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The Treatment of Simple Grits with Introductory Remarks

A Thesis
for the degree of
Doctor of Medicine
of the
University of Edinburgh

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Gyrus being an affection of the Hisoid gland or Hisoid Body, it is advisable, in my opinion, before discussing the treatment of Gyrus, to make some general observations on the anatomy, physiology, of that gland or Body.

The Hisoid Body is at first in the course of development in the fetus, a blind diverticulum, from the laryngeal surface of the alimentary canal, in front of the lumps.

This connection with the alimentary tract, forms a narrow tube, which becomes shut off, leaving the Hisoid Body as a blind ductless organ, with two lobes on either side of the trachea, but united by an isthmus, which lies in front of the trachea.

In the adult, the Hisoid Body is reddish in color, soft and very vascular. The central lobes lie on either side of the windpipe, from the 5th or 6th ring extending upward to the trachea and to the posterior borders of the thyro-thyroid cartilage, covering the upper border or more of that cartilage.

The connecting 'isthmus' lies across the front of the trachea, at the level of about 3 and a quarter rings, often (in about one third of all cases) from the isthmus, or from either lobe, near the median line, a slender pyramidal projection, extends upward, which may reach the attachment to the ligamentum or loose areolar tissue.
The lateral lobes are convex in their outer, or anterior, aspects, about two inches in length, one to quarter inches broad, and about 3/4 inch thick; at the lower largest part. The internal is about 1/2 inch broad and the same in depth. The whole thyroid body weighs from one to two ounces, being in the whole large observies in females, it is often more so during menstruation or pregnancy.

The structure of the thyroid gland is as follows: There is a fibrous capsule with trabeculae of Connective tissue running inward, forming a stroma, surrounding it, separating from each other spaces or alveoli. These spaces are lined with epithelium, columns at first, but later it becomes more cubical. In the stroma there is a rich network of capillaries, an abundance of lymphatics, these being many lacunae spaces just outside the alveoli. Some of the alveoli are visible to the naked eye. The lining epithelium is on a basement membrane of the cavity in fresh specimens contains a plaie fluid, soluble in acetic acid, probably derived from the blood mixed with the lymphatics, which in the septa seal the surface of the
The thyroid gland are arranged in pleureas of adventitious trunk. Instead of simply a glairy fluid, the alveoli may contain in the adult "colloid" being more solid than the glairy content, and in fine specimens extravasations of blood are found. The exact nature of the glairy fluid of "colloid" is uncertain. There are also found in the alveolar space, serum albumin, and globulin. Its chief type of immune is present. On account of the presence of this glairy fluid and "colloid" some authorities suggest some relation of the glands to the formation in distribution of immune, so this view is supported by the events that occur in addition of the glands to be referred to later in this paper.

The thyroid body is relatively larger in the fetus and early infancy than in after life. In the new-born child its weight is to the total body weight from 1 to 2.40 to 1 to 2.00, while at the end of three weeks the proportion is 1 to 11.60 in the adult 1 to 1200 (Krause). In the aged, the thyroid body shrinks softer in the rest of earthy deposits.

The blood supply of the gland is derived from the superior and inferior thyroid arteries on either
Side with sometimes the thyroid. Some vessels are large & anastomose freely, ending in the capillary network in the interalveolar septa. The blood is collected by the branches of the superior, middle, and inferior thyroid veins on either side which are also relatively large, & before they are joined these veins form large phlebectas on the surface in the capsule of the gland.

These vessels are abundant, some derived from the middle & inferior cervical sympathetic ganglia, & possibly from the superior laryngeal nerve (its external branch)

"Accessory thyroid glands" are occasionally found in the neighborhood of the usual site notably in the submaxillary region.

It is not my intention to discuss in this paper the physiology of the thyroid body at any length. I will content myself with stating enough facts to prove how important is the gland in the economy of the human body, how necessary it is to bear in mind its physiological importance when submitting cases of goitre to active
It was only about the year 1883, that the Thyroid gland had drawn attention paid to its function. Prior to that date, authors contented themselves with stating that the function of the gland was unknown, although for many years, destruction or loss of function of the Thyroid Body had been associated with the disease known as Cretinism.

In 1883, Kocher & Reverdin (Archiv f"ur Chirurgie, Band XXI, P. 254, 1883) noted the occurrence of a condition, very like the "hypocalcemia" of Dr. Oehl, after total extirpation of the Thyroid gland in case of goitre. This was named Cachexia Struma-Diaphragnica or Cachexia Thyreo大力发展.

Since that time many writers have investigated the subject and endeavored to find out more about the function of the gland, but there is still a great deal of obscurity surrounding the matter.

Mr. Walter Horsley has made experiments in dogs, cats, monkeys (Brain section
B. M. P. 111. L. 1885.) observed roughly that excising the thyroid gland led to the following results: 
(1) An increase in the amount of mucus in the tissues which possess it 
(2) An increased activity of the glands which normally secrete mucin 
(3) The secretion of mucin by the pancreas gland, which normally contains no mucin 
(4) In the blood, at first a certain amount of leucocytes, later on oligospermia, with an excess of mucin, then ulcration in the albuminum constituents. 
(5) These changes in both spinal and brain, leading to the production of tremors, sometimes tetany, paralysis, lachrymation developing into coma before death.

Post mortem, he found the spleen often hyper trophyed, the mucous membrane of the intestinal tract thickened from translucent with four times the normal amount of mucin secreted, the subcutaneous connective tissue thickened sticky like a jelly, the brain pale atrophied. All these appearances resemble what is found in cases of myxoelemia
Cachexia Strumipriva in human beings after total extirpation of the Thyroid gland. There is therefore a profound perversion of nutrition where the function of the Thyroid gland is lost. As a contrast to this, Dr. Delphiun mentioned (B.M. J. Jan 21st 1890) that he had seen cases from which Schiff had removed the Thyroid gland, and in many of these that recovered, places of Thyroid like structure had developed in the submaxillary region. Also of late years much has been done to prove clinically that absence of the Thyroid gland or destruction of its function is the cause of Cachexia Strumipriva, hypochondria, & circumsion. These refer to the successful treatment of these conditions by the administration of the Thyroid gland. Of the work to these patients suffering from these ailments, at first through the transplantation of the gland in the abdomen (Anton von Eiselberg); then by hypodermic injection of the extract of the Thyroid gland as in Murray's case (B.M. J. Oct 12th 1891) & latterly by the giving of the gland by the mouth either raw or as a liquid extract or in the form of tablets of the dried extract.
(vide note, Case treated by Dr. Baumann in Edinburgh Hospital Reports, Vol. III, 1895.)

There has been some doubt as to the constant occurrence of Cachexia Strumipriva in people who have had the thryoid gland totally extirpated for hyper, for the purpose of clearing the matter up, many investigations have been conducted clinically, notably by a Committee of the Clinical Society of London (vide Report). This Committee reports on 277 cases of total extirpation of the gland done on account of hyper of an innocent nature. In 22 there was a recurrence of the hyper, showing that there was an accessory thryoid or that extirpation had not been complete. Only one developed Cachexia Strumipriva (at - Dr. James Berry's report, says (Skr. J. June 27, 1881), it is very easy to leave a small piece of thryoid time behind, besides, it seems to the patient that he has thoroughly extirpated the gland. Post mortem evidence can alone be trustworthy, as it is impossible to be certain that there is not some thryoid time left. A portion of gland remaining is not bound to hypertrophy because the
greater portion has been removed, although it may be so. In many cases experience of
the partial extirpation of the thyroids body
in cases of goitre, as a rule the lobe left
behind has shrunk instead of becoming
hypertrophied. The Committee also in-
vestigated 550 cases of partial extirpation
in cases of innocent goitre; and evidence
of Cachexia Strumiprae in 6, but in
most of these the symptoms were slight or
transitory. Barry (loc. cit.) says that the
child has been known to occur from
Cachexia Strumiprae after only partial
removal of the Thyroid gland; probably in
that case the small piece of gland left
atrophied or degenerated. Clinical evidence
of the above kind is therefore lost of value.
Rocher (loc. cit.), Haddem (vol v Brain P.188,
1882) others believe for some time that the
atrophy of the Thyroid gland was not the primary
cause of Cachexia Strumiprae. But a secondary
matter, that the Cause lay elsewhere e.g.
marring of the Trachea (as consequence of
softening or atrophy due to ligature of the
Thyroid arteries) producing chronic Asphyxia (Rocher)
on general terms of arteries & capillaries, maintained by disturbance of the sympathetic ganglia, the dura mater, or injury to the sympathetic cord during operation (Hadden). Schaff however found that if you divide the nerve going to the thyroidea gland you get no Cachexia Strumigraiva (Revue médicale de la Suisse Romande 1869). On Cachexia Strumigraiva & hypothyreosis, the sympathetic ends ganglia are in a state normal. As for the theory of the causing of the struma, that by no means is a constant result. It also has been in long standing cases of struma the thyroid is small almost as a large finger root without a single symptom of Cachexia Strumigraiva.

To sum up, in regard to the physiology of the thyroidea gland and its bearings on the treatment of struma, I may say with confidence that an extirpation of the whole thyroidea gland, produced in many cases Cachexia Strumigraiva in the human subject that the same class of symptoms are induced by the same proceeding in animals.
that in ordinary experiments, after the
planets cannot cast their beam from
the phenomenon of the body or planet to reach
the conclusion that the planet is near
with clarity in the transcendent state.

Mr.
This thesis deals mainly with the treatment of goitre.

Goitre is a term derived from the Latin 'Guttura', the throat. Other names given to the same condition are 'Tracheocele', 'Bronchocele' (from βρόχος, the windpipe) and names derived from districts in which the disease is prevalent, such as 'Derbyshire neck', 'Wittsdale neck' &c.

Definition

Goitre may be defined as an enlargement of the thyroid gland, consisting either in a simple hypertrophy of the same, or a cystic, fibroid, or fibro-cystic enlargement of it innocent in nature or a rude growing slowly. I do not include in this definition the increased size of the thyroid gland observed in Graves Disease, (Exophthalmic Goitre) or Malignant growth of in the gland), although it is sometimes very difficult to differentiate between these various enlargements. Simple goitre sometimes takes on malignant characters.

In goitre, the enlargement of the thyroid gland may be partial or uniform. Constitutional
Symptoms are rare in this country. Of present, they are in the division of hypoplasia, or atresia, the gland being either enlarged, but hardly functional. In Graves' disease, the constitutional symptoms are different. There, an observe, there is a hectic condition, the point to maintain.

Premar symptoms are common inperl of perls, but may also occur in other forms of enlargement of the thyroid gland. The trachea may be pressed upon leading to dyspnea; the larynx may be pressed upon causing dysphonia, or the recurrent laryngeal nerve may be involved, the muscles of the vocal cords being thus interfered with. Stimulation of the recurrent laryngeal nerve leads to closure of the glottis, because all the the nerve supplies both the adductors and the abductors of the cord, and when irritated mechanically, the adductors have been found to act more strongly than the abductors. (Refer to experimental mechanical stimulation of the recurrent laryngeal nerve.)

I do not intend to go fully into the history of larynx, as it has not any particular bearing on treatment. The condition has been known to the Greeks, and
Hippocrates attributed its occurrence to the use of warm water. Paracelsus in Switzerland observed it suggested mineral impurities in the drinking water as a cause especially sulphide of iron. This era at the close of the fifteenth century + in 1867 Saint-Lager supported this view. An important work was written by Procter in 1769 viz. 'An Account of the Method of Cure of Bronchocela or Cough by the Breathe in Coventry'. Tredler wrote on pleurisy in the beginning of this century. Since his day, the literature of the subject has increased greatly. Latterly prominent authors on the relationship between pleurisy & bronchocela have been such men as Hill, Tague, Ged, and W. Bell. Billroth Hart but not least Kocher of Berne. Billroth & Kocher have also written much on the surgical treatment of pleurisy. Other still more recent workers in the treatment of pleurisy will be mentioned in due course in this thesis.

Varieties of Innocent Pleurisy.

Roughly speaking there are three main
Varieties of innocent goitre viz.
(a) Simple Hypertrophy, which has been named "Parenchymous Goitre"
(b) Adenomatous Goitre
(c) Cystic Goitre.
In Parenchymous Goitre, there is increase mostly general, throughout the Thyroid Body, of all the structural elements, but as a rule the fibrous tissue increases to some extent, at the expense of the secreting part of the gland.
In adenomatous Goitre, there is a circumscribed tumour, encapsulated in the gland, resembling the gland in structure to a certain extent, but with a marked increase in fibrous tissue, there not recognised these tumours in any of the goitres I have seen operated on, but they are said to be common.
Dr. James Berry showed specimens of these adenomata in the thyroid gland, at a meeting of the Pathological Society of London (B. M. J. vol. I. 1880 P. 180). In adenomatous Goitre there is generally one tumour & the enlargement is unilateral. There may however be several small adenomata.
The typical Cystic Goitre consists of a large
cyst affecting one lobe as a rule, and
encapsulated, the contents varying in
character. The cysts may contain 'colloid'
material or a more watery fluid or there
may be altered blood, the result of
hemorrhaged. Cholesterol, fatty matter &
calcareous particles have also been found in
cysts.
There may be more than one of these varieties
of simple cysts in individual cases, thus,
parenchymatous cysts may have cystic
formation going on, adenomatous may be
alongside cysts or cysts may occur vi
adenomatous. Deposits of calcareous
particles are common in all varieties.
Parenchymatous cysts may vary in size apart
from vascular causes; hence in many cases
who developed a large cyst in Caribou, which
nearly disappeared after a few weeks, residence in
Asia. It again grew in her return to Caribou, some lobe
was extirpated on account of urgent dyspnea.
The condition was one of simple hypertrophy.

Pathology.
In addition to what has been stated above, I
may add in regard to cysts that primary cysts are
formed by a secret or abscess increasing in size or its contents increase, or by two or more bodiessimilarly increasing, running into each other. Primary cysts are generally small, filled with epithelial cells and collapsed readily when emptied. The wall of the cyst is fibrous, due to increase in the fibrous stroma; it may become almost cartilaginous, or the calcareous particles deposited in it. A cyst may suppurate through, but I have not seen one that had a cyst which suppurated and opened on cure resulted in a few days. Secondary cysts, due to forming in a fluid joint are non-encapsulated, have often bile salt deposited in them.

Causes of Grits.

Dr. James Berry made elaborate investigations as to the causes of grits, the results of which he embodied in the Freshwater Prize Essay, parts of which have been published in the P. M. J. (June 13th 1891). In it, he states that the coincidence of grits everywhere with calcareous
rocks is a marked feature, especially limestone of calcareous sandstone. He has also found it in the carboniferous limestone regions of England as in Derbysheir and Staffordshire. Its occurrence coincides with water supply containing a large amount of mineral matter, but the water need not be hard.

Dr. Berry points by experiments on guinea-pigs that neither sulphate or carbonate of lime, sulphate of magnesia or carbonate of soda produced guinea in those animals. He also refers to epidemic guinea occurring amongst soldiers after they had been quartered for a few weeks in certain villages, also to the occurrence of it in certain places after new water supply had been given to the farm, also to the close appearance of guinea in certain places after the water supply had been changed. He states that on the Continent young men go to certain 'guinea wells,' and acquiring guinea in a few weeks, the men are exempted from serving in the army.

Dr. Berry also says that climatic atmospheric conditions have no share in the production of guinea and that it is questionable whether drinking or inter-marriage have anything to do with it.
He sums up by giving it as his opinion, that there is some definite relation between goitre or poitou. In the soil, the vehicle to the body, being drinking water, usually derived from calcareous soils.

Saint-Siège in his thesis ("Sur le cause du goître et du goître endémique") enumerates many theories, and amongst others the condition of the air is mentioned, but then goitre occurs in localities where the air is very different, e.g. mountainous countries, marshy as well as dry places, by the sea, in hot and cold climates.

In England goitre is much more common in females, possibly because women are greater water drinkers than men, because in India the occurrence of goitre is almost equally common in the two sexes, and there, men drink water to about the same extent as women.

Goitre rarely begins before puberty. It is also rare to find it commencing after middle life. I knew of one case in the new born child, and I heard of a man of 60 years of age under treatment who suffered from a large goitre of recent origin. Such examples are
hence far from common.

Grits generally increase in size during pregnancy. Sometimes at the Menstrual periods it is larger than usual.

As regards hereditary influence as a cause of grits, it is impossible to speak with any certainty, because the child in utero is exposed to the same influence as the mother.

Ikhin in a treatise on English Branchology, London 1838 relates, that grits became endemic in a locality, where some French prisoners from a gritiferous district had been sent; there were married in the district of the female portion of their offspring was very generally griteous. Doubtless, in a gritiferous locality some families are more affected than others, but on the other hand one finds grits in people who cannot recall any case of the same in their relations.

The exact cause of grits is still shrouded in mystery. Why there should be hypertrophy of the Hybrid gland, why there should be adenoma of the Hybrid gland, why there should be cyst of the Hybrid gland, occurring
nearly exclusively in certain countries, or in certain definite parts of countries, is yet to be explained.

Treatment of Goitre

1. Parenchymatous Goitre:

Granted that goitre is caused by some poison in the locality in which it has occurred, then naturally if the patient be removed from the area of the poison, there is reason to expect benefit in cases of simple hypertrophy of the thyroid gland, as in the case of the young woman who removed from Carlisle to deprecated previously in this paper. Change of locality should be recommended in cases of Parenchymatous Goitre, especially in cases of recent origin where there is probably a great increase of fibrous tissue. Goitre has ever in my experience to become more common relatively in the poorer classes, it is impossible for such people with limited means to change their residences. Other remedies must if necessary be resorted to.

The means of treatment may be divided into
1) Internal Remedies
2) External Applications
3) Injections
4) Operative Interference.

(1) Internal Remedies.

Iodine.

Iodine has long enjoyed a great reputation in this connection, firstly by Dr. Carbonet of Geneva in 1821, first making the remedy known. About the same time, Dr. Tranch of Hofwyl also used it. The lodide of Potassium has been the favourite form in which iodine has been introduced into the system, but in my opinion the objection to its use is that it has to be pumped till toxic symptoms are induced before benefit results. I will quote two cases of Mr. Haile, aged 57, commuted at Edinburgh at the Caldeira Infirmary in 1886, suffering from enlargement of both lobes of isthmus of the thyroid gland, the height of the head being 17 inches, a diminution of dwellings 8 years. In August 1882 the height of the head was only 15 inches, the swellings having been reduced by the exhibition of lodide of Potassium for two years in doses which brought
not an iodide salt & reduced his bodily weight exceedingly. Since August 1882 hence this man has remained well without further treatment. He lives at Gretna.

J. H. female from near Gretna, set about 20, examined by Coler in June 1882 suffering from enlargement of both lobes of the thyroid gland. The growth of the gland was 17 inches, there was lampyric stricture. The duration of the fault was 2 years. She was very anaemic. In May 1883 after constant treatment with iodide of potassium & carbonate of lime the growth of the gland was only 14 inches. She has remained well. In her case also symptoms of iodine were induced and in written her history is in that of the man was then away in dejection & languor.

Dilute Fluoric Acid.

Dr Brookes (Lancet March 1881) used a half per cent. solution of the redistilled commercial fluoric acid, beginning with my 30 increasing if some well up to 3/4 time daily by the mouth. He left it 1/4 for a time
of nausea or headache ensued. He stated that out of 20 cases, 17 recovered & 3 were not benefited. The cure took place in from one month to two years. He also used it in combination with lodine injections. Opium and its raw materials assisted the latter.

Drumine.

In Corkery, Dublin, had a patient with a fit, 4 months' duration, causing dysphoria and asthenopia; there were also severe headaches recurring daily at the same hour, with flushing of the face & feeling of throbbing in the head. The administration of X of Drumine daily, in a week there were no symptoms. In his book, there was no mention. W. H. wascare audience read the case at the British Medical Association meeting at Belfast. I advised Drumine in cases where there were periodic exacerbations, as there might be a mechanical origin of that form of acute fits.
Thyroid Extract.

Within the last two years, thyroid extract, prepared from the thyroid gland of the sheep, has been much used in the treatment of scrofula, as it may supply awant, and obviate necessity for increased action hyper trophy of the thyroid gland? It has been given internally in the form of tablets, generally of the strength of 9 or of the extract, in each. The best plan is to begin with one tablet daily, rapidly increasing the dose to two tablets per day, if no toxic symptoms are observed. The main toxic symptoms are tachycardia, nausea, vomiting, diarrhoea, with sometimes headache, general malaise. Later on, if necessary, the dose may be still further gradually increased if the remedy is borne well by the patient.

There have not been marked benefits from this form of treatment, but in cases in which it was tried were not favourable, being long standing cases of scrofula; but others have noted good results.

Marie, (Le Mon. Médicale, Nov. 13th, 1895) reported the case of a girl aged 19, suffering from scrofula of the size of half an orange, hard but elastic. The neck had not since the age of 14. In Sept. 15th, 2 tablets of thyroid extract were given and continued daily. The neck became smaller for the
"26½: the transverse diameter at the level of the clavicles had diminished from 8 to 4½ in. and the vertical diameter from 5½ to 4½ in. The spine was much softer.

P. Brunns (Deutsch Orth. Inst., Oct 11 1884)
treated pancreatitis with thyreoid feeding. In 12 the patient disappeared entirely and was free of symptoms in 9. In a boy of 14 a patient, large as a fist disappeared in 4 weeks. In a man aged 43 a patient of 6 yr. duration chief in the right side to large as the fist, disappeared in 4 weeks. It had caused displacement of the pancreas which latter was relieved.

In 3 cases out of 23 to 57 the results were negative after 6 weeks treatment in one case of 14 days in the other two cases.

Reinhold (Münch. Med. Wochen. July 31 1894) said that in 5 out of 6 insane people with giant treated with thyreoid feeding there was marked diminution of there were less bad symptoms.

Evidently Thyreoid Extract is of some value in the treatment of pancreatitis, giant.

In the concluding remarks in this paper I will refer to the use of thyreoid 'Clibrid' which has recently been employed.
(2) External Applications.

Iodine

Iodine is of value when used externally at the same time that it is used internally. The mixture may be painted on the skin or the fleshy places, or an emulsion of iodide of potassium may be used in the same way. Another method is to make a compound, only a saturated solution of iodide of potassium placenta, or the one night. St. Joseph Swayser at a meeting of the Medical Society (Mar. 17, 1844) spoke favorably of the effect of injection of boric acid of mercury, emulsions in India. Soon after January, the patient sitting with the fingers exposed to the sun as long as he can bear it, the ointment was left on all day. Dr. R. Brooker has stated that he had tried this treatment in England making use of a hot piece instead of the sun with marked benefit.

I believe that the external application of iodine is of value in many recent parapneumonic affections, but that any benefit in old cases is slight even after long trial.
Blisters

The benefit of blistering a zit in my opinion can only be slight. Inflammatory enlargement of the zit may be reduced.

Electrology

Galvano-puncture has been used in order to procure diminution in the size of zits, by Freibaur (Lancet 1888, p. 339) and Watcher (Nov. 27th 1888), and Duncan (B.M.J., Vol. II, 1888, p. 509). Freibaur cured two cases of 'soft' zits, i.e., zits with no great increase in the phlegm elements; Duncan 'cured' sexually. Galvano-puncture causes minute destruction of tissue at the seat of puncture, after a large number of sittings (from several hundred up to a hundred) marked thinning and diminution in size of the zits may result, but in my opinion the treatment is too tedious, it involves the risk of injury of important structures in the neighborhood, and many gland such as the recurrent laryngeal nerves; therefore I should not recommend it as a form of treatment to be generally employed.
(3) Injections

Intramuscular Injection

This has been used a great deal by many where simpler measures have failed, whenever patients will consent to injection when they will not allow operative interference. If there is dysphonia the surgeon should be prepared to relieve asphyxia which may occur after injection, as the irritation produced by the iodine causes temporary suffocation that may be sufficient to block the lumen of the trachea by pressure; hence tracheostomy or partial sectionation of the gland may be suddenly necessary. I have treated two cases which I will quote.

1) W. L. Bayliss, 15, from Margate, was admitted into the Carlisle Infirmary during my term of office there as House Surgeon, under Mr. Maclean's care. He came suffering from a firm enlargement of the whole Thyroid gland the circumference of neck being 15 inches. He arrived at the Infirmary in May 1892, he had suffered from it for 10 months. On May 13th I injected 1/4 of Intramuscular mixture into the swelling. Afterwards twice a week for
one injected. On June 14th the neck
circumference was 14 inches. He was discharged on July 5th but attended once
a week for treatment as an out-patient. He was cured in 6 months, remained well
for two years, since which time I have not heard from him.
(a) P.P. Roosevelt, 13 yrs. from Maryport, was admitted
into the Cumberland Hospital under our treatment
care in May 1882. The whole plant was enlarged, but
there was not much dyspepsia or exertion. A
mixture of Codr. 40 to be injected three
weekly till July 29th when he was discharged
cured. I heard from him two years ago when
he was quite well, then being no pain. His
patient had slight pain for about two days
after each injection.
By injection, one hopes to obliterate some of
the minute vessels of the plant through
inflammatory action; there may also be a
toxicant action on the collad material. Recent
quickly painful joints are least amenable
to this treatment.
Dangerous symptoms before death have followed
the injection of mixtures of bodies into the plant.
Hand. Increased apprehension may occur, or depression or even sudden death.

Dr. Sertey (see Ws. Prof.oth. church Stenius, band. Pharmac. Arch. i, Klein this XXIX i) mentions a case of a woman under Dr. Schwabbe's care injection of 1/100 fluid. of iodine caused after 20 minutes numbness, then loss of power in the left arm and partial loss of speech with facial paralysis. General convulsions caused death occurred in 20 hours. Dr. Sertey also notes another case of a young woman fitted rapidly, because disabled after injection 7 or 8 days the woman dead. In a 3rd case the patient immediately complained of pain in the right arm, and in a few minutes the right upper eyelid, eyelid, became edematous, the patient leaped about in her chair, became unable to speak, lost consciousness, and died.


In July (Bl. d. April 25, 1885, p. 665) Berg states very rare from the injection of iodine, if it is done carefully. He states, that he has done 3 cases.
(P653 loc. cit.) 290 injections of from 14.30 to 14.60, she has been injected into both lungs at one sitting. There was sometimes pain in the teeth behind the ears for some 10 minutes, but the case then wore down to a numbness for ten days. Cure resulted in most of the cases from 3 to 6 weeks. In one case the neck was reduced to 1 inch, after 12 injections. He says that the best place to puncture is between the sternum and internal jugular on either side.

Joh. Albinus (P. J. April 4, P175-1845) remarks, that the practice of injecting liters of lodine is very dangerous. Sudden death or dyspnea may occur, and there may be injury to the recurrent laryngeal in both, as in his case. Pneumonia contracted for ten days after injection.

Rose (Der Kopftod und die Radicale der Köpfe, Berlin, 1878) mentions six cases in which otherwise healthy patients have died suddenly in a few hours after injection.

Dr. Sommerbrodt ("Hefen eine traumatische Rezirkulationslähmung" Berliner Klinische Wochenschrift 1882, 50) reports 2 cases of persistent paralysis in one case of the neck, in the other case of both ends, induced by the injections, the motor laryngeal nerves being injured by the fluid.
Monty Schmidt, "Über die Behandlung von Parenchymatosen Kröpfer", Deutsche Medizinische Wochenschrift, 8, 1882.) Who had made thousands of injections, up to two years before he published his paper had only twice seen considerable tin the case rather long lasting increase of trocheal friction (which was previously present). He then treated a kid with a small left parenchymatosis finger. He injected mixture of mixture of iodine in a few minutes, the became epithelialised stenectomy had to be done; the child recovered on the 43rd day. Post mortem, compression of the trachea was found and the left recurrent laryngeal nerve had atrophied; the Lt. was involved in the brain and there was fatty degeneration of the heart.

Personally I have not seen any dangerous symptoms after the injection of mixture of iodine into a patient but my experience is limited and one must admit that there is some risk, as bad results have occurred when presumably perfect care has been observed.

In the practice of this treatment, Schmidt the following points to be of importance:

1. The needle should be inserted well into the substance...
of the goitre

2. A different point should be selected for each successive injection,

3. The solution should be pure and the syringe & needle should be sterilized

4. No air should be in the syringe.

5. To be sure that one does not inject a vein the needle should be twisted, with caution before driving the point home.

Suppuration might never to occur with care, and injection into a vein can be avoided. Hidden suppuration due to temporary swelling in cases where the tissue is already compressed and easy to be found, is not to be easily to avoid.

Iodoform has been used instead of the mixture of lodine. Knipp's (Deutsche Medicinische Wochenschrift July 4th 1890) injected iodoform (7 parts ether soluble iodine to 1 part iodoform) into 15 goiters, with very remarkable results in all. He introduced the needle into 3 or 4 places about an inch deep in the goitre twice 15 to 20 of the fluid. He repeated the injection every 4 to 6 days. He believes that there is less inflammatory reaction after iodoform injection than after lodine, alcohol, osmic acid, mixture of Perchloride of Iron
+Arsenical solution has all been used but without marked benefit.
(4) Operative Interference

Seton.
The use of the seton in the treatment of fistula in former days was almost universally condemned. It was in days when fresh dressing, shrinking of the wound, the result of inflammation, practice. The chief risks were the transmitting of a large vein (leading to hemorrhage), and suppuration of a dangerous nature: a large abscess might form from pyrexia might be set up. One could not always depend on setting up a mild suppuration.

Ligation of Thyroid Artery.
The inferior thyroid arteries are easily ligatured, but the inferior vessels are less easily reached, as they lie far back near the sympathetic cord; indeed it is just as easy to remove the thyroid gland.

Pajol (Gazette of France, May 31, 1880, P. 1276) practiced this form of treatment for 2 years. He stated that ligation of the arteries on one side only was insufficient, as was also ligation of the other vessels, alone because extensive collateral circulation
was then established. In many cases, Rydberg had ligatured all the thyroidea arteries, with the result that the function became much diminished in size. The question is whether such treatment may not impair the function of the gland so much as to render the patient more the type of becoming very adenomatous. Basalateral parathyroidectomy, frost is the most dependable for this treatment. Out of seven cases operated on in Billerstedt's clinic, 4 were permanently cured, but in 3 a further operation had to be done in 3 years later.

Division of the Isthmus.
Berry (Birmingham Medical Review, June 1890) said this operation in 20 cases from cold, the dysphonia was relieved in 17. In 3, dysphonia occurred some months later. Berry says, this operation may relieve dysphonia by allowing the two lateral halves of the gland to separate, by draining the glands of its colloid content, by the mechanical pressure on the thyroid co.
Lessened. When the wound heals, of course
the secretion is again pent up.
Relief of chyropurca does not always happen:
tracheotomy or removal of a lateral lobe
may be necessary, because in the case of
a blocked sinus of long standing, especially in
a young person, the trachea may be stunted
in development, twisted or linked, so the
extra pressure caused by the increasing size of
the sinus may act in such a way that
eliminating the sinuses in the hind 2 or
may not relieve the pressure in the least.
However, the windpipe is often displaced to
one side. The girl in the Bariloche Hospital
who was rapidly becoming dysphagia has had
the sinuses, drained by Dr. Scharn, but
no relief has obtained until one lateral
lobe was extirpated.

Extermination
Of late years, it has been deemed unnecessary
sanitarywise to perform total extermination of
the thyroid gland in cases of sinus. There already
referred to the occurrence of Cachexia Strumica.
Partial excision is very frequently performed in operating; it is well as a preliminary before administering the anaesthetic to tie in that position the patient can most freely breathe. Through cleanliness must be observed, Septice is a most dangerous complication to run the risk of. It is well to have a pillow under the shoulders to make the neck more prominent. A central straight vertical incision, accurate as well as a wide cut can be made an exterior as is useful. Kocher's transverse incision, with the concavity upwards, across the most prominent part of the swelling, renders the operation I think more difficult but causes less disfigurement. He carries the incision upward, backward, over the sternum almost on the side on which the vein is most marked. Kocher also uses an angular incision, of he wishes to avoid clamping the sternum, laryngeal muscles: the incision begins external of thyroideal cartilage, near the sterno-mastoid, is extended nearly transversely in the direction of the creases of the neck to the middle line, from there it goes vertically downward to the suprasternal region of
to the mammillary body, if the spine be detached. The skin of the epiglottis are first cut & the
surfaces turned, branches of the anterior jugular can be cut between ligatures. After the
fascia is divided one sees the sternomastoid & the sternocleidomastoid muscles. To make
room in the case of operating through a
transverse incision, all these can be cut, the
anterior border of the sternomastoid being kept
but clamping that leads to more disappointment.

In describing the operation of Particular attention
further, will go on as if encircling through a
straight median incision. One sees the inner
edges of the sternohyoid & sternothyroid muscles,
they are separated & drawn aside with blunt
hooks. Connect the inner edges covering the surface
of the furus as was seen, it's divided & stripped
to either side with a blunt chiseler. The
accessory nerves between this & the furus are not
divided between ligatures. The lobe to
be removed can now be clipped off through
part between the muscles, care being taken not
to tear vessels which are stretched. The main
result are now ligatured. The inferior thyroid
carotid arteries are seen as the arch from
without incisions, towards the area of attachment of the graft to the trachea. Care must be taken not to include the recurrent laryngeal nerve. The superior artery of vein are found above the stumps at the inner border of the upper part of the lobe, as also a branch ascending towards the pyramidal process. The hilar area is now ligatured with strong silk & cut across. In separating the graft from the trachea, care must be taken of the recurrent nerve, especially at the inner border of the lobe. It is well to cut parallel to the surface of the trachea & ligature small vessels. Vovelen advises operators to leave a small piece of gland tissue behind, so as to avoid injuring the recurrent laryngeal nerve, with more certainty. During the whole operation, the trachea must not be pulled as an sudden asphyxial is to be feared. If the wound is dry, a drainage tube is unnecessary. Elastic pressure over the dressing is beneficial, & the head should be kept tautly, until healing which is rapid, is completed.
The chief structures which may be injured during the operation are the vagus, the recurrent nerve & jugular vein which
from permanent haemorrhage out of a 2-3
operated upon in that series. Out of 14
these left lobes were resected, 12
remained well for many years.

Another form of Partial Resection is:
Resection of the Littreuma.

The lattreuma is excised on either side of the
intervening portion cut away.

Sir Duncan Gibb proposed this in 1875
(Quarter P120). The central lobe reseale
from the trachea, became less permanent a
destroyed. In Sydney Jones
(Quarter Aug 30 1874) removed the lattreuma
6 times with success, chest being re-
vised. In my own experience it is not
at all a certain method of relieving incurant
chest; it altogether depends on the
way in which the trachea is comprised, &
it is safer as it may save the patient
from a second operation to remove pain in
the cradle of one lobe.

I will now relate some cases of Partial
Resection of Paroxynphat. Sinter, done
next the Carlisle Infirmary. Many of Them
during the period in which it was there exposed to that institution.

Case I W.J.H. male, aged 17 yrs. resident in Carlisle was admitted under Dr. Dreich's care in 1890. He suffered from a large pustule, the right lobe of the thyroid gland being more enlarged than the left, other lobe considerably depressed. The right lobe was excised, & the depression was thereby relieved. Patient was readmitted in May 1891, suffering from dyspnea, due to increase to a further extent of the left lobe of the thymus, the enlargement having taken place during the previous few months. The left lobe has returned with difficulty, owing to the large amount of cicatrical tissue present. Patient left hospital in 14 days. He is now quite well, the remaining swelling over the thymus having since shrunk somewhat, & the dyspnea which had relieved completely by the last operation has never recurred.

Case II G.J. male, aged 19 yrs. resident in Carlisle, was admitted under Dr. Dreich's care suffering from parathyroid pustule with dyspnea in Dec. 1890. The right lobe being the larger was excised, & the patient made a good recovery.
There has been no further dyspnea, the left lobe has shrunk since the operation, there being now no pain to be felt.

Case III. J.H., female, aged 26, resident in Crookermouth, had the right lobe of her thyroid gland extirpated hurriedly by Dr. Dedran in 1891 on account of alarming dyspnea. The left lobe was also large, but after the operation it gradually became less, since then no pain. Divinced of the necessity in this case gave no relief, extirpation of the right lateral lobe was necessary to prevent impending suffocation.

Case IV. M.M., female, aged 26, from Brampton, Mr. Garlick, was admitted under Dr. Dedran's care in May 1891, with dyspnea due to a large goiter of 17 years' duration. The right lobe being the larger was extirpated successfully with relief as regards the dyspnea. There has been no pain since her discharge from hospital.

Case V. A.B., female, aged 25, was admitted under Dr. Dedran's care in Feb. 1892. He removed the isthmus which weighed 5 oz. After the
operation, the dysphonia disappeared, and the patient made a good recovery.

Case V. F.J.W., female, aged 12, resident in Cockermouth, was admitted under Dr. Maclean's care in March 1892, with dysphonia due to a large left kidney. He removed the right kidney which was the larger, and the patient was discharged from hospital relieved.

Case VI. F. L. Male, aged 22, from West Cumberland, was admitted suffering from gravel and dysphonia. He claimed that the right kidney of his thyroid gland was larger than the left, and in a few days the patient was free from dysphonia.

Case VII. W.B., female, aged 25, resident in Penrith, came under Dr. Maclean's care in Jan. 1892. He excised the left upper lobe of the thyroid gland, leaving the two lateral lobes which were also enlarged. The dysphonia was relieved hereafter, and he has not been seen since.

Case VIII. A.C., female, aged 79, resident in Appleby, was admitted under Dr. Maclean's care in Aug. 1893, suffering from gravel of 17 yrs. duration, but at
that time increasing rapidly and causing dyspnoea. The more prominent right lobe was extirpated. The patient has remained well since the left lobe has shrunk since the operation. At the examination, the trachea was observed to be of the size of the little finger, laterally displaced and compressed.

Case X. A. J. Female, 15, from West Cumberland was admitted under Dr. Dickey's care in Sept. 1893, suffering from phthisis, which had had for 12 years. There was considerable dyspnoea due to recent increase in the fithe. The larger lobe (the right) was excised, but the patient died on the 3rd day after the operation, the result of pneumonia (? Septic).

Case XI. E. K. Female, 24, resident in Carlisle was admitted under Dr. Dickey's care in Nov. 1893, suffering from phthisis of 4 yrs. duration. There was dyspnoea. The larger (right) lobe was extirpated. Since the operation found that the left lobe has somewhat increased in size.

Case XII. F. J. Female, 26, resident in Carlisle was admitted under Dr. Dickey's care in Jan. 1894.
suffering from a large nodule which had been present during the greater part of her lifetime. The left lobe being the larger was removed, thus relieving her from somewhat considerable dyspnoea, from which she had suffered for some time. Since the operation the right lobe has become less.

Case XIX. Mrs. G. female aged 20, was admitted under Dr. Geddes's case in Dec. 1895. She had a large nodule. Dr. Geddes removed the lobe, and the patient made a good recovery.

Case XX. H.F. female aged 16, from Carlisle was admitted under Dr. Geddes's case suffering from nodule of 3 years' duration. The right lobe was the larger nodule excised by Dr. Geddes. It had considerable flattening the trachea laterally; indeed very little room remains and has blocked the passage. The operation was performed in March 1894. Since then the left lobe has become smaller.

Case XXI. M.A.S. aged 15, from Kirtleburn was admitted under Dr. Geddes's case in March 1894, suffering from nodule which had been
present for 2 years. This was dyspnea. The right lobe being the larger was extirpated, and the patient made a good recovery. Since the operation the remaining lobe has diminished in size.

Case XVI: E. H. female, age 36, from Keswick, was admitted under Dr. Leslie's care, with a pain from which she had suffered for 21 years. Dr. Leslie removed the right lobe in April 1894. She left hospital much relieved as regards dyspnea.

Case XVII: J. B. female, age 17, resident in West Cumberland, was admitted under Dr. Macleod's care in Dec 1894. She suffered from slight coughing dyspnea. It had been present for 2 years. The right lobe being the larger was extirpated. Since the operation the left lobe has diminished in size.

Remarks.

In 13 of these cases the right lobe of the thyroid gland was the larger. It was extirpated. In 5, the isthmus was removed, but on the left
lobe was removed primarily. In Case 5 the left lobe became larger after removal of the right side, found to be necessary to separate it also, leaving the central portion behind. In Case 11 too, the left lobe became hypertrophied further after the right had been excised.

Seven of the cases operated on have given us further trouble, the remaining portion of the gland shrinking after the operation. Seven others have done nothing as regards their after history, but having been able to trace them since their departure from the infirmary. Two as stated above have suffered from recurrence (i.e. the remaining portion of the gland growing in size) and one patient died in hospital.

Fourteen of the cases were females, 13 there were males all were youthful, or had suffered from gout from their youth. In the instance where the gout had commenced very early in life, the thyroid was very small. In most a very little further increase in pressure might have caused sudden asphyxia. None of the patients operated on sustained injury to any of the important structures in the neck.
Treatment of
(6) Fibros adenomatous goitre i.e. where there is a definite encapsulated tumour in the thyroid gland. The fibre is usually one-sided. Dr. James Berry states that this variety of fibre is common. I have not seen any case myself, and cannot give personal experience of their treatment. In case of suspicion or other reason for active interference in such cases, it is evident the only treatment of any value must be operative; medicinal measures, injections, etc. cannot be of great benefit.
Operative interference may be divided into two kinds,
(1) Extirpation and (2) Simplectomy.
Extirpation is performed in the same manner as in ordinary cases of parathyroid goitre. The part of the thyroid containing the adenoma is removed. Care must always be taken to leave sufficient to carry on the functions of the gland.
In Simplectomy the goitre, the adenoma is removed from the interior of the gland.
the surrounding glandular tissue being left intact. Professor Socin of Basel was one of the first to enucleate solid tumours from the testis. Some 15 to 20 years ago, Kees of Basel has written on the subject, quoting 20 cases done by Socin.

"L'Enucleation de Tumeurs Interstitiales e la Paire, Paris 1887.

Dr. Jarre has also advised enucleation ("Zur Frage der Kropfdrüsen

There is often a well-marked capsule of fibrous tissue or modified fibrous tissue. For account of this capsule, the tumour can be thinned out. The capsule must not be confused with the gland capsule proper. Kees says the incisions should be made over the most superficial part of the tumour, where the capsule of gland tissue is thinnest; the bluish grey tumour is then seen. Nevertheless, as a rule, the tumour can be easily extracted from its bed, there being generally very loose connections...
between it fits glandular covering. If there
are other adenomata found they may
be extracted through the same incision,
or other incision, can be made if needful.
All bleeding must be stopped. The
operation is completed with the extirpating
substance of the gland capsules, the
muscles. After
Kern & Bozin believe that extirpation is
feasible in most cases, & I, but I
question that statement, as most of
the cases treated at the Carlisle Infirmary
then were containing one or more tumors
in the interior of the gland.
The same authority states that partial
excision is a preferable operation in
1) Diffuse hypertrophy of the whole gland
2) Painful prostate (peripheral rather)
3) Malignant cases? (3) Where there are many small
adenomata, to remove all of which
one by one, would be impossible; also
in such a state of affairs if the incidental
adenoma are left the way will be to
render another operation needful at a
future time. Sozin had no patent cases.
in the series published by Kezer. Other surgeons have done the operation of Summenhüter since Kezer's paper was published. Syme noted good results (Durch, C. Soc., 1876, P. 57) also Kezer ("Kurzweile führung Körpererinnerung an" Arch. f. Klin. Chir. XXXIX, 1889).

Kezer gives us the advantages of the operation of Summenhüter when compared with that of Partial Respiration.

1) There is not left such an unhealthily hollow in the neck.
2) The certainty that Cachexia Stomachica or debility will not ensue.
3) No large bullet is cast.
4) No risk of injury to important nerves (recurrent, sympathetic trunks).
5) Healing is as easy to obtain as in the operation of Respiration.
6) The operation is more refined.

Kezer does not agree with Sozin that Respiration can be performed so commonly in snout. (Bericht über
loated 250 Krophes tracheae, Corse
gl. fi. Schin. eurys, Bacc 108 XIX 1, 33)
tumours in has innumerable tumours
haemorrhage. We state that partial
extirpation makes sure both of a
natural hole while enucleation does not,
but that recurrence is liable to occur on
the same side, unless the tumour
being large has caused atrophy of the
surrounding gland and tissue by pressure.
We advocate enucleation if a solid
tumour of it be firm in consistence, and
loosely embedded so that it may be
gradually removed without serious harm-

"Enucleation Reactions" is an operation advocated
by Kocher. The incision in the skin must be
ample or transverse in order to have plenty of
room. The parts exposed & dissected on
the side of the tumour. The main vessels need not
be ligatured. The isthmus is ligatured on the
side away from the tumour & then divided. The
operator then gets access to the nodule through
the cut surface made by clipping isthmus
& e. In the inner aspect of the tumour, Kobe
A blunt dissector is then passed up & down between the surface of the nodule and the surrounding gland tissue, & the latter is divided vertically between two ligatures, with the aid of a curved needle. The anterior surface of the surrounding gland tissue still connected with the adenoma at its upper three parts is now separated, the tissue is undermined with the fingers, cut, upper layers, & lower parts. The posterior surface of the nodule can now be freed until a fair extent of the posterior gland tissue is separated, which is divided vertically with scissors, so that the cut in the posterior part of the surrounding gland tissue comes into the line of section running between the upper plane, or, behind, of the lobe on the anterior surface.

(Kocher's Operative Surgery)

In cases of colloid degeneration of both lobes, Kocher recommends double resection of the gland. A free transverse incision is made, then main vessels are ligatured, both lobes are extracted after transverse division of muscles, & of anterior vessels as near as possible to the lobe on the thyroid tissue cut across.)
Treatment of
(C) Cystic Goitre.

1. Tapping: Tapping is of use in the case of a patient suffering from alarming dysphonia due to pressure of a large multinodular cystic goitre. It relieves the immediate danger, but until some radical measure can be adopted, as a form of general treatment, I do not advocate tapping; it is only a temporary measure. The cyst soon filling up again, moreover, hemorrhage into a cyst may follow tapping, so it may become larger than before.

2. Percutaneous Injection of Cyst: Dr. Bovell Mackenzie recommended the practice of injecting a solution of perchloride of iron in water (3/4 to 3/11) into the cyst after tapping with trocar & cannula, thus destroying the secreting surface and promoting suppuration for which free drainage ought to be provided by replacing the cannula (which cannot be left in plugged, at first) with a
drainage tube about the 3 ½ or 4 ½ day. He recommended puncturing after putting in the drainage tube. These were started several in from 1 to 5 months. The superficial veins should be compressed with a tape below the tumour in case of an entering at the time of injection (Obst. Society's Transactions, Vol VII, p. 14).

In regard to the form of treatment, I think it had surgery to promote suppuration in such cases, have a case of a cystic girth in a boy in Calkin about 2 years ago, and the abscess developed, suppuration, the cure soon after the abscess was opened.

Another method of injection is the one of 3½ of iodine dissolved in ether in one ounce of absolute alcohol. When this has been injected into the cyst, it is well to apply gauze soaked in collodion to the front of the neck to coagulate the subsequent bleeding (Billroth at Zurich) hoarding. The patient should remain in bed in case of fever or collapse occurr-
(3) Incision of Cyst and Subsequent Drainage.

In Oct. 1891 a boy aged 11 yrs. was admitted into the Earlswood Infirmary under Dr. Maclean's care, with a cyst in the left lobe of the Hyoid gland. He had complained of the swelling very quickly. The elevation of the tumour was 2 years. Cocaine was injected into the fluid, the cyst incised, and drained. The les severe case in a week has remained to. He came from Lower Glamorgan. I think there was some objection to giving him an anaesthetic which led to the adoption of this treatment.

This form of treatment is very efficient. The depression is a sign of the fact that, if it be not a primary, secondary in mischief as in the case of pneumonia, it might be useful in the case of very adherent cysts or cysts deep down behind the sternum.

(4) Emasculation of Cyst

The operation is done on the same lines as the emasculation of solid adenoma, and is usually successful.
in the case of patients with a unicel-
lar cyst in the thyroid gland.

During my term of office as House
Surgeon in the Cumberland Infirmary, and
since, this operation has been performed
several times. I now permission to
quote the following case.

1. J.S., male, aged 62 yrs., under 90 Henderson's
care in the Earleby Infirmary had a
large cyst in the right lobe of the gland
which had been present for 20 years.

Slight of neck was 20 1/2 inches. There
was neither dysphonia or dysphagia but
the patient wished to be rid of it. The
cyst was incised at once, through an
oblique incision four inches long, equi-

caly. There was reactionary hemorrhage
on the same evening & the cavity was
plugged. The plugging was removed
in 36 hour & the cavity drained for
three days. Unfortunately the patient
clung of pneumonia 6 weeks after the
operation & the wound seemed to
be clean well.
(2) J.F.S., male, aged 22 yrs, under Dr. Macalpine's care had a large cyst removed from the right lobe of the thyroid gland in Jan. 1892. It had been present four years. There was no difficulty in the operation, and the patient has remained cured. He came from Penrith.

(3) J.J., male, aged 21, from west Cumberland, under Dr. Macalpine's care in Oct. 1892, had a cyst of the size of a hen's egg removed from the left lobe of the thyroid gland. He also has remained well since the operation.

(4) M.W., female, aged 16, from Penrith, had a cyst enucleated from the right lobe by Dr. Macalpine. She has remained well since. The operation was done in 1892.

(5) H.M., female, aged 16, from near Cockermouth had a large cyst enucleated from the right lobe by Dr. Macalpine in Nov. 1893. She has remained well since.
(b) W. C. male cat 21, from Barbié, with cystic left lobe of the thyroid gland. Mr. Maclean removed cyst in 1884 successfully. He has not been seen since his discharge from hospital.

(c) H. T. female cat 47 was admitted in May 1894 from Westmoreland. Mr. Maclean removed a large cyst from her thyroid gland, she has remained free from disease since.

(d) J. F. E. male cat 16, from Appleby, a brother of Case IX in Series 7, removed parathyroid gland, had a cyst removed of the size of a small egg from the thyroid gland by Mr. Maclean. He has not been seen since his kept hospital.

Some of the above patients had severe dysphonia. A soft cyst, I presume does not exercise the same pressure on the trachea as a solid tumour in or enlargement of the thyroid gland.
(3) Partial Sutuation of the Hybrid hand is necessary in order to petri's normal small ept, it may be more easy also in the case of the very large ept.
Summary

Before Goitre can be treated, it must be diagnosed. To diagnose a swelling of the thyroid gland is easy from its position, movement upward occurring during the act of swallowing. But it is less easy to differentiate between the simple parenchymatous, adenomatous forms of Goitre, and between them, malignant forms. In adenomatous Goitre, the swelling is very frequently un-sided, whereas in Parenchymatous cases, there is as a rule general enlargement of the gland, either one side may be larger than the other. Malignant disease must be looked for, if anemia and cachexia are present, attributable to no other cause, with a progressive hard enlargement of the gland, or tendency to invade neighboring structures, sympathetic etc. Cysts yield the feeling of fluctuation when examined. In Graves' Disease, one has in addition to the Goitre, one or more of the classical symptoms, viz. tachycardia, exophthalmos, nervous debility, tremors etc.

Accessory Thyroids exist, like the case of swellings in the region of the neck or jaw, care must
be taken not to overlook the possibility of
their being cancer.
In considering how to treat a case of
simple cancer, it is essential to make
careful enquiry as to whether the patient
suffers from dysphonia due to pressure
by the tumour. If such dysphonia is
present, then the former active treat-
ment is adopted the better, because in
such cases, sudden aphonia is by no
means unfrequent to be expected. In many
cases, people, the trachea is very
dense, or is twisted or twisted or
compressed laterally, so the lumen is
more constricted. Therefore when there
is dysphonia operation should be advised and
undertaken, if the patient be willing. Partial
extirpation in the case of a paracarcinomatous
cancer, excision or partial extirpation
where the parts is adenomatous or cystic,
are now procedures which are com-
monplace. Safe when performed by good
surgeons.
When the patient does not suffer from
dysphonia, there is time for consideration
Change of residence to a warmer climate, thyroid extract, iodine given internally or applied externally are all of value in recent soft parenchymatous goiter. Thyroid 'Collod' is now used frequently in place of thyroid extract. It is prepared from the thyroid gland of the sheep and has been recommended by Mitchell (B.M.J. Jan 23rd 1897) and others. The following advantages are claimed for it:

1. Constancy of dose
2. Freedom from side effects
3. It is a pure drug
4. It keeps indefinitely
5. A smaller dose is required as it is ten times as strong as the extract
6. It's absorbed with great ease promptly.

Injections of iodine in the form of Iodinized students, I feel clear of recommending because I believe them to be dangerous, and cannot altogether be sure of avoiding the various risks one would, in the dark, in a manner of speaking. Operative procedures involve less risk in my opinion, both in the treatment of hypertrophy of the thyroid gland and of cysts than treatment by means of injections.
Before resorting to surgical interference in any form of simple situs, the question arises whether it is not safer for the patient to leave the situs alone rather than remove it. If the breathing is not yet to the patient's disadvantage and breathing should not press an operation on the patient, but if there is the least reason for suspecting hemorrhage or displacement of the trachea, operation should be strongly recommended, thus a situs of considerable size of some years' growth in a young child is most likely to have led to compression displacement or stunted development of the windpipe, and it should be operated on without unnecessary delay. The dangers in such a case is the development of lung trouble, pneumonia, bronchial or tracheal cataract which may lead to serious difficulties to respiration. Partial extirpation of a situs or excision of a cyst is sometimes justified in some cases, but never in the cause of much an intercurrent illness.
than if performed in health. Tachectomy might be a still more efficient operation, the
mucous being not always easily removed in
these cases; the membrane likely to be free. In
the event of the operation of tachectomy being
undertaken in a patient with a stricture,
tends to be well to be provided with a long
tube, as the ordinary tube might be too
short to reach a deep seated strictura.

I have already drawn attention to the fact
that in cases of general hypertrophy of
the thyroid gland, (parathyreum glands) after
the lobe has been removed, the
remainder has become less. Why this
frequent happens I do not know. In
some cases the reverse happens, further
hypertrophy of the part of the gland left
behind taking place.

Carlisle
April 1857.

James Brown Birk
M.B. C.U. (Schu)