had been transformed into a dense, black, sloughy mass, which bled freely and frequently, and which gradually extended into the right nostril, into the left antrum, causing marked bulging of the cheek and closing the eye, and eventually into the mouth. There was a continuous fetid, sanguineo-purulent discharge, and slight variable pyrexia was present during the last two months of life. Pain was absent during the whole course of the disease. Death occurred on February 12th, 1898.

The results of microscopical examination of portions of the growth removed merit a detailed notice. On the first and second occasions when examinations were made the appearances indicated simple mucous polypus of the nose. On the third occasion a different state of matters was revealed, as indicated by the following report:

The tumour consisted of a large irregular polypoid mass from $1\frac{1}{2}$ to $1\frac{3}{4}$ in. long, 1 in. broad, and $\frac{1}{2}$ in. thick, from which two or three pieces had been detached. It was of comparatively soft consistence, especially in places, and distinctly brittle. On section it was of a pale to pink colour, mixed with patches of red, not unlike a mixed thrombus. The whole tumour was cut into suitable pieces fixed, and stained with hæmatoxylin, rubrin, and orange. It showed microscopically a pure sarcomatous tissue in its most typical parts. The cells were round and fairly large, about the size of medium round cells, though a

Sarcomatous Polypus of Nose. Photomicrograph $\times 220$.