most intense. At first it may be confined to the face and hands. Occasionally it is absent. Patches of atrophy of pigment, leucoderma, may occur. The pigmentation is found on the mucous membranes of the mouth, conjunctivæ, and vagina. A patchy pigmentation of the serous membranes has often been found. The anæmia, upon which Addison laid stress, is of a moderate grade. It was not present in a marked degree in any of my cases.

Gastric disturbances are common; nausea and vomiting may be early and prominent symptoms; diarrhœa, too, is frequent, and may come on without cause. The pulse is small and rapid, and the heart's action feeble. Sometimes there is a special liability to syncope. One of the most pronounced features of the disease is the profound asthenia, which is out of all proportion to the general condition. The patient complains of a lack of energy, both mental and bodily; the least exertion is an effort, and may be followed by giddiness or noises in the ears. Headache is a frequent symptom. With the advancement of the disease the prostration becomes more marked, the patient remains in bed, the voice gets weak, the intelligence dulled, and death occurs either by syncope or gradual asthenia. Occasionally there are convulsions. The urine is usually normal. Polyuria has been described. The urinary pigments have been found increased.

Diagnosis.—Pigmentation of the skin is not confined to Addison's disease. The following are the conditions which may give rise to an increase in the pigment:

(1) Abdominal growths—tubercle, cancer, or lymphoma. In tuberculosis of the peritonæum pigmentation is not uncommon.

(2) Pregnancy, in which the discoloration is usually limited to the face, the so-called *masque des femmes enceinte*. Uterine disease is a common cause of a patchy melasma.

(3) Hepatic disease, which may induce definite pigmentation, as in the diabetic cirrhosis. More commonly in overworked persons of constipated habit and with sluggish livers there is a patchy staining about the face and forehead.

(4) The vagabond's discoloration, caused by the irritation of lice and dirt, which may reach a very high grade, and has sometimes been mistaken for Addison's disease.

(5) In rare instances there is deep discoloration of the skin in melanotic cancer, so deep and general that it has been confounded with *melasma suprarenale*.

(6) In certain cases of exophthalmic goitre abnormal pigmentation occurs, as noted by Drummond and others.

In any case of unusual pigmentation these various conditions must be sought for, and the diagnosis of Addison's disease is scarcely justifiable without the asthenia. In many instances it is difficult early in the disease to arrive at a definite conclusion. The occurrence of

fainting fits, of nausea, and gastric irritability is an important indication.

Prognosis.—The disease is usually fatal. The cases in which the bronzing is slight or does not occur run a more rapid course. There are occasionally acute cases which, with great weakness, vomiting, and diarrhœa, prove fatal in a few weeks. In a few cases the disease is much prolonged, even to six or ten years. In rare instances recovery has taken place, and periods of improvement, lasting many months, may occur.

Treatment.—The causal indications cannot be met. When there is profound asthenia the patient should be confined to bed, as fatal syncope may at any time occur. In three of my cases death was sudden. When anæmia is present iron may be given in full doses. Arsenic and strychnia are useful tonics. For the diarrhœa large doses of bismuth should be given; for the irritability of the stomach, creosote, hydrocyanic acid, ice, and champagne. The diet should be light and nutritious. Many patients thrive best on a strictly milk diet.

V. DISEASES OF THE THYROID GLAND.

Goitre.

Definition.—Hypertrophy of the thyroid gland, occurring sporadically or endemically.

In this country sporadic cases are common. Endemically it is found particularly in the mountainous regions of Switzerland and in parts of Italy. No satisfactory explanation has been given of the existence of the disease in this form.

Anatomically the following varieties may be distinguished: (*a*) Parenchymatous, in which the enlargement is general and the follicles, usually newly formed, contain a gelatinous colloid material. (*b*) Vascular, in which the enlargement is chiefly due to dilatation of the blood-vessels without the new formation of glandular tissue. (*c*) Cystic goitre, in which the enlarged gland is occupied by large cysts, the walls of which often undergo calcification.

Symptoms.—The enlargement may be uniform throughout the entire gland, or affect only one lobe, or the isthmus alone. When small, a goitre causes no inconvenience. In its growth it may compress the trachea, causing dyspnœa, or may pass beneath the sternum and compress the veins. These, however, are exceptional circumstances, and in a large proportion of all cases no serious symptoms are noted. The affection usually comes under the care of the surgeon. Sudden death occasionally occurs in large bronchoceles. In some instances it may be difficult to determine the cause and it has been thought to be associated with pressure on the vagi. I have reported an instance in which it resulted from hæmor-

rhage into the gland and into the adjacent tissues. The blood passed into the cellular tissues of the neck and into the sternum, covering the aorta and pericardium.

Tumors of the Thyroid.

These are very varied. (*a*) Adenomata, either simple or malignant. The latter may form extensive metastases. A case is reported by Hayward in which growths resembling thyroid tissue occurred in the lungs and various bones of the body. (*b*) Cancer, of which several forms have been described. (*c*) Sarcoma. All of these have a surgical rather than a medical interest.

It may be mentioned that the aberrant or accessory thyroid gland may form large tumors in the mediastinum or in the pleura. I have reported two cases of this kind,* and an instance is on record in which an enormous cystic accessory thyroid occupied the entire right pleura.

Exophthalmic Goitre (*Graves's Disease; Basedow's Disease*).

Definition.—A disease of unknown origin, characterized by exophthalmos, enlargement of the thyroid, and functional disturbance of the vascular system.

Etiology.—The disease is rare in men. The age of onset is usually from the twentieth to the thirtieth year. It is sometimes seen in several members of the same family. Worry, fright, and depressing emotions precede the development of the disease in a number of cases.

Morbid Anatomy and Pathology.—No constant changes have been found in exophthalmic goitre. Special attention has been paid to the condition of the sympathetic system, as the rapid action of the heart and dilatation of the vessels has been attributed to paralysis of the sympathetic fibres, particularly the vaso-dilators. This view has found many supporters, but neither in the ganglia nor in the nerves are there any changes which can be regarded as constant and peculiar (Hale White). On the other hand, many features of the disease are explicable on the view that it is an affection of the medulla oblongata, and Hale White has reported a case dying of an acute intercurrent disease in which there were hæmorrhages in the floor of the fourth ventricle. The vascular and nervous features might be due to a lesion of this part; but it is difficult on any theory to explain all the symptoms of the disease and to bring into line the mental and vascular phenomena, the exophthalmos and the goitre.

Symptoms.—Acute and chronic forms may be recognized. In the acute form the disease may develop with great rapidity. In a patient of J. H. Lloyd's, of Philadelphia, a woman, aged thirty-nine, who had been considered perfectly healthy, but whose friends had noticed that for some time her eyes looked rather prominent, was suddenly seized with intense vomiting and diarrhœa, rapid action of the heart, and great throbbing of the arteries. The eyes were prominent and staring and the thyroid gland was found much enlarged and soft. The gastro-intestinal symptoms continued, the pulse became more rapid, the vomiting was incessant, and the patient died on the third day of the illness; only the abdominal and thoracic organs could be examined and no changes were found. Two rapidly fatal cases occurred at the Philadelphia Hospital, one of which, under F. P. Henry's care, had marked cerebral symptoms. More frequently the onset is gradual and the disease is chronic. The three characteristic symptoms vary a good deal in their onset. Cardiac and vascular symptoms are usually first to develop and the patient complains of palpitation with breathlessness, and on examination the impulse is found to be increased in force, the apex beat is in normal position, the carotids throb, and the abdominal aorta pulsates visibly. This is one of the conditions in which the capillary pulse and the pulsation in the veins of the hands are occasionally seen. The pulse-rate at first may not be more than 95 or 100, but when the disease is established may reach 140 or 160. Any emotional excitement sets the heart beating with great intensity, and on exposure of the skin of the upper part of the chest a transient hyperæmia is seen. Soft murmurs are not uncommon at the base of the heart. In the long-standing cases the heart may be hypertrophied and the sounds very intense. In rare instances they may be heard some distance from the patient; according to Graves, as far as four feet.

Exophthalmos usually follows the vascular disturbance. It is readily recognized by the protrusion of the balls, and partly by the fact that the lids do not completely cover the sclerotics, so that a rim of white is seen above and below the cornea. The protrusion may become very great and the eye may even be dislocated from the socket. The vision is normal. Graefe noted that when the eyeball is moved downward the upper lid does not follow it as in health. This is known as Graefe's sign. The palpebral aperture is wider than in health, owing to spasm or retraction of the upper lid (Stellwag's sign). Changes in the pupils and in the optic nerves are rare. Pulsation of the retinal arteries is common.

The enlargement of the thyroid commonly develops with the exophthalmos. It may be general or in only one lobe, and is rarely as large as in ordinary goitre. The vessels are usually much dilated, and the whole gland may be seen to pulsate. A thrill may be felt on palpation and on auscultation a loud systolic murmur, or more commonly a *bruit de diable*. Among other symptoms which may develop are anæmia, emaciation, and slight fever. Attacks of vomiting and diarrhœa may occur. Tremor is present in many cases, involving the hands, and is usually very fine. The greatest complaint is of the unpleasant throbbing in the arteries, often accompanied with unpleasant flushes of heat and profuse perspirations. Skin symptoms are not infrequent—pigmentation, patches of leucoderma,

* Medical News, 1890.

or atrophy of pigment, and urticaria. In the very acute case above referred to, urticaria was a prominent symptom. Irritability of temper, change in disposition, and great mental depresssion have been described. An important complication is acute mania, in which the patient may die in a few days. Symptoms of general paresis have been noted in a few cases. A feature of interest noted by Charcot is the great diminution in the electrical resistance, which may be due to the saturation of the skin with moisture owing to the vaso-motor dilatation (Hirt). Bryson has noted the fact that the chest expansion may be greatly diminished.

The course of the disease is usually chronic, lasting several years. After persisting for six months or a year the symptoms may disappear. There are remarkable instances in which the symptoms have come on with great intensity, following fright, and have disappeared again in a few days. A certain proportion of the cases recover, but when the disease is well developed recovery is rare.

Treatment.—Medicinal measures are notoriously uncertain. The combination of digitalis and iron may be tried, and, when there is anæmia, often does good. I have never seen any advantage from the use of aconite or veratrum viride. The tincture of strophanthus will sometimes reduce the rapidity of the heart's action. Ergot is warmly recommended by some writers. Belladona gives relief occasionally, and should be administered until the dryness of the throat is obtained. No measures are so successful as rest in bed with an ice-bag or Leiter's tube applied occasionally over the heart, or, what is sometimes more agreeable, over the lower part of the neck and manubrium sterni. I have known the pulse to be reduced in this way from 140 to 90. Electricity has been much lauded and instances of cure have been reported. In many cases temporary improvement certainly follows the use of the galvanic current, the cathode being placed at the back of the neck and the anode along the course of the sympathetic or over the heart. Treatment of the thyroid gland itself is rarely successful, and the operative measures have not been very satisfactory. Ligation of the arteries of the thyroid has been tried.

Myxœdema.

Definition.—A constitutional affection, characterized clinically by a myxœdematous condition of the subcutaneous tissues and mental failure, and anatomically by atrophy of the thyroid gland. The disease was described by Sir William Gull as a cretinoid change, and by Ord as a special disease, to which he gave the above name.

Clinical Forms.—Three groups of cases may be recognized: (*a*) *Congenital form*, or sporadic cretinism. In these cases there is congenital absence of the thyroid, and the child is a dwarf, having a thick neck, short arms and legs, and prominent abdomen. The face is large, the lips are thick, the tongue is large and usually protrudes. The mental condition is that of imbecility or idiocy.

(*b*) *Myxœdema Proper.*—In this, women are very much more frequently affected than men—in a ratio of one to six. The disease may affect several members of a family, and it may be transmitted through the mother. In some instances there has been first the appearance of exophthalmic goitre. Though occurring most commonly in women, it seems to have no special relation to the catamenia or to pregnancy, though in one instance the symptoms of myxœdema disappeared during pregnancy. It is not so common in this country as in England. The symptoms of this form, as given by Ord,* are marked increase in the general bulk of the body, a firm, inelastic swelling of the skin, which does not pit on pressure, dryness and roughness, which tend, with the swelling, to obliterate in the face the lines of expression, imperfect nutrition of the hair, local tumefaction of the skin and subcutaneous tissues, particularly in the supraclavicular region. The physiognomy is altered in a remarkable way, the features are coarse and broad, the lips thick, the nostrils broad and thick, and the mouth is enlarged. Over the cheeks, sometimes the nose, there is a reddish patch. There is a striking slowness of thought and of movement. The memory becomes defective, the patients become irritable and suspicious, and there may be headache. In some instances there are delusions and hallucinations, leading to a final condition of dementia. The gait is heavy and slow. The temperature may be below normal. The functions of the heart, lungs, and abdominal organs are normal. Hæmorrhage sometimes occurs. Albuminuria is sometimes present, more rarely glycosuria. Death is usually due to some intercurrent disease. The thyroid gland is diminished in size and may become completely atrophied and converted into a fibrous mass. The subcutaneous fat is abundant and in one or two instances a great increase in the mucin has been found.

The course of the disease is slow but progressive, and extends over ten or fifteen years. I have recently had under observation a case to which the term acute myxœdema might be applied. A young man, aged twenty, presented a gradual enlargement of the face, particularly of the lips and cheeks and nose, without actual œdema. The backs of the hands were also swollen, but did not pit. The condition came on with enlargement of the thyroid, and, after persisting for between three and four months, is now gradually subsiding.

(*c*) *Operative Myxœdema; Cachexia Strumipriva.*—Horsley, in a series of interesting experiments, showed that complete removal of the thyroid in monkeys was followed by the production of a condition similar to that of myxœdema and often associated with spasms or tetanoid contractures, and followed by apathy and coma. When the monkeys were kept warm myxœdema was averted, and, instead of an acute myxœdema, the animals devel-

* Report on Myxœdema, Clinical Society's Transactions, 1888.

oped a condition which closely resembled cretinism. An identical condition may follow extirpation of the thyroid in man. Kocher, of Bern, found that after complete extirpation a cachectic condition followed in many cases, the symptoms of which are practically identical with those of myxœdema. The disease follows only a certain number of total and a much smaller proportion of partial removals of the thyroid gland. Of 408 cases, in 69 the operative myxœdema developed. It has been thought that if a small fragment of the thyroid remains, or if there are accessory glands, which in animals are very common, these symptoms do not develop. It is possible that in men, in the cases of complete removal, the accessory fragments subserve the function of the gland. Operative myxœdema is very rare in this country; the only case of which I know is a patient of McGraw's, of Detroit.

It is evident that the thyroid gland supplies some essential secretion of first importance to normal metabolism. What this is or how it acts is at present beyond our knowledge.

The *diagnosis* of the disease is easy. Bright's disease is the only condition for which it could be readily mistaken, but the absence of pitting, the curious condition of the face, and the absence of albumen in the urine are features which would readily distinguish it.

Unfortunately, no satisfactory treatment is known. The patients suffer in cold and improve greatly in warm weather. They should, therefore, be kept at an even temperature, and should, if possible, move to a warm climate during the winter months.

SECTION VII.

DISEASES OF THE KIDNEYS.

I. ANOMALIES IN FORM AND POSITION.

Anomalies in Form.—These rarely come within the scope of the physician. Atrophy or congenital absence of one kidney is associated with great enlargement of the other organ. Fused kidneys may have a horseshoe shape, or both organs may form a large mass, which is often displaced, being either in an iliac fossa or in the middle line of the abdomen, or even in the pelvis. Under these circumstances it may be mistaken for a new growth. In Polk's case the organ was removed under the belief that it was a floating kidney.* The patient lived eleven days, had complete anuria, and it was found post mortem that a single unsymmetrical kidney, as this form is called, had been removed.

Movable Kidney

(*Floating Kidney; Palpable Kidney; Ren mobilis; Nephroptosis*).

The kidney is held in position by its fatty capsule, by the peritonæum which passes in front of it, and by the blood-vessels. The lower edge of the left kidney is nearly two inches from the iliac crest, a little below the level of the second lumbar spine; that of the right is usually from one half to three quarters of an inch lower. Normally the kidney is firmly fixed, but under certain circumstances one or another organ, more rarely both, becomes movable. In rare cases the kidney is surrounded, to a greater or less extent, by the peritonæum, and is anchored at the hilus by a mesonephron. Some would limit the term floating kidney to this condition.

Movable kidney is almost always acquired. It is most common in women. Of the 667 cases collected in the literature by Kuttner, 584 were in women and only 83 in men. It is more common on the right than on the left side. Of 727 cases analyzed by this author, it occurred on the right in 553 cases, on the left in 81, and on both sides in 93. The

* New York Medical Journal, 1883.