The coexistence of hydramnion is of some interest. Other specially noteworthy points illustrated by the specimen are the absence of an isthmus to the thyroid tumour, the very perfect pyramidal process, and the marked compression of the oesophagus between the two lobes.

It would have been valuable if the cases published in 1855 and 1865 had been described in detail, especially with reference to the morbid histology of the goitres. The administration of potassium chlorate in each case is a striking fact; whether this had any causal relation to the goitre or not is difficult to answer. Nevertheless, it is very significant that these almost identical cases of congenital bronchocele should follow the administration of potassium chlorate during pregnancy. Of course the fact remains that potassium chlorate is given during many pregnancies without the appearance of goitre in the child, and yet, through a combination of conditions present in these three specimens, the potassium chlorate may be a very important factor in the production of the thyroid enlargement. By the short description of Sir James and Professor A. R. Simpson's cases I should infer that they belonged either to the congestive or the parenchymatous types of goitre, which are the varieties that might arise from some such cause as the administration of potassium chlorate.

In conclusion, I wish to thank Dr. Thomas Wilson, who kindly sent the specimen to my department of the museum, Professor Leith for placing it at my disposal, and Dr. Miller for making the drawing of Fig. 6 for me.

REFERENCES.

¹ Ballantyne, *Antenatal Pathology and Hygiene*, p. 376. ² J. Y. Simpson, *Month. Journ. Med. Sc.*, vol. xx, p. 350, 1855. ³ A. R. Simpson, *Glasgow Med. Journ.*, 3 s., Pt. 1, p. 181, 1866-7. ⁴ James Berry, *Diseases of the Thyroid Gland*, p. 15. ⁵ Demme, *Krankheiten der Schilddrüse in Gerhardt's Handbuch der Kinderkrankheiten*, Tübingen, vol. iii, Pt. 2, p. 392.

SIX CASES OF GOÏTRE,

ONE ASSOCIATED WITH AN ATTACK OF ACUTE MYXOEDEMA AND FIVE SUCCESSFULLY TREATED WITH THYROID EXTRACT.

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I THINK there is reason to believe that goitre is much more common in this country than is usually supposed; at any rate I am constantly meeting with cases in unexpected places and where they appear to have already passed unnoticed. All the following six cases, I think, show some characteristic worthy of recording and all except the first (which I had no opportunity of treating) showed a marked improvement under the influence of thyroid extract.

CASE I.—This case is remarkable for the enormous size of the enlarged gland. The two photographs, Figs. 1 and 2, speak for themselves. The patient was born at Stepney and was 38 years old when the photographs were taken. Nothing of importance could be elicited about the family history. The history of the growth is interesting. When the patient was 3 years old she had "whooping-cough." The whooping-cough was followed by an abscess which was opened and healed up, leaving a small tumour about the size of a pea. By the time the child was about 8 years old this small tumour had grown and was about the size of an egg, and she was taken to the Great Ormond Street Hospital, but nothing was done. When the patient was 12 a growth had commenced on the other side of the neck and she was taken to the late Sir Morell Mackenzie. His treatment, whatever it was, was not persevered with, and at the age of 14 the patient was taken to the Golden Square Hospital. According to the patient Sir Morell Mackenzie's treatment consisted in (1) "making a hole and putting in a tube which was left in nine months;" (2) burning with caustic; (3) putting a cord around the tumour subcutaneously which was tightened every day. The treatment being abandoned nothing had been done since. The patient is bright and cheerful and shows no signs of mental weakness.

CASE II.—This case, a girl aged 13, is chiefly remarkable as showing the improvement under thyroid extract. My notes are best exhibited in a tabular form thus:

Date.	Size of Neck.	Temperature.	Weight.
	Inches.		st. lb.
April 17	15½	—	—
April 24	1½	—	—
May 1	1¼	—	5 5½
June 5	12	—	—
July 3	11½	—	—
July 14	12	99° F.	—
July 25	12	99° F.	5 4½
August 9	11½	99° F.	5 7
August 12	12½	98° 4' F.	5 9½
August 23	11½	98° 4' F.	5 8½
October	12	99° F.	5 8

Fig. 1.—E. G., aged 38; showing a goitre of thirty-four years' growth.

Fig. 2.—E. G., aged 38; showing a goitre of thirty-four years' growth.

▼ CASE III.—A girl, aged 18, was born at Pentreuchaf, near Pwllheli. Her uncle and aunt died of consumption. There was no family history of goitre. When the patient came to me she complained of pain in the region of the heart's apex. There was a well-marked systolic murmur in the right supraclavicular region and a well-marked goitre measuring 12½ in. The temperature was 98.8° F., the pulse 120. Thyroid gland, gr. 1½ night and morning, was exhibited, and the following table shows the results.

Date.	Size of Neck.	Temperature.	Pulse.
	Inches.		
July 21	12½	98.8°	120
August 7	12	99.0°	120
September 18	11½	98° 4'	100

In this case the patient attended at very irregular intervals, and the treatment therefore had not a very fair chance.

Fig. 3.—A. G., aged 20; showing swelling of the face during an acute myxoedematous attack associated with chronic goitre.

Fig. 4.—A. G., aged 20; showing swelling of the face during an acute myxoedematous attack associated with chronic goitre.

CASE IV.—A man, aged 29; was born at Penge. His mother and sisters had had "large necks." His began to enlarge when he was about 24. He had had frequent attacks of tachycardia. When he consulted me he was suffering from tachycardia. The heart was enlarged and irregular in its action. He was treated with digitalis and ammonia and gr. $\frac{1}{2}$ thyroid extract night and morning. The results were as follows:

Date.	Size of Neck.	Pulse.
	Inches.	
January 3	16 $\frac{1}{2}$	Irregular
January 5	—	Regular
January 14	16	"
January 29	15 $\frac{3}{4}$	"
March 11	15 $\frac{1}{2}$	" 112

CASE V.—A girl, aged 20. This case showed several very striking characteristics. The father and one sister died of consumption. The patient sometimes goes to stay in Northamptonshire, where there are some ironstone mines. Her aunt and cousin, who live there, have goitre, and so have several people who live in that part. Another cousin of hers who lives in Leicestershire has goitre.

I was called in to see the patient in March, 1901. She was suffering from bronchitis following influenza and measles. I treated her for the bronchitis and discovered the goitre, but the friends were not willing that I should treat it, and took the patient to a hospital.

Fig. 5.—A. G., aged 20; showing normal condition after the acute myxoedematous attack had subsided. Compare Figs. 3 and 4.

Fig. 6.—A. G., aged 20; showing normal condition after the acute myxoedematous attack had subsided. Compare Figs. 3 and 4.

After the patient had been under the hospital treatment some time, she consulted me again on July 11th, 1901. Her face, lips, and eyelids were enormously swollen. There was no albumen in the urine. The patient was treated with a mixture containing digitalis and nitre. On July 12th the swelling of the face was a little reduced. On July 13th the photographs (Figs. 3 and 4) were taken, and I commenced the exhibition of thyroid extract. On July 15th the swelling had almost subsided, and in a few days I took the second photographs (Figs. 5 and 6), which show the normal condition of the patient. When I discovered the goitre, about April 23rd, the neck measured 14 $\frac{1}{2}$ in. in circumference. On August 10th, the last day when I measured it, it was 13 $\frac{3}{4}$ in. There were no mental aberrations.

CASE VI.—A married lady, about 30, who was born near Luton. Several of her family had had consumption and one had a large neck. I was called in to see the patient on November 10th. She complained of giddiness and ringing in the ears. I diagnosed the case as one of Ménière's disease, and treated it with sodium salicylate and digitalis.

By January 27th the giddiness and ringing in the ears had quite subsided, but the patient complained that her neck had suddenly swollen so

much that she could not get her collars on. On examination, it appeared that there was a large goitre. There was no goitre when I made a general examination of the patient in November.

On January 27th the patient's neck measured 14½ in. in circumference, then 1½ gr. thyroid extract were given night and morning, and by March 6th the neck was reduced to 13½ in. in circumference, but the goitre could still be felt under the skin on deglutition. There were no mental aberrations.

On analysis we find:

1. That all the cases except No. 1 improved markedly under treatment with thyroid extract.
2. That Cases III, V, and VI show a strumous family history.
3. That Cases IV, V, and VI show a family history of goitre.
4. That Cases III and IV show cardiac complications.
5. That Case V is an instance of acute myxoedema, which is, I believe, somewhat rare.
6. Case VI is a case of acute goitre.
7. In none of the cases were there any marked mental symptoms.

THE MORBID ANATOMY OF ERYTHROMELALGIA BASED UPON THE EXAMINATION OF THE AMPUTATED EXTREMITIES OF THREE CASES.*

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ERYTHROMELALGIA is the name given by Weir Mitchell¹ to a condition of the extremities in which redness and pain are associated. Sir Thomas Barlow² in contrasting the disease with Raynaud's disease, summarizes the differences thus: Dependence produces considerable increase of the dusky red or violaceous tint of the extremity affected; the arteries in this position of the limb may pulsate forcibly; pain is common, sometimes constant, and more especially when the limb is dependent or the parts pressed upon; in wintry weather, or on the application of cold, the conditions are relieved; on the other hand, warmth and summer weather increase the pain; there is no loss of sensation, but there may be increased sensitiveness; the local temperature of the affected parts may be raised or lowered; gangrene does not occur; the affection is asymmetrical; there is a certain amount of swelling, sometimes allowing pitting on pressure, sometimes not; incisions over such swelling, even down to the bone, have proved useless; excessive pain on pressure upon the nerves supplying the parts affected is not found; muscular wasting is found, but explainable by the disuse of the limb, and is not at all as severe as in cases of disease of the peripheral nerves; a reaction of degeneration in the nerves of the affected parts has not been found; the deep reflexes, with few exceptions, are not reduced. The disease may occur alone, or may be associated with other grave disturbances of the central nervous system; for example, hemiplegia, general paralysis, tabes dorsalis, myxoedema, disseminated sclerosis, and chronic myelitis.³ Cases occur which are somewhat similar to the cases described by Weir Mitchell, but which point to a relationship with such diseases as Raynaud's disease and sclerodermia, and Cassirer⁴ in a recent monograph has endeavoured to draw clinical distinctions between these three maladies and the affections intermediate between them.

The three cases examined and reported upon in this communication were typical ones of erythromelalgia. The pain was so severe, and the affected extremity so useless that amputation was performed.

Method of Investigation.—The affected parts after removal were hardened in alcohol (Case I and Case II) or in Müller's fluid (Case III). Sections were made of the soft tissues of each digit, the phalanges being resected from the periosteum; in the case of the foot (Case I) the sections made were representative of the whole length of the digit, including the ends of the toes; in the other two cases a ring of tissue was examined, the length of which, measured along the axis of the digit, was about half an inch. The sections were cut in paraffin for the study of the vessels, and in celloidin for that of the nerves. In order to detect any recent nerve degenerations the nerves were stained by a combination of Busch Benda and van Gieson's methods, and in some cases by Marchi's method. In addition, portions of the larger vessels

and nerves of the parts affected were dissected from the adjacent tissues, mounted as above, and cut transversely and longitudinally, and subjected to the same method of staining. The special points investigated have been: (1) Arterial and venous changes; (2) changes in the nerves, especially the finer terminal branches with respect both to a replacement of nerve fibres by fibrous tissue, and also to recent changes degenerative in character. In estimating the possible vascular and nervous changes, constant reference was made to sections prepared from the digits of the foot of patients of a similar age dying from some malady not likely to cause peripheral vascular and nervous disease, for example, death from perforation of a gastric ulcer in a young woman.

CASE I.

A. K., a young woman, aged 24 years, was admitted to University College Hospital under Dr. Charlton Bastian's care; subsequently she was admitted to St. Bartholomew's Hospital at Rochester, and amputation was performed for extreme pain. This patient had suffered from her symptoms for five years. The left foot would become reddish blue, especially when held dependent or when it was kept warm; there was also some puffiness and hyperaesthesia. There were brief periods when the foot in parts became doubtfully slightly anaesthetic, but such anaesthesia was never permanent. There were also nutritional disturbances of the nails and skin; there was no reaction of degeneration. The plantar reflex was absent in this foot, and very feeble in the right foot; the knee-jerks were brisk; there was some tenderness in the calf muscles. When the foot was placed in warm water patches of salmon-red colour appeared in the midst of the general blueness of the extremity.

Morbid Anatomy.

(a) *Vessels.*—Some thickening in the intima was present in all the digital arteries, and in those of the third toe it was considerable. Irregularly disposed thickening was also present in the internal and external plantar arteries, especially in the latter. The most pronounced changes were met with in the venae comites of these vessels. The lumen of the veins accompanying the external plantar artery was almost quite occluded by clot, and marked canalization was present. The dorsal artery and veins were normal.

(b) *Nerves.*—In no case of a digital or plantar nerve was any recent degeneration discovered. Abundant nerve fibres were seen in the case of the digital nerves distributed to each toe except in the case of the great and second toe, in which the nerve fibrils were very much scattered instead of being collected into coarse bundles; in no case, however, were bundles of fibrous tissue found containing less than a dozen nerve fibres. The plantar and musculo-cutaneous nerves were quite healthy.

CASE II.⁵

P. N., a pointsman, aged 29 years, was admitted to University College Hospital under Dr. Bradford's care. Ten years previous to the onset of his symptoms he had been struck on the back of the left wrist; an abscess developed and slowly healed. Nothing abnormal was noticed till three years before he came under Dr. Bradford's care. As in Case I, the affected hand became blue and was mottled with salmon-red coloured areas; there was pain, increased by warmth, oedema which pitted, and there were nutritional disorders of the skin and nails; the former was quite glossy, and the latter more opaque than natural and showed transverse ridges. Sensation was perfect in every digit and in all parts of the hand, wrist, and forearm; there was no hyperaesthesia; there was no reaction of degeneration.

Morbid Anatomy.

(a) *Vessels.*—The digital arteries and veins of the thumb alone showed extensive thickening of the intima; the arteries of the index finger showed less but obvious thickening of the intima, whereas in the digital vessels of the rest of the fingers the changes in the intima were very slight. Some intimal thickening was visible in the ulnar artery, the deep palmar arch, and in the comes nervi mediani; in these vessels and in the radial artery, the elastic lamina of Henle was very deficient.

(b) *Nerves.*—There was no trace of recent degeneration in any of the nerves, digital, radial, median, or ulnar, except in the digital nerves of the index finger, in which some nerves and some nerve-endings in the skin showed staining attributable to the osmic acid. This was probably an artefact and due to the fact that the amputated hand had been hardened in alcohol. There was no fragmentation whatever of the medullary sheaths.

CASE III.

E. B., a young woman aged about 20 years, came under the care of Sir Thomas Barlow. Previous to her admission to University College Hospital, she had had symptoms for eighteen months following a slight injury to the right hand. This injury was immediately succeeded by swelling, inflammation, and aching pain. She was treated at various institutions and in one the affected hand was incised and scraped, but with no benefit. The hand continued to be very painful, occasionally the arm throbbed from the fingers to the elbow; sometimes it felt hot at others it was very cold; passive movement of the hand was possible but painful; there was puffiness of the dorsum of the hand and of the fingers, the nails were ribbed and the skin was thin and somewhat polished; pressure caused pitting of the subcutaneous tissues; there were areas of localized tenderness and blotches of purple coloured skin; there was no anaesthesia; the pain was of a "tingling" character; the nerve trunks were not tender. At the time of the amputation it was thought that some of the vessels (anterior interosseous) bled less than usual.

* Read before the Pathological Society of London.