however, to take the younger children out to play, and to sweep the floor and otherwise help in household work. A year later she was quite unable to do any work except to go a simple errand. At this time, if allowed, she spent all her day playing with beads, talking to herself at the same time, and she got so absorbed in this occupation that she would get up with the daylight to begin it, and seemed to grudge the time for her meals. She was also very irritable with the younger children, and would beat them if they touched her beads. Her memory for certain things was long retained. At 12½ she could still repeat those parts of the multiplication table that she had learned, although she was quite unable to do very simple sums. At 13 she still remembered hymns which she had been taught long before, but her mental powers rapidly deteriorated after this time. Within a few days of her death she seemed to recognise old friends, although she appeared to take little notice of surrounding things. When about 13 years of age she would constantly imagine that there was someone at the house door, when there was not, and would run to open it. She also insisted that some of her beads had got inside her pillow, and wanted to have it cut open to find them. When between 13 and 14 years of age she had various hallucinations. She often said she saw an elephant at one corner of her bed, and sometimes she pointed to what she thought were men in an empty room. As the disease progressed the hallucinations became less distinct, but when between 14 and 16 she used to talk for hours to the pictures on the walls as if they were people.

The Course of the Disease was a steadily downward one. There was always an aggravation of the symptoms for some time after each fit or set of fits, and a slight degree of improvement was sometimes noticed at first, if a long period were passed without any seizures. On the whole, however, there was never any real improvement.

PATHOLOGICAL REPORT.

External Appearances.—Extreme emaciation; lower limbs rigidly flexed from permanent contracture of muscles; large bedsores over left trochanter, two smaller ones over right ilio-sacral joint; mammae quite undeveloped; pubic hair scanty.

HEAD.

Scalp not unduly adherent; calvarium irregularly thickened and condensed; dura mater thickened, and adherent at intervals to cranium. No trace of any subdural membrane formation; sinuses healthy. Excess of cerebrospinal fluid (over 3 ounces) at base of brain and in widened sulci of vertex. Pia arachnoid showed great venous engorgement, and was opaque and milky-looking from general chronic thickening. Tips of temporo-sphenoidal lobes were adherent to dura mater, and there were adhesions between frontal lobes in the median fissure. The pia mater was everywhere adherent to the brain, and could not be stripped off without laceration of superficial cortex.

Brain.—The cerebral convolutions were greatly atrophied, being small, narrow, and separated by dilated sulci. Atrophic changes were general, but most marked in frontal and parietal regions of each side. On section the cortical grey matter was found to be extremely atrophied, its layers indistinct, and its consistence tougher than normal. The white matter showed irregular patches of congestion and increased toughness. The basal ganglia were also congested. The lateral ventricles were somewhat dilated, and their ependyma showed fine scattered granulations; more numerous and more prominent granulations were present in the fourth ventricle. The choroid plexus showed no obvious change.

Microscopic sections of the cortex from various regions showed changes characteristic of general paralysis in the nerve cells, in the neuroglia, and in the vessels. The nerve cells were greatly diminished in number, the majority having completely disappeared. Those still persisting were for the most part small, atrophied, and degenerating. The neuroglia showed very extensive proliferative overgrowth (a) in the outermost layer of the cortex, producing a dense superficial felted; (b) in the white matter, especially at its junction with the grey; (c) throughout the whole extent of the grey matter, a less common site, so that numerous proliferated neuroglia cells with hypertrophied branching processes occupied the

place of the atrophied nerve cells. The medium-sized intracerebral vessels showed aggregations of leucocytes in the perivascular spaces, and the smaller vessels and capillaries marked hyaline thickening of their walls. The cerebellum showed similar but less marked changes.

Spinal Cord.—The spinal dura was thickened, and adherent to the pia mater from the first cervical to the fifth dorsal, and again over the seventh and tenth dorsal segments. The pia generally was thickened.

Thorax.—Thymus persisted as a thin flattened mass extending down to third costo-chondral articulation; heart and pericardium healthy; lungs congested with scattered patches of recent broncho-pneumonia.

ABDOMEN.

The gall bladder (see figure, p. 785) was greatly distended with clear watery fluid. It formed an elongated, sausage-shaped tumour, measuring fully 5 inches in length and about 2 inches in transverse diameter. Its lower extremity projected 2 inches beyond the anterior free margin of the liver, and reached about an inch below the umbilicus, immediately to the right of the middle line. The cystic duct was dilated and tortuous, and towards its hepatic extremity a single gall stone was firmly impacted. This stone had a smooth surface and an ovoid outline: it measured $\frac{3}{8}$ by $\frac{3}{8}$ by $\frac{1}{8}$ inch in its various diameters. The central part consisted of a bilirubin chalk stone, around which subsequent deposits of calcium phosphate had occurred. Traces of cholesterin were present both in the original nucleus and in the later deposits.³

The liver showed scattered patches of perihepatitis over its surface. Its anterior margin was greatly thinned and atrophied over the enlarged gall bladder. Microscopic examination revealed a slight, diffuse intercellular cirrhosis, with denser, irregular bands of fibrous tissue passing in from the thickened capsule. Fatty degeneration and infiltration of liver cells also present.

The spleen showed marked perisplenitis with adhesions and thickening of capsule. Small dense fibroma on its surface.

The stomach, intestines, pancreas, kidneys, and adrenals showed no important lesion.

Pelvis.—Uterus infantile, measuring less than 1½ inch from fundus to os externum. Ovaries fairly large, but on microscopic examination were found to consist almost entirely of ovarian stroma, only degenerated and undeveloped follicles could be found; a few small cysts were also present.

NOTES.

¹ Dr. Thomson is responsible for the clinical, and Dr. Welsh for the pathological notes. ² Dr. Charles Thiry in a recent thesis (Nancy, 1898) summarises 66 cases in patients under 20 years of age. ³ We are indebted to Dr. T. H. Milroy, Lecturer on Physiological Chemistry in the University of Edinburgh, for his kindness in examining the composition of the biliary calculus, and to Dr. Ford Robertson, Pathologist to the Scottish Asylums, for valuable advice.

ORGANO-THERAPY IN EXOPHTHALMIC GOITRE.

By HENTON WHITE, M.D. DURH., F.R.C.S. ED.,
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The idea of administering gland extracts was first suggested to the writer by observing, *post mortem*, thymus glands of considerable size in two fatal cases of Graves's disease under the care of Dr. Foxwell at the Queen's Hospital, Birmingham.

It was desired to ascertain whether the enlargement of the thymus was an effort on the part of Nature to counteract the effect of excessive thyroid secretion, or whether it participated in producing the fatal results.

CASE I.—Mrs. B., aged 35, was first seen on January 25th, 1896, having marked proptosis, a soft and enlarged thyroid, and considerable tremor. She was easily excited. Her pulse was 120, and she complained much of palpitation. Until March 7th she was treated with digitalis, strychnine, and arsenic, without real improvement. On March 7th the administration of suprarenal extract was commenced. She took four tabloids a day till June 6th, when her pulse was 128, and she had not in any way improved. On June 6th the suprarenal extract was discontinued, and one tabloid of thymus extract was given three or four times a day. On July 4th she said she felt much better as regards palpitation; her neuralgia, from which she suffered while taking suprarenal extract, had gone, and the tremor was scarcely noticeable. The pulse-rate and exophthalmos were, however, not improved.

CASE II.—Miss S., aged 28, was first seen on August 15th, 1895, when she presented the usual signs of Graves's disease with a pulse of 140. She was treated until November 12th, 1895, with digitalis, iron, and

strychnine, but without improvement. From November 12th to June 2nd, 1896, she was given suprarenal extract in quantities varying from 2 to 4 tabloids a day. Her heart, which on November 12th, 1895, was found to be somewhat dilated, had decreased in size, but her pulse was over 200, and the tremor and palpitation were no better, but the proptosis was slightly less. On June 2nd, 1896, she began to take thymus extract in doses of one tabloid three or four times a day. On July 31st the palpitation and tremor were much less, but the pulse was about 150. She was much less emotional, and felt "much better."

CASE III.—Mrs. M., aged 28, had, when first seen, palpitation, emotional mobility, tremor, and a pulse of 128, but no exophthalmos or enlargement of the thyroid. For four weeks she was treated with digitalis, iron, and nux vomica, but with no improvement. For the next eight weeks she took a thymus tabloid three times a day. Gradually the palpitation, tremor, nervous excitement, and pulse-rate lessened, and at the end of that time she appeared quite well, and had a pulse of 92. This case was thought to be an early case of Graves's disease, and, if it were so, the thymus extract certainly seemed to prevent its development.

From the above cases it may be concluded that neither thymus nor suprarenal extract is a perfect antidote to the thyroid secretion, nor, indeed, is it to be expected that a product of one gland should counteract the product of another. The thymus extract seemed to relieve the nervous symptoms of the disease, and this is interesting from a consideration of the fact that the thymus is most active at that period of life when brain development is most rapid.

As regards suprarenal extract, the chief effect in the second case seemed to be on the heart and vascular system, on which it had a digitalis-like action without lessening the frequency of the heart beats, and also, it may be remarked, after digitalis itself had failed to lessen the area of cardiac dulness.

It seems, however, to have no sedative action on the nervous system. It is unlikely that any drug or combination of drugs will be found completely to neutralise the physiological effects of thyroid extract, and it is to the thyroid itself that we must look for a remedy, just as strychnine and methyl-strychnine or toxins and antitoxins respectively neutralise one another, so we may hope to find in the gland itself, or in healthy individuals subjected to thyroid feeding, some substance that may prove effective in counteracting excessive thyroidism.

We know that when a proteid molecule is split up and a toxin given off something remains which, if it could be recombined with the toxin, would reproduce the harmless proteid molecule from which the toxin was formed.

Our first aim is to discover the nature of the proteid molecule, and then the method of its decomposition with the causes which determine it. As this reaction occurs in normal thyroids, and it is by excess only that it becomes pathological, the problem should not remain unsolved.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

FIBROMA OF BASE OF SKULL REMOVED THROUGH THE CHEEK.¹

FIBROMA of base of the skull is not of common occurrence, and the behaviour and direction of growth of the tumour in this case make the latter of sufficient interest to warrant publication.

J. M., a youth aged 17, was first seen in April, 1898. About a year previously he had complained of persistent headache. Two months later this left him, and he then first noticed some swelling in the left cheek, which continued to increase in size, but more rapidly during the last five months. The left side of the face was fuller than the right, and immediately below the malar bone there was a rounded movable tumour about the size of half a small orange. The malar was pushed slightly forwards and upwards, and the tumour appeared to be attached to its cranial surface. There had been no deafness or dysphagia. A few days later a probe was placed in the parotid duct, and through a curved incision in the cheek, lying within the hair-growing region, the duct was isolated, the anterior fibres of the masseter cut through, and the fore part of the tumour exposed. Its true nature then became apparent. Attempts were made to twist it off its pedicle; this was done

after considerable difficulty by seizing it as deeply as possible on either side with clamp forceps. This difficulty was found

Fig. 1.—A, the process which extended into the temporal fossa fore-shortened.

to be due to the existence of a large process $\frac{3}{4}$ inch in length, extending from the main part of the tumour into the temporal fossa, and beneath the temporal muscle. There was little or no hæmorrhage. The broad patch of bone from which it had been torn lay at a depth of 4 inches from the lower border of the malar. The site of origin, as far as could be ascertained, was the basilar process immediately in front of the left condyle. Instead of pushing its way into the pharynx and forming the usual naso-pharyngeal tumour, it had grown forward to the left of the pharynx into the zygomatic fossa, pushing the pterygoid process inwards and the coronoid outwards, and, making its way between the pterygoid muscles, presented in the cheek below the malar arch. Its greatest dimensions were $4\frac{1}{2}$ ins. by $2\frac{1}{2}$ ins. The divided fibres of the masseter were then drawn together by buried sutures, the skin flap turned down and sutured, a small drain being left in for forty-eight hours. The wound healed by primary union, and the patient returned to work on the eighth day. At first there was some loss of power in the muscles of the left angle of the mouth, but this is now scarcely noticeable. The microscope showed the tumour to consist of pure fibrous tissue.

To avoid disfigurement from scar, and possibly injury to the parotid duct, removal through the mouth was contemplated. For considerations of asepsis, apart from the difficulties often arising from hæmorrhage in such cases, though absent here, it was fortunately abandoned.

Swansea.

W. F. BROOK.

ACUTE EPIDEMIC DYSENTERY.

THE second officer of a steamship came to me on August 18th, 1898, suffering from a mild attack of dysentery. He had been at Porthleven, Cornwall, for two days after a voyage to the Black Sea, during which his health had been quite good. He completely recovered from the attack in a fortnight.

On August 3rd, when he was nearly well, his wife, who had been nursing him, began to pass mucus and blood every half-hour. She was unable to sleep, and afraid to eat, as every

¹Read at a meeting of the South Wales and Monmouthshire Branch, February 28th, 1899.