

Athenian Asylum, although many chronic cases were admitted in the first six months, from October, 1887, to April, 1888, yet the results have been widely different from those in Corfu. The whole number of admissions from October, 1887, to January, 1893, was 361, covering, I suppose, about 350 different persons. Of these 361 there had been discharged up to January 1st, 1893, 245, of whom 66 had recovered and 57 had died, leaving 116 then under treatment. This shows a preponderance of recoveries over deaths, which would have been considerably greater but for the number of deaths from general paralysis; these have been about 15 in the five years, I believe. Of the comparative prevalence of this fatal malady in Corfu and at Athens, Dr. Chirigotes said in his first report (up to January 1st, 1889) that there were not so many cases of general paralysis among his 400 patients in Corfu, during the ten years 1877-1886, as among the 88 cases received at the Athenian Asylum in its first 15 months.

With these imperfect observations, which may, perhaps, lead others more competent to write on the interesting subject of insanity in Greece, I submit the matter to the readers of the "Journal of Mental Science."

*The Treatment of Myxœdema and Cretinism, being a Review of the Treatment of these Diseases with the Thyroid Gland, with a Table of 100 Published Cases.** By CECIL F. BEADLES, M.R.C.S., L.R.C.P., Assistant Medical Officer, Colney Hatch Asylum.

Introductory.

I propose in the following paper to review briefly the treatment that has recently been made use of in myxœdema, and compare the several ways in which it has been carried out, after a few preliminary remarks on the pre-thyroid methods.

First let me note that myxœdema, although not common, is now known not to be so rare a disease as was supposed only a few years back. During the past five years, that is to say from the year 1888, when the profession was more generally

* The most important discussions that have yet taken place are those at Nottingham in July, 1892 (in the early days of the new thyroid treatment), and Edinburgh, February 15th and 16th, 1893. To the reports of these I would direct your attention. I understand that at the annual meeting of the British Medical Association, at Newcastle, in August next, Prof. Horsley has promised to open a discussion on "The Thyroid."

awakened to the existence of this disease by the Clinical Society's report, up to the present time a careful search reveals just 200 distinct cases* referred to in the various medical journals of this country. But the vast majority of cases go unrecorded, for until within the last eighteen months cases were seldom reported unless there was something of particular interest in the symptoms of the case, or some point in the pathology of the disease that was thought worthy of notice.

The Older or pre-Thyroid Methods of Treatment.

From the time Sir William Gull† in 1873 first called attention to the disease now known under the name of myxœdema,‡ up to July, 1891, when Dr. George Murray read his paper in the Section of Therapeutics of the British Medical Association, at Bournemouth, entitled "Note on the Treatment of Myxœdema by Hypodermic Injections of an Extract of the Thyroid Gland of a Sheep," no treatment was known that could be said to have anything but the slightest influence on this slowly progressive disease, much less cure it. Since Dr. Murray's valuable suggestion, however, I think we may say that we now have in our possession a substance which can produce a greater change in persons suffering from myxœdema than is the case with any single drug or any other known disease.

During the time above-mentioned most of the preparations in the pharmacopœia, as well as others not contained therein, had been tried with a singularly unfavourable result. There was only one drug known that appeared to exercise any notable influence for the better. This was jaborandi.

Of the 65 out of the 109 cases of myxœdema reported on by the Committee of the Clinical Society§ in which the form of treatment adopted was specified, this was the only drug mentioned that seemed to be followed by a slight improvement. It was made use of in eighteen of the cases. This result was the same as that which has since been observed, and the result was similar in a patient I had under my care in Colney Hatch Asylum|| in the early part of 1892, where she had been an

* These include 40 cases referred to at the Edinburgh Med.-Chir. Soc. on February 15th and 16th, 1893, but not the 50 cases which were then mentioned as known to exist about the neighbourhoods of Edinburgh and Dundee.

† "On a Cretinoid State supervening in Adult Life in Women," Clin. Soc. of London, 1873.

‡ "Ord. Medico-Chir. Trans.," Vol. lxi., p. 57, 1877.

§ "Report of a Committee of the Clinical Society of London to investigate the subject of Myxœdema," 1888.

|| Case reported in "The Journal of Path. and Bact.," No. 2, 1892.

inmate over seven years. Although a slight improvement at times appeared to follow the administration of jaborandi, it was only very transitory, with but a slight noticeable change either in the bodily or mental symptoms, and the patient rapidly relapsed into her former condition.

Myxœdema is naturally a very chronic disease, in which periods of abatement are wont to occur, and, as is well known, myxœdematous patients under no special treatment vary greatly from time to time, but especially so with change of temperature and the season of the year; but although they feel in better health and are more active when the weather is warm, they never lose the characteristic facial aspect, although it may to a slight degree diminish. I have never heard of a patient who has so far recovered that it has been impossible to diagnose the case as one of myxœdema. They are always worse in the winter months, and it is then that death almost invariably takes place. Some of the improvement that has been said to occur after the use of jaborandi may therefore depend on the patient's surroundings, and it should be stated in which months this has taken place—a point which has not always been noted, and has, therefore, tended to somewhat mislead as to the benefit derived from this medicine.

Dr William Ord* at one time went so far as to state that in a few cases "under the prolonged use of jaborandi the signs of myxœdema have almost disappeared." But even this is by no means the rule, and only the other day Dr. Ord remarked at the Clinical Society† that "two years ago the disease was regarded as incurable."

The Committee appointed by the Clinical Society in their classical work on myxœdema already referred to, in their general summary of treatment, say:—"The use of tonics, particularly of iron, quinine, and hypophosphites (meeting the obvious debility belonging to the disease) has been adopted with a certain amount of temporary success. Having regard to the defective action of the skin, Jaborandi and pilocarpin have in many cases been administered, and, when administered over long periods, have appeared to exercise much beneficial influence. Nitro-glycerine has been used in a very limited number of cases with fairly good results. An important element in the treatment is the maintenance of warmth in the surrounding atmosphere, and the regular removal of patients during the winter to southern climates has appeared to mitigate

* Quain's "Dictionary of Medicine," 1883, p. 1016.

† "Brit. Med. Journ.," February 4th, 1893, p. 252.

their sufferings and to prolong their tenure of life."* On another page† they enter more fully into the results reported of individual drugs.

Other drugs appear to be of even less value, and the same remarks apply as those just made with regard to jaborandi. Of the drugs which have had special attention called to them and been stated at various times to have been used beneficially may be mentioned nux vomica, strychnia, arsenic and iron, and nitro-glycerine, by the use of which drugs, when combined with careful diet, baths, and massage, Sir Andrew Clark "regards the disease as fairly curable."‡ This is a vague term, and few would hold that there is even a "temporary cure" by these means.§ There are few illustrations on record. Dr. McCall Anderson, of Glasgow, has lately published a case || of a female, 20 years of age, with myxœdema of one year duration. The treatment consisted of taking arsenic and strychnine internally with a shampoo daily for half-an-hour, and an occasional vapour bath, in addition to which every now and then she had a subcutaneous injection of pilocarpine, gr. $\frac{1}{4}$, and a hot electric bath for half-an-hour at a time. A change for the better commenced after ten days, and in three months' time "great improvement was manifest." This, of course was an early case; the mind was not impaired. In another case, of longer duration, which he publishes at the same time, similar treatment produced no result after continuation for two months; it was then combined with the administration of thyroid juice, and was followed by marked improvement. I shall, however, refer to this case again.

Dr. A. Morison, at a meeting of the Pathological Society on October 18, said "he had seen a great benefit follow systematic

* "Myxœdema Report," p. 34.

† This is as follows:—"Jaborandi in 12 and pilocarpin in six. Of these 18, 11 improved. In three improvement was great, and in one of these hot-air baths were also used. In five no improvement; in two results not stated. Nitro-glycerine in three. Marked temporary improvement in one, slight improvement in one, no effect in one. Iron, quinine, and sulphur baths caused almost entire disappearance of œdema in one. Iodide of potassium in large doses temporarily relieved occipital headache in one. Induced current in two. Improvement in one. Galvanism to the spine probably of use in one. Iron beneficial in four, but in a much larger proportion no good resulted. Strychnia or nux vomica in 10. Improvement in two. Quinine, hydrobromic acid, phosphorus, cod-liver oil, cold baths, milk diet, and 'tonics' apparently useless." The above are extracted from 65 answers received. See page 22 of report.

‡ Quain's "Dictionary of Medicine," 1883.

§ Dr. Affleck ("Edin. Med. Jour.," May, 1893, p. 1050) has, however, known great improvement to follow this treatment.

|| "The Practitioner," January, 1893.

massage; the patient improved for a time, but ultimately the massage lost its apparent effect and a fatal result ensued.* Other observers have noted precisely the same fact.

Dr. William Dyson, in recording a case of myxœdema in a male who was under his care at the Sheffield General Infirmary,† writes, "On the whole the drug treatment did not appear to do much good; I was inclined to attribute this general improvement to the warmth, excellent nursing, and good wholesome food which he received." A photograph reproduced, which was taken when he was at his best, shows, however, an undoubted well-marked case of myxœdema. With this remark of Dr. Dyson many will agree.

Dr. Hector Mackenzie, lately in a lecture on the recent advances in the treatment of myxœdema, when speaking of a certain case that he has since treated by thyroid extract, said: "During the two years and a half we had been watching the patient the disease had been slowly, but steadily, progressing. Whether our treatment by jaborandi, tonics, rest in bed, massage, and the other means we had employed had prevented a more rapid progress we cannot say. Certainly, she had been temporarily benefited a little by her two admissions, and she herself had some faith in the efficacy of the medicines prescribed for her."‡

Dr. Hermon Gordinier read a paper last year before the Medical Society of New York, in which he said of a female with myxœdema of two years' duration, "The patient has been under my care for over a year, and I can see but little improvement in her condition. She thought at one time that pilocarpine did her good."§

The uselessness of a "tonic treatment" has been shown again and again. Dr. Benson|| records a case of eight years' duration in which this treatment was persisted in for five months "without any effects." The thyroid extract was given by the mouth, and in less than a month she became a "new creature."

We must conclude, therefore, that by such treatment little could be hoped for beyond producing a very temporary benefit by improving the appetite and increasing the action of the skin.

* "Lancet," October 22, 1892.

† "Sheffield Medical Journal," No. 1, October, 1892.

‡ "Lancet," January 21, 1893.

§ "Medical Reprints," September 15, 1892. "Report of Two Cases of Myxœdema with one Autopsy."

|| "Brit. Med. Journ.," April 15, 1893, p. 795.

The Treatment of Myxœdema by Thyroid Grafting.

So much for the older methods of treatment. I now pass on to the more modern form, viz., the treatment of myxœdema by means of the thyroid gland.

First, I will deal with the subject in its primary or surgical aspect, viz., thyroid grafting, and afterwards with the modifications and improvements that have since been introduced, by which the treatment has been simplified, rendered more efficient, and at the same time taken out of the hands of the surgeon and given into those of a larger class of men—the physicians and general practitioners.

It was in February, 1890, that Prof. Victor Horsley suggested the transplantation of the thyroid of a healthy sheep into persons affected with myxœdema, with the view to arresting the progress of the disease, basing his arguments on the experiments of Schiff, Eiselsberg, and his own.* These experiments went to prove that, when the myxœdematous process (cachexia strumipriva) developed in an animal deprived of its thyroid gland, the animal could be kept alive and in good health by the transplantation of the same gland from another healthy animal.

Cases are often recorded in the medical journals immediately after an operation or at the commencement of a new form of treatment, and we hear no more about them. Some of these are exceedingly interesting, and we should like to know how the case progressed and what was the final result of the treatment recommended. A case in point is that of thyroid grafting for myxœdema. Now that the subject of myxœdema is attracting so much attention, it would be interesting to know what has become of those patients who have been treated by this method, whether they show any permanent improvement, and how this mode of treatment compares with that of the subcutaneous injection and ingestion of the thyroid extract in this disease.

With this object I have collected together all the cases of which I know, and, where possible, have obtained further information concerning them. Let us see what have been the results so far.

M. Lannelongue, of Paris,† appears to have been the first

* "Note on a Possible Means of Arresting the Progress of Myxœdema, Cachexia Strumipriva, and Allied Diseases." "Brit. Med. Journ.," Feb. 8, 1890, p. 287.

† "Lancet," March 22, 1890, p. 665.

to carry out the operation. He reported his case to the Biological Society on March 7th, 1890, immediately after the patient had recovered from the operation and before any change in the patient's condition had occurred. No further information concerning this patient has been reported in the English journals, and we do not know if any improvement followed the operation. On September 3rd, 1890, M. Walther* performed a similar operation on a woman, 40 years of age, and reported the case to the Medical Society of Paris, the following November: slight improvement with less characteristic appearance of myxœdema was noted. Here again we are left in ignorance as to a later result. In the meantime Drs. Battencourt and Serrano, of Lisbon, reported on the subject of thyroid grafting for myxœdema.† Their case is briefly as follows:—A female, æt. 36, had myxœdema for several years with apparent absence of the thyroid. These observers introduced into the subcutaneous tissue of the inframammary region on each side the half of a thyroid gland of a sheep. An immediate amelioration was produced, which was first marked by an elevation of the temperature. The red blood corpuscles rapidly increased in one month from 2,442,000 to 4,447,000. The patient's movements became more easy, her speech less affected, and perspiration returned. The œdema went down, and her weight diminished from 239 lbs. to 227½ lbs. Menstruation now lasted only four days, whereas, previously, it was many weeks. It is to be noted that Battencourt and Serrano state, "The fact that amelioration commenced so soon seems to indicate to us that the thyroid tissue was absorbed."‡ This account, which appears to have been written about a month after the operation, is the latest to hand.

Mr. Hurry Fenwick§ first performed the operation in this country. It was on a woman, and was carried out at the request of Dr. Sansom. No improvement followed, for "the disease was too advanced to admit of any satisfactory inference being drawn as to the efficacy of the method." The case was fatal on the fifth day.

On April 2, 1891, Dr. W. J. Collins transplanted the thyroid gland of a sheep into a patient at the Temperance Hospital at the suggestion of Dr. Ridge.|| The patient was a woman

* "Lancet," Nov. 29, 1890, p. 1192.

† "La Semaine Médicale," Aug. 13, 1890.

‡ For the translation notes of this case, and from which the above is taken, I am indebted to my friend Dr. Boyce.

§ "Lancet," May 2, 1891, p. 1003; also "Brit. Med. Journ.," Oct. 10, 1891.

|| "The Medical Pioneer," Oct., 1892, and "Lancet," May 2, 1891, p. 1003.

aged 34. The symptoms, which commenced two years back, do not appear to have been advanced. Dr. Collins' latest remark on the case was in September, 1892. He says: "She pronounces herself in good health, is cheerful. Those who watched the patient most closely insist upon mental improvement having taken place, and there are not wanting more material points in which involuntary misconception is less probable."

Of the two remaining cases of thyroid grafting, that of Dr. Thomas Harris and Mr G. A. Wright was reported fully in the "*Lancet*."* The patient, a woman aged 48, who had shown signs of the disease for nine years, had, on April 4th, 1891, at the Manchester Royal Infirmary, part of the thyroid of a young monkey inserted beneath the breast. The operation was quickly followed by improvement in some respects, but in a few weeks the patient appears to have relapsed completely into her former state. She improved slightly again on returning to the Infirmary, a fact which the authors attribute to hospital diet and surroundings. Her speech remained quite unaffected. In reply to an inquiry as to the condition of the patient more recently, Mr. Wright, on October 18th, 1892, writes as follows: "The myxœdema case has not turned up lately, but when I saw her last she was much the same as before, though she thought herself better. Nothing further has been done so far as I know. My impression was that the stay in hospital improved her a good deal more than the thyroid grafting."

On the 2nd March, 1892, Dr. John Macpherson† showed a patient at a meeting of the Edinburgh Medico-Chirurgical Society on whom he had performed this operation on the 22nd October previously. The patient, who was an inmate of the Stirling District Asylum, was a woman, 39 years of age, with myxœdema of three years' standing. A remarkable mental and physical change followed rapidly on the operation, and appears to have continued for a time. On October 11th, 1892, Dr. Macpherson was good enough to write me: "My patient has quite recently been readmitted into this asylum. When formerly under my care she was melancholic, stuporose, and otherwise manifested the usual mental concomitants of myxœdema. On this occasion she is mildly maniacal, and she presents none of the mental or physical symptoms of myxœdema."

* "*Lancet*," April 9, 1892, p. 798.

† "*Edin. Med. Journ.*," May, 1892, and "*Lancet*," May 12, 1892, p. 609.

Writing again under date of May 11th, 1893 (just seven months later), he says: "The case is still under my care in this asylum. She is subject to slight recurring attacks of mania and melancholia, the latter, when it occurs, being characterized by mild stupor. Occasionally there appears on her cheeks the characteristic pink flush of myxœdema—the only symptom, if one accepts the mental disturbance as doubtful, of myxœdema. I am quite prepared to observe a relapse in her condition at any time. It suggests to my mind the possibility that there is just sufficient thyroid secretion being produced to prevent pathological symptoms, and that occasionally when the production falls below the necessary requirement of the system the mental symptoms make their appearance."

In this case, in which the myxœdema seems to have been more or less cured, there is raised the question as to the cause of the insanity, and this case would appear to make it the more difficult to explain the reason for the insanity that follows on myxœdema.

In addition to these cases, at a recent meeting of the Clinical Society of London, Dr. Ord said he had tried implantation of the thyroid gland with only temporary success.*

NOTE.—The operation of thyroid grafting for cretinism is commented on elsewhere. The results of Bircher ("Sammlung klinischen Vorträge," No. 357, 1890) and Kocher, obtained by thyroid grafting on the subjects of cachexia strumapriiva, are not here referred to, as they form a slightly different class of cases.

From the above references it will be seen that regarding the ultimate effect of the treatment in the earliest cases, those operated on abroad, we are ignorant, and it is to be hoped that an endeavour will be made to trace them. Excluding Mr. Fenwick's case, there remain four cases of which we know something. Of these, two appear to have been followed by a more or less prolonged period of improvement, the others only very temporary. Of Dr. Macpherson's and Dr. Collins' cases there are points worth noting. In the first the insanity returned within a few months, and concerning the second one can read in Dr. Collins' words that signs of the disease are still present although the disease was never advanced.

On the whole, I think we may conclude, therefore, that at present there appear to be no advantages to be gained by the severer operation of grafting over the minor one of subcu-

* "Lancet," Feb. 4, 1893, p. 248.

taneous injection, or the simple injection of the thyroid principle; moreover, we cannot at present point to a collection of cases such as we now have with the latter where the treatment has been followed by such uniform results.

Historical Sketch of Recent Modifications in the Treatment of Myxœdema by Subcutaneous Injection and Ingestion of an Extract, etc., of the Thyroid Gland.

We now come to the more recent suggestion of Dr. George Murray, a pupil of Prof. Victor Horsley. Dr. Murray being struck with the rapid action that was recorded as following the operation of thyroid grafting concluded that this was due to the absorption of the thyroid juice that was still present in the piece of thyroid tissue at the time of implanting, as the interval was too short for the formation of either fresh secretion or new thyroid tissue. Working on this hypothesis, he prepared an extract of the fresh thyroid gland of a sheep by mincing the gland and extracting the principle with glycerine, and injecting this subcutaneously into a patient the subject of well-marked myxœdema. The result was astonishing, and he communicated it to the profession, as already stated, at Bournemouth, in July, 1891.

On the Continent, about the same time, Brown-Séquard and d'Arsonval are said* to have suggested, from the experimental results obtained on animals by Vassale and Gley, the probable utility of thyroid juice in myxœdematous persons if injected hypodermically. But they do not appear to have carried it into practical effect. Bouchard,† later, came to similar conclusions from his own experience.

Murray's paper appeared in the "British Medical Journal,"‡ and the treatment there proposed, of the subcutaneous injection of a glycerine extract of the thyroid gland of some animal, has since been carried out in a large number of cases, and the results obtained have been almost invariably as satisfactory and wonderful as those first recorded, in many cases even more so.

Up to the present time (May 18th), so far as I have been able to discover, there have been 100 cases published in which this treatment, or some modification of it, has been tried. About 40 of these were actually treated by the subcutaneous

* "Lancet," Jan. 21, 1893, p. 124.

† "Brit. Med. Journ." (Epitome), Nov. 12, 1892, and "Arch. Gén. de Méd.," Oct., 1892.

‡ "Note on the Treatment of Myxœdema by Hypodermic Injections of an Extract of the Thyroid Gland of a Sheep." "Brit. Med. Journ.," Oct. 10, 1891.

injection of an extract in all respects similar to that used by Murray.*

A large number of the cases appeared originally in "The British Medical Journal," and the majority of those elsewhere reported, may be found referred to in that journal.† With the exception of two cases they have all been followed by a remarkable improvement in the condition of the patients. The two exceptions were those referred to by Dr. Michell Clarke, at the meeting of the British Medical Association at Nottingham.‡ No details are given, but it is said that "no change resulted from the injections," a fact exceedingly strange when we consider that every other observer who has carried out this treatment has obtained so marked an alteration in the appearance of the patients when the subject of myxœdema. One, therefore, cannot help thinking that some discrepancy must have occurred in the diagnoses or mode of treatment adopted by Dr. Clarke.

Murray's method was a much simpler one than that of implantation, and the risks of a large operation were done away with; at the same time the immediate results were more satisfactory, and the remote were equally good or better.

The next real advance made in the treatment was that proposed by Dr. Hector Mackenzie.§ On July 27th, 1892, being unable at the time to obtain the extract for injection, he commenced to feed a patient at the Royal Free Hospital on fresh thyroid glands. As an equally good result followed this mode of treatment it was continued, and in less than three months the disease was scarcely recognizable. Dr. Mackenzie claims for this method that it has advantages over the subcutaneous mode in that it is more readily obtainable, can be more easily carried out, and is free from many of the risks and other disadvantages attendant on the injection of the fluid extract. The thyroids in this case were pounded and given in a little brandy. He showed that it was sufficient to let the patient eat the thyroid or swallow an extract made with glycerine.

* I have been informed that some time back Messrs. Brady and Martin alone were supplying the extract for the use of 100 cases, so there are probably now considerably beyond that number of cases undergoing the treatment.

† The earlier cases have also been tabulated by Dr. Robert A. Lundie on much the same lines as that now presented, and appear with his paper, "The Treatment of Myxœdema," which he read before the Edin. Med. Chir. Soc., and are printed in "The Edin. Med. Journ.," May, 1893.

‡ "Brit. Med. Journ.," August 27th, 1892.

§ "A Case of Myxœdema Treated with Great Benefit by Feeding with Fresh Thyroid Glands." "Brit. Med. Journ.," October 29th, 1892.

At the same time as Dr. Mackenzie reports his case, Dr. E. L. Fox, of Plymouth, reports another case of myxœdema,* whom he had treated at first by the injection of a glycerine thyroid extract, and afterwards by lightly fried and minced glands taken in currant jelly. This was followed by a similar result. The treatment was begun on June 2nd, 1892.

Professor Howitz, of Copenhagen,† however, had already carried out this principle, for on March 22nd, 1892, he commenced feeding a patient with the thyroid gland of calves, and he made known his results on July 6th. He, too, adopted this method on the principle that it was more accessible in daily practice, and was a safer form of administering the remedy.

At a meeting of the Clinical Society of London on January 27, 1893, Dr. Arthur Davies showed a case ‡ in the treatment of whom he had employed a further difference in detail. This was the administration by the mouth of a powdered extract obtained by extracting the active principle with glycerine and reducing the resulting extract to a powder by heat. It was Dr. Mackenzie who first suggested its preparation, which was carried out by Mr. Edmund White, pharmacist to St. Thomas's Hospital.

These various methods, which differ only in detail, have all been since tried on a number of cases, and they differ little in their result. There is invariably the same remarkable improvement and cure recorded. The extract has been given in a variety of vehicles, such as brandy, beef-tea, water, milk, jelly, with pepper and salt, etc., and the gland has been first subjected to a variable amount of cooking, with the object of rendering it more palatable.

It remains for me to mention one more modification that has been introduced by Vermehren, of Copenhagen.§ He records a case of sporadic cretinism whom he treated with success by the administration of "thyroidin." This substance is obtained by the precipitation with alcohol from a glycerine extract of the finely minced gland, and takes the form of a greyish powder. This substance is, of course, equally applicable to cases of myxœdema, and probably differs little, if at all, from the powder used by Davies.

* "A Case of Myxœdema Treated by taking Extract of Thyroid by the Mouth." *Brit. Med. Journ.*, October 29th, 1892.

† *Brit. Med. Journ.*, February 4th, 1893, p. 266, and *Semaine Méd.*, 8th Fév., 1893.

‡ *Brit. Med. Journ.* and *Lancet*, Feb. 4, 1893.

§ *Brit. Med. Journ.* (Epitome), April 15, 1893. (*Deut. Med. Woch.*, March 16, 1893).

With all these various minor modifications there still remains the one disappointing fact that as soon as the treatment is discontinued the patient relapses, so that in a few weeks the patient gradually passes back into the condition of myxœdema from which he has only too lately been resuscitated. So long as the drug is in use, whether it be by hypodermic injection or the ingestion of the gland or a preparation therefrom, so long the improvement continues ; but let it be dropped for a time, then without fail do we see only too soon the reappearance of the disease. But it has now been proved that only a small dose is needed to maintain the condition, and that not at very frequent intervals, and the taking of an occasional dose is surely a hardship not hard to bear even were it necessary for the remainder of the patient's life. Although at present there are wanting real indications of a permanent cure, it would seem that after a considerable period the dose may be reduced to a mere trifle, and who knows but that it may finally be dispensed with altogether !*

(To be continued.)

General Paralysis Occurring about the Period of Puberty.

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We are in the habit of regarding general paralysis as in the main a disease of the prime of life—of a time when the fresh vigour of youth has subsided, but before the first touch of decay has laid its hand upon the organism ; when the mental faculties are strained to the utmost in the pursuit of wealth or pleasure, or social distinction, or in the keen struggle for existence entailed upon so many of our race. We are not indeed unaccustomed to meet with cases of this disease occurring both before and after this epoch of life, but the association of general paralysis with the period of childhood and puberty has hitherto been a very unfamiliar idea. Nevertheless, scattered cases have from time to time been published which tend to show that the period of life which appears to offer most exemption from all the ordinary causes of the disease may still claim its victims, and that at, or

* Such, too, are the views of Dr. Robert Lundie, as contained in an interesting and popular article, "A New Departure in Medical Treatment," which he has lately contributed to "Chambers's Journal," May 6, 1893.