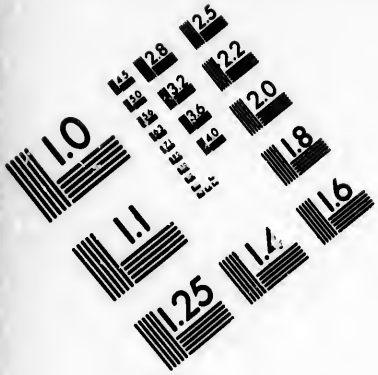

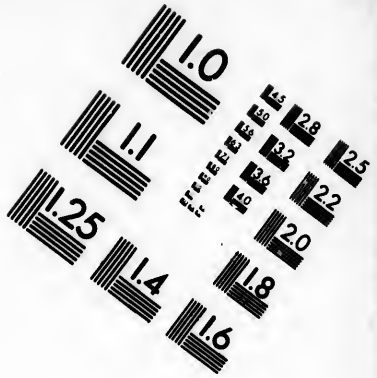

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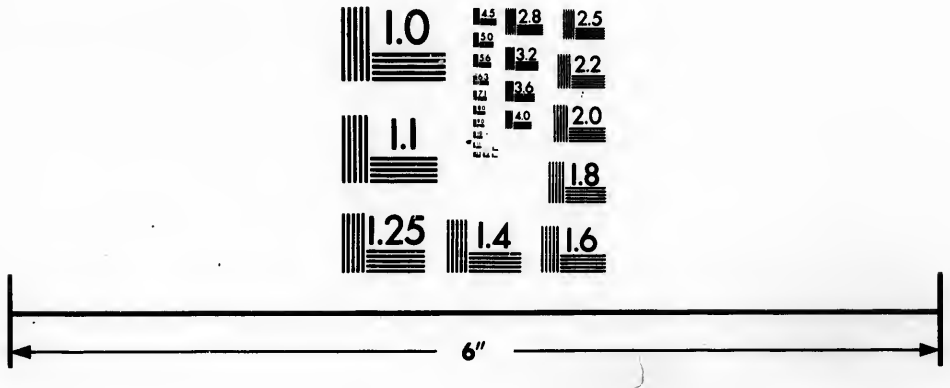

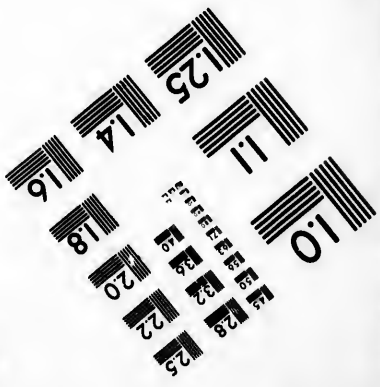

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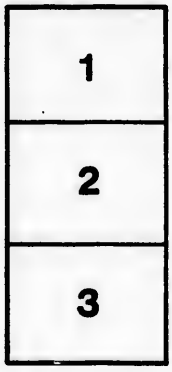

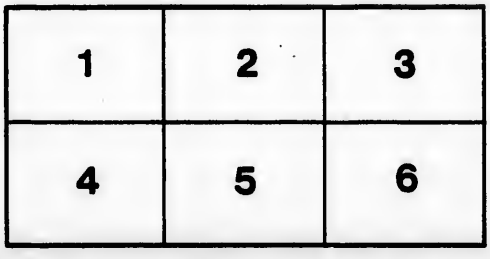

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ABSTRACT OF A CLINICAL LECTURE ON A CASE OF EXOPHTHALMIC GOITRE.*

By JAMES STEWART, M.D., '62

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Gentlemen,—The patient whom I exhibit to-day presents a marked example of exophthalmic goitre, or what is more commonly called Graves-Basedow disease. It is an affection usually described as exhibiting three symptoms. These are exophthalmos, goitre, and increased cardiac action. As we, however, proceed in the investigation of this man's case, we will find that, in addition to the above classical symptoms, there are present others equally as prominent and equally as important.

The patient, aged 31 years, lumberman, complains of great nervousness, with palpitation of the heart and shortness of breath on the slightest exertion. He first noticed these symptoms three years ago. He says that he rapidly became thin and weak, and was, in consequence, compelled to give up his work. It was some time—probably six months—before his people remarked that his eyeballs were prominent. He cannot remember when his neck commenced to enlarge. He had syphilis six years ago. In following his occupation he has been exposed to great hardships. There is nothing to be learnt from his family history.

* This lecture was one of the usual clinics on nervous cases conducted during the present summer session of McGill University. The patient was very kindly handed over to me for clinical uses and treatment by Dr. Reid.

As far as can be made out, it is not a neurotic one. He is, as you will easily observe, anæmic and emaciated. He is excitable, irritable, suspicious, and at times very despondent. He complains of severe frontal headaches at times. He is frequently troubled with sleeplessness. The prominence of the eyeballs is very marked, a rim of the sclerotic being clearly discernible all around the globes of the eyes, giving to them a peculiar lustre. The pupils are normal in size. What is now commonly known as Graefe's symptom is not present in this case—that is, the movements of the eyeballs and upper lids are not constantaneous. The lids follow the movements of the globe. It is said that Graefe's symptom is almost constantly present in this disease. It is due to the paretic condition of the involuntary muscular fibres (Müller's) in the lids. There is considerable enlargement of both lobes of the thyroid glands, but especially of the right one. This enlargement, the patient says, varies greatly from day to day and from hour to hour. The thyroid vessels are very numerous and dilated. There is marked pulsation in the gland, which is clearly perceived at a distance of several feet. A systolic blowing murmur is heard on laying the stethescope over the enlarged gland. There is marked pulsation over all the cardiac region, and on laying the hand over the same parts a marked systolic thrill is felt. The apex of the heart is displaced downwards and outwards. There is a loud blowing systolic murmur heard over all the cardiac area, with its maximum intensity at the junction of the third left costal cartilage with the sternum. The transverse cardiac dullness extends from the right edge of the sternum to half an inch outside the left nipple line, a distance of 4½ inches. The vertical dullness commences at the upper border of the third rib. We have here positive evidence of considerable enlargement of the heart, together with, in all probability, regurgitation through the mitral orifice. This regurgitation is no doubt due to simple dilatation of the orifice, and is therefore what is known as "curable regurgitation." There are no grounds for believing that there is any structural defect in any of the orifices. His pulse is 130. Slight exertion is sufficient to send it up to 160, and sometimes even higher.

Our patient presents all the marked symptoms of the disease—the protrusion of the eyeballs, the enlargement of the thyroid, and the increased pulse rate. All cases of exophthalmic goitre do not exhibit these three symptoms. The exophthalmos or the goitre may be absent, but I believe it is generally admitted that the quickened pulse is always present—that it is, in fact, an essential factor of the disease. A fourth prominent symptom in this case is trembling of the voluntary muscles, especially when the patient makes any exertion. Sometimes it is confined to the arms alone, but more frequently it affects all the voluntary muscles. In your text-books you will find scarcely a reference to tremor as being present in this disease. It is, however, in the great majority of cases, as constant in its appearance as either the exopthalmos or goitre. Not infrequently it is so marked and troublesome a symptom as to attract the patient's attention, to the exclusion of all the other symptoms. Less frequently it may be necessary to make the patient perform some muscular movements before it can be demonstrated. This tremor, studied by the aid of a myographic drum, furnishes a tracing* which is said to be characteristic, and enables a diagnosis to be made from other forms of trembling. The number of oscillations vary from eight to nine per second; while in paralysis agitans the number is only five per second.

We know nothing about the cause of the tremblings which form so prominent a feature in many cases of this disease. Charcot was the first to direct attention to them.

Another not uncommon symptom of exophthalmic goitre is is paroxysmal diarrhœa. In this man's case it has been troublesome for the last two years. He has an excessive appetite. He complains of a frequent cough, but which is not attended by any expectoration. Repeated examinations of the urine before and after meals fails to discover the presence of either sugar or albumen. He has paroxysmal polyuria.

These are the symptoms of the case, and there is no doubt

* A tracing taken of the trembling of the hands in this case showed the vertical oscillation gradually increasing in extent, then regularly decreasing, thus presenting a fusiform aspect. It was through the kindness of Dr. Wilkins, in placing at my disposal his extensive physiological apparatus and assisting me with his advice, that I have been enabled to take a tracing of the tremor.

whatever but we have to do with a well-marked example of exophthalmic goitre, or Graves-Basedow's disease. In addition to the three so-called classical symptoms, we have tremor, paroxysmal diarrhœa, cough without expectoration, and certain psychical symptoms, all of which. especially the first named, are almost constant in their appearance in this disease. Ever since the disease was described by Graves and Basedow, there has been considerable discrepancy of opinion as to its nature. Most of the text-books of the present day in which the subject is treated contain statements which would lead you to infer that the disease is essentially one of the cervical sympathetic and its ganglia. The evidence of its being a disease of this nerve, however, is very far from conclusive. In fact, it may be said that those who have closely investigated these points are of the opinion that the disease is not one of the sympathetic nerve. Although, in a few of the recorded cases, changes have been found *post-mortem* in the cervical sympathetic and its ganglia, there has been no constant relation between the severity of the symptoms present during life and the extent of the changes after death. Again, in a number of well-marked cases, no changes have been found in the sympathetic by such competent observers as Recklinghausen, Wilks, Paul, Ranvier and Ross. From this it certainly follows that there is not pathological evidence to support the view that the disease is one of the cervical sympathetic. Neither do physiological considerations or clinical facts give support to this view of the nature of the trouble.

To explain the dilated condition of the thyroid vessels, a paresis of the vaso-motor fibres running in the cervical sympathetic has been assumed, and to account for the increased rate of the heart irritation of the accelerator fibres in the same nerves. It is thought that the one and the same lesion is capable of bringing about two directly opposite effects, viz., paralysis of one set of fibres and irritation of another set. This is, of course, highly improbable, but what is still more so is, that a certain set of fibres should remain in a state of irritation for many years without any indications of paralysis. If any further proof were needed to show the inadequacy of changes in the sympathetic

as being the cause and origin of this disease, it would be found in the absence of pupillary changes. It is not conceivable that either partial or complete destruction of the sympathetic should not be followed by changes in the size of the pupil. Now it is a well known fact that pupillary changes are not present in this disease. The evidence just given, although of a negative character, is of sufficient weight to make us at least suspect that the central nervous system is the true seat of the changes that give rise to this disease. We, however, have facts of a positive character which go a long way to prove that it is in this part of the nervous system that we must look for its origin. Filehne has produced protrusion of the eyeballs, enlargement of the thyroid gland, and increased action of the heart in rabbits by wounding the restiform bodies. I am not aware that there has been any microscopical examination of this portion of the medulla, or, in fact, of any part of the medulla, in persons dead from Graves' disease. Whether changes will be found or not, it is, of course, impossible to say. The rather frequent occurrence of glycosuria and even diabetes lend support to the view that the changes in the nervous system will be found (in part at least) in the medulla.

That the higher nerve centres are sometimes involved is evidenced by the fact that insanity is not an infrequent complication. In all cases there is considerable mental irritability and despondency, while at times the psychical symptoms are so marked as to constitute the most prominent part of the disease. What the nature of the changes is in the medulla and higher nerve centres is not known. That they are of a so-called "functional" nature in a great number of cases, is shown by the very frequent and complete recoveries.

The *prognosis* in exophthalmic goitre is much better than some of our modern text-books would lead you to think. By far the greatest number of cases recover. Relapses are, however, not uncommon, prolonging the disease to many months and sometimes years. Those cases attended by very marked psychical symptoms have a much more serious prognosis. It is especially bad when mental depression alternates with violent

mania, especially when the mania is of the noisy, destructive, and incoherent kind. Cases of this kind run nearly always a short and lethal course. The prognosis in this patient's case is favorable, despite the severity and long-continuance of the disease.

Treatment.—As you will readily understand, the remedies that have been recommended in this disease are not few in number. Iron, quinine, digitalis and belladonna have all been lauded as having a directly curative action. It is very questionable, however, whether any of them possess this power. Of the four, digitalis is the one that is most commonly prescribed. It has, strange as it may seem, little or no power in slowing the heart's action. Iron, even for the relief of the anæmia that is often present in this disease, seldom does good, but frequently injury. There is no drug in my experience whose action is so beneficial in exophthalmic goitre as ergot. We know that when given in large doses, ergot acts in the following way on the heart and circulation: 1st, it slows the action of the heart; 2nd, it contracts the arteries; and, 3rd, it increases the blood pressure. How it acts in this disease I am unable to say, but the first sign that is noticed of its beneficial effects is a slowing of the circulation. From a considerable experience of its use in this disease, I have found that after two or three weeks' use, a pulse that is constantly beating at 130 or 140 is brought down to from 110 to 120. As the drug is continued, the swelling of the thyroid gradually diminishes also, and the protrusion of the eyeballs gradually recedes. To obtain marked amelioration, it is necessary to give it for at least three months. I have reported* three cases of exophthalmic goitre treated by ergot, where the results were very satisfactory. In all a cure resulted. In a disease which tends in many cases to spontaneous cure, it is necessary to be very cautious in coming to a conclusion as to the virtue of any drug that may be used. Whether ergot has a directly curative power remains still to be proved. I think, however, that I am quite justified in saying that of all drugs we possess, it is the only one which seems to act with marked benefit

* *Canadian Practitioner*, Sept., 1881.

in the disease. In order, however, to obtain its full physiological power, it is useless to prescribe it in the doses given in the Br. Ph. At least one drachm of the fluid extract should be given three times daily. Even from considerably larger doses than this I have never seen any untoward effects. Galvanism is probably the most powerful means for good that we possess. It should be applied, according to Erb,* as follows: The anode should be placed over the spine, between the shoulder blades, and the kathode worked along the whole of the cervical spine. From one to two minutes sittings of not more than six or eight Stohrer elements is recommended. Still weaker currents may be used directly applied to the posterior part of the head, so as dircctly to influence the medulla. Galvanization of the sympathetic (subaural galvanization) may fulfill the symptomatic indication of slowing the circulation.

The other symptomatic indications that arise during the course of the disease require no special treatment. The alleged cure of some cases of this disease by the removal of the enlarged thyroid has led some recent observers to maintain that there are two forms of Graves' disease—one local, and due to the pressure exerted by the enlarged gland on the sympathetic, the other due to changes in the central nervous system, and that the former is curable by surgical means.

We will commence the treatment of this man's case by giving him 45 minims of the fluid extract of ergot three times daily, and gradually increase the dose until he takes a drachm or more three times daily. To prevent any misconception as to its action, we will give it alone. If, after a course of three months' treatment, there is no improvement, we will then employ galvanism.

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* Erb, *Handbuch der Elektrotherapie*, s. 596.