THESIS

"SOME OBSERVATIONS ON GIRDLE OBESITY WITH PITUITARY TREATMENT, IN GENERAL PRACTICE".

By

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INTRODUCTION.

When one enters the realm of Endocrinology, one must be fully equipped with a clear vision of one's plan of campaign, and with a definite understanding of the decisive end in view. It is a realm but sparsely surveyed and almost wholly uncharted, and so it is necessary to fix definitely one's boundaries, and even these must serve only as tapes locating an area, which some day will be permanently defined and on whose foundation a stable building will take shape.

The object of this survey is to record the results which have been obtained, by one particular mode of treatment, in several patients, who have shown certain features representing that type of Obesity, whose main cause, we believe to be due to some abnormality connected with the functioning of the Pituitary Gland. These results obtained in women whose ages have ranged from 13 years of age to 45 years of age. Of the cases recorded, as opposed to the greater number observed, the duration of period of record extends in some cases to over 24 months.

The particular mode of treatment has been the supplying of Thyroid Gland and Whole Gland Pituitary.

The predominating feature of the Obesity has been what has been called Girdle Obesity.

To overcome what is perhaps one of the greatest disadvantages obtaining in General Practice in undertaking such an investigation, namely that of keeping control over the patient, the following plan has been adopted; medication has been prescribed to cover a certain known period, consultations have been arranged at the termination of each period, and to enlist the

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wholehearted enthusiasm of the patient duplicate records have been made out to appeal to intelligent reasoning. With it all, however, the recorded cases are in the minority, while the observed cases serve to strengthen many of the results thus obtained.

It is an interesting fact that only one patient came under treatment complaining of the dominant feature peculiar to this particular type of Obesity, and her reason for doing so is equally noteworthy. This patient, J.W. aet.37 years, consulted me during mid-summer 1927, on acccount of her bodily shape. She was a keen sea-bather, and had already had a holiday at a seaside resort but had had to forego much of her wonted bathing on account of the taunts directed against her by those present. She explained her abnormal figure, and was anxious to regain her old self before her next holiday, three months hence, became due. The majority of these patients came directly to be treated for stoutness, and in all of these there were undoubtedly certain features denoting their superadded alimentary obesity.

There were others who came with a more definite symptom, which, it was thought, might be brought into line with many of the signs found on further examination.

It was noteworthy with what reserve patients were at first inclined to receive the facts found at examination. Obesity, they would admit, but to be obese and to be disproportionate on that account was an entirely new thought to the majority of these people, and fortunately, once their concurrence was gained, their enthusiasm was readily enlisted. This point seems of considerable importance in its effect in these two ways, that, firstly/

firstly, it may account for the marked advancement of this so-called "girdle obesity", which in itself is so insidious in its onset, and secondly and consequently it may be, it invites, as it were, some degree of superadded "alimentary obesity" before which time medical advice is seldom sought. One other factor is of interest in this respect, namely that in many of these people who came with minor complaints - e.g. Chronic Cough, or Deafness - their stoutness was taken as the measure of their fitness as long as they found their weight not in great excess to that suggested by the ubiquitous tables of "Average Weights". That reference is made only to patients of the female sex, on consideration, does not seem so strange as at first sight it would appear. This so-called "Girdle Obesity" is not, by any means confined to the one sex only, although it would appear that it greatly predominates in women as opposed to men. It would seem that there are many causes, and some of these what might be called subtle causes, for this apparent, and one would judge, real predominance among women. Perhaps one might class these causes into very wide groups and denote them thus:

A. Those which arise from the natural or conventional social ideas as regards the differences existing between the two sexes. Such an idea might be exemplified by the maxim that man needs food to maintain and increase his expenditure of energy, while woman, the supposed weaker sex, having less call on her output of energy is less justified in becoming obese. Accordingly it is only an exaggerated truth to say that a man's obesity tends to be the measure of his prosperity.

B. Those which arise from the natural or inherent ideas/

ideas, and this affects the female sex mostly, one would think. For example, it is a truth, undoubtedly popular, that obesity may become inimical to a possible future pregnancy, which at one time or other in her life, has been her goal. For her own sake and for her partner's sake, obesity must be countered.

C. Those causes, or more correctly perhaps, those circumstances which one finds have so frequently been present in the history of cases which have come under observation. Thus it would appear that in the etiology of this phenomenon of "Girdle Obesity" there may be a reason for this heavier incidence among women.

It must be noted here, as formerly it has been inferred, that the popular belief is that obesity is one and one only definite entity and the pathological distinctions between the different types are unknown and almost inconceivable to the laity.

During the time covered by this investigation, some three years, only one male patient, whose condition appeared to be a complex obesity, alimentary and hypo-pituitary, sought advice on this account only. W.H., aet. circa 40 years, on the recommendation of his wife, sought treatment for obesity. He was put under treatment and he appeared satisfied for a season with his undoubted progress but on the advent of a busier time, (he was a master plumber), he found it irksome to continue treatment and supervision, and decided to postpone this till later. In this case one was suspicious that the underlying cause was really a poor appreciation of the abnormality present.

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DEFINITION OF OBESITY.

When one considers the subject of Obesity, one is at the very outset confronted with the difficulty of enunciating a clear and accurate definition. Still more difficult, perhaps almost impossible is it from the practical point of view to be able to label some people as obese and others as not obese. A moment's thought, however, at once convinces us why this should be so. We are dealing with two main factors, both of which are outwith the bounds of calculation. Firstly, the human element is no constant algebraic equation, and secondly, and in consequence, endocrinology, which might be said to be the mainspring of the internal economy of man's existence, would appear to be the very essence of the physical creation of that human element. Obesity, them, might be said to depend on man's mental attitude towards those things which are known to be its cause and encouragement, but also it is dependent on the vagaries of his internal economy, as represented by his internal glandular secretions. Thus it becomes difficult to say about some people, that they are obese or are not obese. On either side of these border-line cases, however, there are those of whom we can form a definite opinion without fear of contradiction. Again obesity is insidious in its onset, and while it may be possible and justifiable to surmise the main cause for its intrusion into a man's being, it is impossible to say that on this or that date obesity ensued. Obese people are those people whose systems are burdened by their reserved store of food, - food which they have assimilated and have placed in storage.

It follows from the above that obesity may be courted and by that is meant voluntarily induced, or perhaps/

perhaps subconsciously so, and again it may ensue despite all efforts made to counter its approach. Furthermore it is evident that both causes may be at work, with the end-result that it may be impractical to determine the primary root-cause of the existing stoutness.

Sex Difference.

To appreciate obesity, we must have respect to the fundamental difference that exists between male and female. The rudiments of Nature would bear the conviction that man must have a thought to his store of energy, while it is incumbent on woman to be provident in her food supplies. For man, then, any surplus over his immediate requirements is justified solely on the ground that it is readily accessible for increased energy expenditure, and also, and what is of extreme importance, that its burden does not hamper his present activity. For woman, she must so balance her reserve stock that with unimpaired vitality her supply-store is fully garnered. To this principle of Nature the whole make-up of the human frame responds. As William says (vide p64 "Obesity" by Williams), "Man's form is erect and closely knit, seeming instinctively to be seeking action; woman's is more uneven, with large hips and flowing protuberant curves of breast and abdomen and flanks, falling naturally into a state of repose." Thus it would appear that Nature has so equipped man to have a care for his physical integrity and activity, and woman for her vitalising maternity. In so far as these tenets are impeded by surplus stores, so far is the abnormal condition of obesity present. No age in the individual's life is exempt from this ruling, as it is inborn. One would consider, perhaps, that the man, self-inflicted with obesity/

obesity, has completely run counter to the dictates of Nature, while the cultivated stoutness of woman is but a sign of imprudent overstepping. For this reason, we find that "Man's obesity is disorderly, woman's is orderly". In so far that we are at present dealing with the conscious or subconscious efforts on the part of the individual, our criticism must be reserved for that particular type of stoutness resulting therefrom. Such a type has been designated Alimentary Obesity. Alimentary obesity is that general fatty invasion of the body tissues which ensues in accordance with the law of supply and demand. Where there is an excess of supply over the needed and legitimate requirements of the particular individual, there must necessarily be a wastage or a storage of the surplus. To the female, as we have seen, to build up a limited reserve is more or less obligatory, but with man there is no such justification. Thus it is apparent that there are respectively two different diagnostic viewpoints; in the former obesity resolves itself into a question of degree, while in the latter it is more a question of handicap or embarrassment.

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ALIMENTARY OBESITY.

The mechanism whereby an individual, having at hand this excess of supply, becomes a victim to alimentary obesity, is physiological. We mean, of course, the process of digestion, and assimilation of food-stuffs. Again along with this must be reckoned the natural physiological demands which have to be met by the body ecenomy. Thus, in brief, we can say that where the individual's assimilation is in excess of his or her normal requirements, having regard to the particular constitution and the demands thereon, obesity will be encouraged. By simply lessening these demands or, on the other hand, by merely increasing assimilation of food one would arrive at the same end-result. While it is hardly possible to reduce to calculations energy expenditure, and make as it were arithmetical energy equivalents, particularly so when we deal with the human element and have regard to mental and physical activity, we find the problem of balancing the various food-stuffs much more simple. These can be classified into their three great proximate principles, and furthermore, they can be analysed according to their calorie-equivalent. By this means it is possible to arrive at the optimum dietary suitable for any particular individual which will have respect to the constitutional and also the known normal energy demands of that individual, having in view also, the warding off of alimentary stoutness. It would seem wise, also, to have a care to the actual mode of dieting, as it seems quite feasible that the same ingredients differently proportioned can give different results. Reference might be made here to the varying results obtained from the indiscriminate partaking of fluids and solids together. There is much evidence to support the method of taking a minimum of fluids with solids compensating for this restriction by taking extra drinks

between/

between meals. The rationale of taking fluid before meals or again not less than two hours after solid fare, would appear to be that in the first case the fluid - which, of course, does not mean nutrient fluids - acts mechanically washing out the stomach and possibly feebly stimulating it, thus freshening and preparing it for the solids subsequently ingested, and in the second, by delaying for some two hours after food, the digestion is allowed to proceed with the gastric juices undiluted. Thus digestion would be less hampered, and being so, a needless expenditure of energy would be saved.

From a practical point of view, then, it is found more simple to deal with diet, as it is more easily balanced than is energy expenditure, and while we must have respect for the individual's general bearing and activity, in considering obesity we must pay particular care to dietary as opposed to the general advice to be given regarding activity and exercise.

Diet in relation to Alimentary Obesity.

On broad lines, then, in dealing with the problem of alimentation, we must consider the relative importance and fate of the three differing elements comprising food-stuffs, namely Protein, Carbohydrate and Fat. Man's intake of these will correspond to his energy, storage and wastage obtained from these. Proteins are essentially the great tissue builders and repairers and on these the body is dependent to compensate it for the wear and tear of its structures and also for their general make-up. Carbohydrates and fats are, on the other hand, the great energy producers, and in being so the body has a care to their storage. From this it would appear that while the individual regulates the actual food supply, the internal economy is in sole charge of its immediate disposition. Not only so, but we find that by chemical action these

food/

food elements are disintegrated and simplified, and later may be synthetised into compounds for utilisation or reservation according to the immediate bodily requirements. It has been found, then, that, in their functioning, the internal secretions of the body are capable of breaking down the more complex constituent such as fat into the less complicated element such as carbohydrate, and for this reason, where there is a plentiful supply of the essential principle of carbohydrate this may be utilised as a fat-sparer. It becomes clear, then, how by the plentiful supply of fats, or again, by the plentiful supply of carbohydrates, by which means one can encourage the body to be thrifty in its utilisation of ingested fats, storage may be induced to a very marked degree, so that there arises that condition known as Obesity. Thus we see how it is possible to encourage the onset of stoutness of alimentation by having regard to the kind of food as well as the amount of food consumed. We have seen also, how it is important to have regard to the mode of dieting. It is more or less a recognised fact that the various organs of the body if they are overstimulated for any length of time, show signs which can be interpreted as chronic irritation, and if these danger signals be ignored exhaustion will result from this abuse. The digestive organs are not exempt from this. Disregard of the proper evacuation of food-wastage, as well as too frequent stimulation of the gastric mucous membrane sets up chronic irritation in the bowel and stomach respectively, and this upset of normal balance of the digestive system will in certain cases still further hamper the patient by paving the way for a subsequent obesity. To guard against obesity then, one must combat any existing constipation/

constipation, and prohibit all irregularity in food intake.

Having considered the etiology or mode of onset of the stoutness caused by dietary indiscretion, let us now discuss the principal signs pointing to its presence.

Signs of Alimentary Obesity.

. Obesity is essentially an invasion of the normal tissues by adipose tissue. This infiltration is not limited to the subcutaneous or connective tissues but affects the internal organs both extrinsically and intrinsically. This permeation of surplus adipose tissue acts detrimentally, in the main, in two ways, firstly mechanically, obstructing, and secondly disintegrating by its encroachment. One could illustrate these effects by considering the raised blood pressure, due to the stimulation called forth by the increased resistance over normal, leading later to a low blood pressure as the consequent irritation and exhaustion of this mechanism. Or again, one might consider the effect as shown in the respiratory system, where dyspnoea and a tendency to chronic bronchitis may be present. Fatty infiltration, on the other hand, has been known to cause tracheitis.

Consequent on these deleterious effects on the body organs generally, as one would anticipate, there arise signs of autointoxication due to the mal-functioning of the various vital systems of the body. For example there is a tendency to improper combustion of the food partaken and this shows itself in a deranged metabolism generally.

Perhaps our best criterion leading to the incrimination of obesity as the main or sole cause of deranged metabolism is that evidence which one finds in the general physical appearance of the subcutaneous tissues themselves, and/

and for the present we are most concerned with this. By a general survey of the whole frame of a stout patient we can gauge fairly accurately, whether or not stoutness is of serious pathological import. As we have said, the obese man is mis-shapen, while the figure of the stout woman is more or less a uniform but gross representation of the normal female figure. Excess of fat is deposited in those subcutaneous spaces where fat usually is wont to be stored. In ordinary obesity, that is the sum-total of the evidence found.

Differential Diagnosis.

This is a point of considerable importance when we consider our differential diagnosis. It is necessary to ascertain accurately that the extra burden carried by the patient is solid and not fluid, such as may result from heart or kidney lesions. Having done this, one must exclude each of those maladies which may answer this test, but yet which are in themselves definite lesions separate and apart from that of obesity.

Panniculitis.

Firstly, let us consider that condition known as Panniculitis. This, as its name implies, is a condition of inflammation of the panniculus adiposus, which is the normal subcutaneous layer of fat. In this normal layer of fat, or areolar tissue, as it is commonly called, are the tiny nerve twigs and blood vessels supplying the part, and consequently these become involved in this local change, giving in this way important evidence of the existing inflammation. Pain due to local pressure over areas affected by panniculitis, may be very intense, as these nerve twigs are, as it were, already set on edge, so that even the slight pressure of the weight of the clothes on the part may cause great discomfort to the patient/

patient. Again, subcutaneous ecchymosis follows the slightest injury, and indeed this latter may be such that the patient may have difficulty in recalling the knock responsible for the obvious bruising. Panniculitis, then, may be and is found in patients who may be very thin, while on the other hand where there is much fat deposit preceding or succeeding this inflammation, it will naturally tend to aggravate the suffering. Panniculitis may be circumscribed affecting only one small area, while on the other hand like alimentary obesity with which it is often associated, it may assume a general distribution. As a rule, however, the fat is arranged in lobular masses around the hypertrophied fibrous tissue, while often the skin appears to be tacked down as it were to the inflammed subjacent areolar tissue. To the masseur this condition, as opposed to that in general obesity, might be compared to the feeling given by gamgee as opposed to cotton wool.

Myxoedema.

Myxoedema, a condition found present in cases of hypothyroidism is characterised by general dropsy-like swelling of the subcutaneous tissue but easily diagnosed from dropsy by not pitting on pressure. Putting aside other associated signs of diagnostic importance, it is, nevertheless, not difficult in an advanced case to rule this out as a condition of simple obesity. The skin to the touch is dry and rough as contrasted with the oleaginous feeling to be appreciated in cases of obesity. This condition of the subcutaneous tissue is due to the deposition of mucin widespread in these tissues and, as a rule, these have a definite and characteristic feel on palpation. As has been said, however, the cardinal signs of/

of Myxoedema are so prominently marked that the differential diagnosis is more or less a simple matter. These signs, which are most prominent, might be enumerated as follows: there is the heavy stolid countenance which is peculiar to myxoedema, the broad face, yellow and pallid, with pink blush on cheeks, and with thickened lips; the leathery voice, speech being slow and thick; the hands and feet are broad and spade-like, and the gait is clumsy. The mind is dull and slow, and in advanced cases there are often marked mental changes. We must note, here, that myxoedema is the result of a marked degree of deficiency on the part of the Thyroid Gland, so much so that it has become a peculiarly definite malady in itself.

Diabetis.

One other condition must be carefully excluded before labelling any patient as a case of obesity, and that is Diabetis. As with Myxoedema, this, too, bears a peculiarly intimate relationship to a particular endocrine deficiency. The disease of Diabetis has for a long time always been associated with some failure in the secretion of the Pancreas, and this has ultimately been definitely proved, just as in the case of Myxoedema, with Thyroid, with the beneficial results to be obtained by the use of Insulin. This product is an extract obtained from animal pancreas, and by the administration of insulin to diabetic patients it has been found possible to counteract the ill-effects shown by them due to their deficient pancreatic secretion. Many of these diabetic patients are very stout and it may be only very careful examination will place them in their proper category as diabetics. The chief point in diagnosis here, is the continuing presence of glycosuria, resulting, as we now know, from a constant condition of hyperglycaemia, or a subnormal sugar tolerance. While

obesity/

obesity may be a predisposing factor or even a concurrent disease, our main care in treatment is dietary, but our chief anxiety must be to see that whatever diet is given, it is properly metabolised by the individual, otherwise there will be grave danger of a sudden and alarming autointoxication. With diabetics there is a much greater urgency for careful dietary supervision and this must be directed wholly to its ultimate and efficient disposal. It is important, therefore, in all cases of excessive stoutness, to exclude all evidence pointing to autointoxication, arising from pancreatic deficiency. This is a definite medical entity, and treatment must necessarily be directed to the condition of the insulin-bearing gland.

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ENDOCRINE OBESITY.

Up to the present we have noted two conditions simulating simple alimentary obesity, but we find both of these are due to imperfect functioning of some one member of the endocrine system, the first due to deficiency of the Thyroid Gland, the second to that of the Pancreas. In both diseases, the Obesity appears more as an accidental feature in their pathology. On the other side of the scale there is placed, by virtue of our present incomplete knowledge, two particular types of obesity, known as Trochanteric and as Girdle Obesity. Our justification for doing so, is that the concomitant symptoms pointing to these former diseases, are very much more striking and indeed more alarming than is the obesity which may be present, while again in the latter two types of stoutness, other symptoms looked for seem more or less accidental and there seems to be no definite well-marked syndrome of disease in its early stages.

There are many points of similarity between these two types. Both might be called disproportionate obesities. As opposed to alimentary type, accordingly, the weight recorded is not at all a relative measure of the degree of abnormality present. Both conditions are indicative of alteration in the normal endocrine balance. They affect both sexes in the same fashion, are insidious in onset, diagnosis is less simple than in the cases of ordinary obesity, which latter may be concurrent and may completely overshadow this important etiological factor. Again, endocrine obesity is, as a rule, a disease occurring in the earlier years of life, while alimentary stoutness is associated more with later life. In uncomplicated endocrine obesity it seems probable that there is less infiltration by the fat of the tissues but more a general fatty/

fatty superimposition on the muscular framework, and consequently there does not appear to be the same insinuation and consequent crippling of the internal as well as the external structures of the body. Trochanteric Obesity is characterised by a peculiar deposit of adipose tissue over the great trochanters. Associated with this curious feature one may also find an abnormal pad of fat, known as the Cervical Hump, situated over the 7th cervical spine on the back of the neck. Cases diagnosed as trochanteric obesities have been suspected as suffering from gonadal insufficiency and careful examination for other confirmatory signs have further strengthened this hypothesis. Curiously enough, only one case, suspected to be a Trochanteric Obesity, came under observation during this study. This was an elderly widow, who had been advised massage on account of extensive Fibrositis. She stated that her Masseur, who had greatly improved her arms and shoulders by his treatment, had evidently found this Cervical Hump very resistant to his treatment. On examining patient more carefully, this pad of fat was quite outstanding. Further examination proved that her hip-measurement was out of all proportion to the rest of her body, and as she was, and still is a devoted sea-bather, this was no new discovery to her. It was interesting to note that she had many years ago suffered from what she called an "ulcerated womb", and for this she had undergone a "very thorough" operation. Girdle Obesity, on the other hand would appear to be a more common type, as it is also a more extended obesity. The abnormality here extends from the shoulder-girdle downwards to the knee-joints, thus making a girdle of fat encircling the middle half/

half of the body framework. The causal agent of this obesity is considered to be some abnormal deficiency of the Pituitary Gland. In considering hypopituitarism, reference must be made to phenomena connected therewith, and we must consider conditions hitherto known as Adiposis Dolorosa; Dercum's Disease and Frohlich's Disease.

Dercum's Disease and Adiposis Dolorosa.

It would appear that the condition noted by some authors as Dercum's Disease is one and the same thing as what is elsewhere described as Adiposis Dolorosa. As Osler in his Principles and Practice of Medicine (The Lipomatosis, p.452) says, in his description of both, "in the words of the original description this is a disorder characterised by irregular symmetrical deposits of fatty masses in various portions of the body, preceded or attended by pain and associated sometimes with asthenia and psychical changes". Here we would appear to be dealing with a condition somewhat further advanced than the premises of this study and it is expedient that a detailed discussion be afforded. Generally one finds that the areolar tissue shows the following changes. There is a general inflammation of fibrous tissue, and also, what may be causal in this respect, or only concomitant, there is a greatly increased deposition of fat amounting to such an extent that the patient appears to be as it were, hide-bound. Thus the subcutaneous fibro-fatty tissue is very tender on pressure as there is a resulting neuritis of the superficial nerves. Resulting from this subcutaneous cramp-like thickening, we find the Corium becomes hypertrophied and coarse, the hair is deciduous, dry and broken, and the sweat glands tend to atrophy. This general fibrosis tends to spread to the internal organs and other symptoms consequently ensue.

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In so far that the body areolar tissue is widespread mainly in that area we have noted as the girdle area, Adiposis Dolorosa affects this region chiefly, and we find that the hands, face and feet are usually spared. An important point in this disease would seem to be the accompanying asthenia, leading to a gradual failure of the vitality. Patients seem to be liable to show similar mental changes to those seen in Myxoedema. It is of great interest to note that in some cases the post-mortem reports are to the effect that the Pituitary Gland has been found markedly degenerated.

With regard to individual cases of Girdle Obesity subsequently here reported, case 4 shows features markedly suggestive of above condition.

Frohlich's Disease.

When we come to consider that disease known as Frohlich's Disease or Dystrophia Adiposo-Genitalis we find that as with Dercum's Disease we are dealing with a very cognate subject to our present study. This malady as it name would imply, involves the syndrome of Sexual Infantilism and obesity. For the present we are concerned only with the feature of obesity, and we find that the clinical picture gives precisely that type of obesity which we are discussing, namely Girdle Obesity. One other characteristic to be noted is that in considering the pathology of this disease it has been found that the morbid anatomy has shown that in this disease the Pituitary Gland has been found greatly degenerated. As with Dercum's Disease, then, it would seem that Frohlich's Disease would incorporate the condition at present under study, but not in so far as being an advanced condition of Girdle Obesity but more in being an associate with it. It may be of interest to

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note that recently one patient appearing to resemble the above clinical picture came under observation during this investigation. The patient, a male, showed typical girdle obesity, but refused to be treated for same. Later his wife came under observation, for gynaecological examination. To satisfy her of her normality she was referred to a gynaecologist who had seen her some three years previously. His report was to the effect that her condition was normal, and he could only with difficulty credit that sterility was due to frigidity on the part of her husband. His patient's real condition was her desire amounting to passion to become a mother, but during these three years this was impossible on account of her husband's frigidity.

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THE PITUITARY GLAND.

Apart from alimentary obesity therefore, we see that obesity appears to have, or at least is intimately associated with, some endocrinological factors, and, furthermore, the study of Frohlich's Disease and more particularly of Dercum's Disease would implicate the Pituitary Gland as the prime factor. It is expedient, therefore, that in summarising cases, we inquire regarding those features known to be found intimately connected with pituitary abnormality. Our investigation, however, must be still further restricted as the pathology of the Pituitary Gland is too extensive and too comprehensive for our present inquiry. This gland, which is situated in the pituitary fossa of the sphenoid bone, has an anterior and a posterior lobe, but these, although they seem to have an individual activity also appear to possess a hetero-activity, possibly not more marked than that interactivity shown by each and every member of the endocrine hierarchy. The lobes, histologically, are entirely different and their physiological action and function seem quite distinct. In brief, it is held that the anterior lobe promotes skeletal growth and stimulates sexual development. As regards the former we find our explanation of cases of Gigantism and Dwarfism, and again Acromegaly, and as regards the latter we thus explain certain cases of sexual infantilism.

For our explanation of Girdle Obesity, then, we must look to the posterior lobe for our evidence, and enumerate the various functions which have been attributed to it.

The posterior lobe might be said to have three main functions, as follows:

1. The stimulation of non-striated muscle fibre.

Thus/

Thus we find that derivatives or extracts made from it are used medicinally in cases of Shock, Collapse etc. etc. with great and as a rule immediate benefit, thus justifying this claim.

2. The participation in carbohydrate metabolism. It would appear that herein lies one of the most important and one would suspect causal elements controlling the presence or absence of our subject of study, namely Girdle Obesity.

3. The assistance of sexual development, and especially in the female.

Speaking of the action of the Posterior Lobe of the Pituitary, Langdon Brown suggests that it regulates the threshold of the Kidney for the excretion of waste products, and that it also regulates the threshold of the blood-sugar concentration. In its deficiency of action, therefore, he finds some explanation for the phenomenon of Diabetis Insipidus, while he reasons that the presence of an intermittent glycosuria, which would in itself suggest some temporary default or in this case some overcoming antagonism to insulin is the principal symptom of its overaction. Later on, this same author states that although this lobe controls diuresis and has an effect on the fat transport, when in defect one does not necessarily get polyuria and obesity together. In his suggestive reasoning as to the method of control exerted by this lobe on diuresis, it is feasible that some equally intriguing influence may be held by the Hypothalamus of the brain over the gland in the production of hypopituitaric obesity. That suggestion is borne out by the fact that the secretion of this lobe does not act through the agency of the bowel peristalsis, which would cause an associated diarrhoea, nor yet through the vaso-motor system as it

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has been proved to act on the denervated kidney. If, however, the hypothalamus is responsible, and in lesions of the hypothalamus some close association with this abnormality has been suggested, it must act through the posterior lobe which secretes an active chemical secretion. It is feasible, then, that it may operate by depriving the pituitary of its normal nervous stimuli.

For the present then, we must accept this fact of end-result and relegate its mode of production to the domain of scientific research.

Not only must we for the present discount the various theories put forward to explain the causation of much of the pathological lesions and conditions found present in clinical experience, but many avenues of confirmatory evidence are closed to the general practitioner in his sphere of study. We refer particularly to the information which is supplied by such studies as radiography, wherein even the effect of pressure symptoms may be gauged, but also the value of such evidence obtained from a frequent and close study of the Blood-Sugar Curve, and again the Basal Metabolic Rate of the patient under review. These clinical studies are outwith the scope of the general practitioner whose patients are virtually outwith his personal supervision.

For similar reasons too, has it been decided to prescribe, in our investigation, extracts from the whole Pituitary Gland discounting, for the present, the evidence which has already been put forward regarding the different modes of absorption of extracts of the differing lobes, and the different influence which has been attributed to each lobe.

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CLINICAL APPLICATION.

For our study, it would appear that an ideal clinical type for our present purpose would be a pure and simple case of Endogenous Obesity, and one wherein only that part of the Pituitary Gland is affected, whereby the effect of its medicinal administration could be accurately and scientifically measured. In so far, however, as we are dealing with a human being, so far are we defeated altogether in this research. The Pituitary in itself shows a hetero-activity in man's being, mental and physical, and is indeed only part of his sum-total make-up. Thus it is perhaps feasible, if, in our study, we set out with our mode of procedure in treating, and from our results, deduce what we can therefrom.

Primarily, we must affirm that in the treatment of a definite Obesity, be it alimentary, endogenous or compound, we are seeking some means of establishing a relative preponderance in the Metabolism of our patient of Katabolism over Anabolism. It is reasonable, then, that some control must be placed on the food supply or diet of the patient, and to lessen as far as possible, the resulting irksomeness of dietary restriction, it is perhaps wise to allow what latitude is maximal and possible, giving at the same time a semblance of interfering as little as possible with the personal choice.

Diet.

For reasons given above, it has been suggested, in the dietary treatment, primarily, and of great importance, is the cultivation of the habit of separating as much as possible all fluids from solids, taking fluids before solids or not less than two hours after solids. In this way, an endeavour is made to elicit what advantage is obtainable from the mechanical point of view, while again restriction/

restriction is put on the intake of such food-articles as Soups, Milk Puddings and indeed Milk itself.

Having regard to the two Proximate Principles which appear to have most concern in the surplus storage in man, namely Carbohydrates and Fats, some limitation must be put on the indiscriminate use of these, and the following guides to diet are advised. All sugar, sweets and jams must be rigidly curtailed if not indeed wholly avoided; potatoes are forbidden, while white bread must be very sparingly supplied. As regards Fats, patient must be satisfied with a small amount of butter, while gravies and food which is fried is not allowed. In any restriction of diet, it is perhaps wise, where possible to suggest food-articles whose use is unforbidden and may be unlimited. For this reason a plentiful supply of green vegetables and also of uncooked fruits may be advised as their use often satisfies the food craving tending also to please the palate as well as the personal interest of the patient, and on account of their indigestible waste matter may act as an excellent corrective to constipation which is a very frequent concomitant to Obesity. For this reason, also, a wholemeal bread is advised as a substitute to white bread.

As will be seen, this allows a fairly free diet, sufficiently free at least to satisfy the popular mind, although it is noteworthy that most obese persons of whatever type of obesity are ready to admit their predilection towards those definite articles of food which must be forbidden. Again, equally to emphasise the small limitation suggested by diet, it seems a wise plan to elaborate a possible daily menu and herein one can point out that most meats, and fish and also eggs can be taken with impunity at any or all meals by those who are

under/

under treatment.

Thyroid and Pituitary Medication.

As regards medicinal treatment, we must rely on the products of endocrinology. Along with Pituitary Gland products, Thyroid Gland products are prescribed. Thyroid Gland would appear to be the predominant katabolic agent in endocrinology, and it is suggested that contrary to its being antagonistic in this treatment of obesity, it appears to be a direct adjuvant to Pituitary medication. We have seen above, that the subthyroidic gives rise to that pseudo-obesity known as Myxoedema, but also it would appear that in the type of obesity under discussion there are signs and symptoms suggestive of the existence of a subthyroidic threshold, accompanying, preceding or superadded to what would appear to be a sub-post-pituitaric state.

From the clinical point of view, it is significant that many of the patients, under review, had previously subjected themselves to dieting, aided also by a course of Thyroid Extract, and had become discouraged because of their unimproved condition. With the addition of Pituitary medication they at once responded, and unreservedly attributed their progress to this enhancement in their treatment.

As illustrating this fact one might instance several cases:

Mrs. H: who was extremely anxious to regain her normal figure, had conscientiously, and for many months, adopted this former treatment, but in despair, had agreed to undergo the strictest dietary regime and medicinal treatment propounded, if only she could derive the desired benefit. By the addition of Pituitary Gland medication only was improvement obtained, and after prolonged treatment for many months was she able to lessen her thyroid treatment and also be more liberal in her food intake, while omission of pituitary administration, even after an interval of eighteen months showed adversely in her condition.

Miss/

Miss S: had been dieted and given Thyroid by her two previous medical attendants, but in each case had become ill - alarmingly so to herself - and had been obliged to forego treatment. Indeed, she had been instructed to tell any future medical man she might be under, that she bore thyroid very badly. After 25 days on treatment as suggested 19/2/28 - 16/3/28, she reports that she knows no ill-effects from the thyroid, incorporated in treatment, and that "she is very well pleased with the treatment and would like to continue".

Miss N: was seen for constant headache in 1926. At that time she was seen to be peculiarly obese, but her guardians were inclined to pride themselves in her supposed robustness as evidenced by her build. However, on account of her headaches she had been under different treatment for same, both at her home in Canada and at her present home here. Relief from headaches however by the various treatments prescribed had only proved very temporary and only at the first. Patient was advised diet and given thyroid, and her headaches gradually ceased. This patient was seen some three years later, when she was diagnosed as a case of Hypopituitarism, and advised suggested treatment, when improvement began to be evinced. Unfortunately owing no doubt to this false belief in her robustness, treatment was suspended within a short time. Here it is of interest to note that no such "thinning" process was seen as result of the Thyroid treatment required to keep the headaches at bay.

Mrs. M: when first seen weighed 17st. 3lbs. Her weight, she confessed, had kept her away from consulting anyone. On her own responsibility, and on the advice of a friend, she had been taking Thyroid Gland, but had failed to note any improvement. Her response to the additional Pituitary at once established the diagnosis.

Conversely, it is of interest to note that in one instance met with Pituitary feeding proved less satisfactory than had been anticipated, and one could only account for this by the misadventure of the omission of the accompanying Thyroid treatment. Its final inclusion seemed ultimately to expedite improvement sought.

Mrs. F: whose diagnosis seemed apparent, was given instructions and prescriptions as suggested. As an insured person, she was at that time entitled only to be supplied thereby with Thyroid. Owing to a misunderstanding regarding the two prescriptions given, the National Health Insurance prescription was not sought with the result that only medication taken was Pituitary. Progress proved quite unsatisfactory and it was only after the lapse of some two months, that the omission was noted and accordingly rectified with beneficial results.

In/

In the case of Miss S. previously noted above, it was interesting to note that the Thyroid Medication was not rigidly and continuously enforced in her later treatment on account of her very profuse menstruation. The cause of this latter phenomenon was thought to be due to the presence of a Uterine Fibroid, but Thyroid was only withheld during these occasions and only with a view to a possible lessening of the haemorrhage. This withdrawal of Thyroid did not take place till patient had reported "I felt in excellent health except for a slight cold;" and also from her various measurements it was evident that great improvement, one might say a corresponding improvement, had been noted in her frame.

It would appear feasible and possibly justifiable, considering the reports of two of the above cases, viz. Mrs. H. and Miss S., that once improvement has been thoroughly established, thyroid medication does not need to be so stringently enforced, to maintain well-being.

While we are considering the association in this respect of Thyroid with Pituitary in treatment, the submission by Crew and Wiesner of a paper entitled "On the Existence of a Fourth Hormone, Thyreotropic in Nature of the Anterior Pituitary" (B.M.J. 26/4/30 p.777) is of interest. Therein, one reads,

> "Certain observations suggest that this theta factor - a name they give to this metamorphic factor - is thyreotropic in its action, being the activator for the release of thyroid development and activity. It has been shown by Uhlenhuth and Schwarzbach that the thyroid of an animal metamorphosed by anterior pituitary undergoes that series of developmental changes which are characteristic of normal changes. Moreover, it has been noted by Allen and others that the thyroid of hypophysectomised animals becomes atrophied."

If this contention be true, it may also be one factor which might serve to explain the unusual occurrence

of pregnancy which interrupted the treatment of two patients who were undoubtedly suffering from a well-marked degree of Hypopituitaric Obesity. Both patients showed signs and symptoms pointing to this so-called Girdle Obesity; one had been previously seen by her own medical man prior to her residence here, and from his prescription it was evident that our diagnoses were in agreement; both, I had good reason to believe, almost dreaded the possibility of a second pregnancy, partly, one might say, on economic grounds and partly on former experience. Both responded well to their treatment initially, and on its ultimate cessation, pregnancy was allowed to proceed untrammelled by dietary or medicinal treatment. There is nothing of relevant note in their immediate after-history, save that in the more recent residenter, headaches and dizziness proved very intractable throughout the latter half of her pregnancy. Ophthalmic examination to which she was advised gave the report as follows:

> "the variable and ill-defined variations of vision are probably due to the transient changes in size of the Pituitary, which often occur in pregnancy."

The close connection of Thyroid with reproduction is seen in its physiological enlargement in the female at puberty, marriage and pregnancy, and by its partial involution at the climacteric.

It seems to be generally accepted in practice nowadays, that small doses of thyroid are more advantageous than larger doses and that in cases of peculiar intolerance less harmful results will accordingly occur. Again, one advantage of prescribing Fresh Gland instead of the dried extract, which is five times more potent, lies in this fact of greater variability in dosage. To afford a uniform treatment in this present case it has been thought wise/

wise to prescribe ½gr. doses to be taken thrice daily. As a routine treatment, therefore, Thyroid has been supplied in this way. No signs of peculiar intolerance have been noted in any of the patients herein discussed.

Accepting then, the fact that this particular type of endocrine obesity is found to be associated in some way with the Pituitary Gland, either directly or indirectly, the effect of Pituitary feeding has been studied and an endeavour has been made to correlate the results obtained. Dieting and Thyroid medication have been used to supplement this. Discussing Pituitary administration, Williams says: (Obesity, p.151) "Pituitary therapy is admittedly surrounded with difficulties, not the least of which is the initial difficulty of correct diagnosis. Another point which awaits elucidation is that of dosage. Some people will respond to a relatively small dose whilst others will remain unaffected by a very large one." Here again, and for the purpose of this study, a uniform treatment was determined on; 2grs. of the dried extract of whole gland Pituitary being given orally daily.

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GIRDLE OBESITY IN GENERAL PRACTICE.

When one considers this question of Girdle Obesity and its treatment in general practice, one finds one's difficulties greatly increased, and with it all these superadded difficulties seem much more subtle, since they are more or less subservient to the personal equation, or rather whim, of the patient. It has been noted previously, how one has endeavoured to control the administration of glandular extracts, by supplies to cover known periods of time. Also one has endeavoured, by duplicate charts to enlist the enthusiasm of the patient. Two factors, however, seem to militate against conscientious cooperation in their treatment, with some patients. Dietary treatment has proved a burden to one, on account of her more epicurean habits, while to another, once improvement has seemed possible, the mental satisfaction resulting therefrom has, curiously enough, reacted in persuading her to postpone treatment to a later date, and to continue, for the present, unhampered by dietetics and unburdened by the considerable expenditure which medicinal treatment unfortunately entails. From the point of view of these patients, virtually delinquents, interesting information might be culled, although, on account of their smallness in number, it might be false to draw definite conclusions. While this survey concerns some twelve patients who have been more or less under close observation, one has been able to gain information suggestive of confirmatory evidence from about an equal number of patients who for many varied reasons have interrupted their treatment. Again, a goodly proportion of the former group, being non-resident in this district, have complied with the request to send reports of their condition on intimating further consultations and thereby

have/

have afforded interesting and valuable information.

While one has previously noted that only one patient came to consult about her bodily shape, the majority of these patients were concerned mainly about their stoutness. The remaining cases had different complaints, and with these it was more or less apparent that they accepted their obesity more as a personal idiosyncrasy than as a pathological defect. Such patients usually stated that one of the following symptoms was more or less predominant, their order of prominence, and indeed, severity, being as follows: sickness and vomiting; subcutaneous haemorrhage even to the extent of ulceration; lethargy; headaches, general body pains, supposed to be rheumatic.

It is interesting that only one patient was seen whose condition was discovered when her purpose for consultation was with a view to gynaecological examination.

Considering primarily, this factor of obesity as previously stated, it is seldom that a pure case of endogenous obesity can be obtained, if indeed, one could, with certainty, certify it to be such, when one considers the insidiousness of alimentary stoutness, and the difficulties surrounding the practice and study of endocrinology. One might suspect, and indeed such is the case, that those whose complaints were least were accordingly the less liable to be complicated by intercurrent abnormalities. Taking obesity itself, one might feel justified in noting in their order of purity those whose only concern is their shape, or again, those whose condition seemed accidentally discovered, for example on account of gynaecological symptoms, followed by patients with so-called general rheumatic body pains, those with headaches, those with lethargy and later those severe conditions above mentioned.

Again/

Again, it was only the very stout patients who complained of their body weight. This, in itself, seems to be a very important point, and one felt assured of the added complication of alimentary obesity. Considering that patient whose main concern was her shape, referring to the Average Weight Tables, as given by Williams: (Obesity p.160) while her age was 37years, height 5ft. her weight was barely 1 lb. in advance of that given, viz. 8st.12 lbs. In applying this table referred to above, one feels assured from general observation and clinical experience, that any degree of extraneous stoutness has been excluded, and one feels more impressed by the facts shown by this patient. Even those who had minor and, to them, irrelevant complaints, exceeded to a varying degree this rigid standard. When we consider those at the other end of the scale great discrepancies arise, and it would seem that the presence of marked alimentary obesity might account for this. Mention has already been made of Mrs. M. whose weight exceeded 17st. Taking the above tables into account, the net excess would be bordering 8st. Again, while improvement in this patient was obtained, as already mentioned, by the addition of Pituitary extract to thyroid, this was undoubtedly secured in spite of any attempt on patient's part to rigid dietary regime. This fact, coupled with the anticipated results which followed, we feel gives some justification for suspecting a Pituitary glandular deficiency.

While both these patients above mentioned consulted on account of their obesity, it is informative to consider what facts may be obtained by a study of those others and particularly those whose complaints seemed to have no reference to their stoutness. In the gynaecological case considered, this was an added suggestion in treatment;

as/

as also was it in those who complained of "abdominal wall" pain; but in those other severer cases it seemed an obvious treatment, and their response thereto was most gratifying. Two patients, who complained mainly of sickness and vomiting with general lethargy, evidently had suffered so severely from this that they were willing to adopt any treatment that could be reasonably recommended, and both these patients, who were non-residenters, actually agreed to travel by train in order to continue treatment, in toto.

Despite their frequent and almost daily vomiting after food both these patients were about 2½st. above their average weight according to their height and age. This symptom indeed had become so marked with them that other disabilities had perforce been superseded and ultimately had become entirely secondary in importance. On questioning them regarding their other symptoms, they readily admitted their constant headaches, which however, were often intermittent in severity, their lethargy, which often interfered greatly with their daily tasks, and their continuous pain or tenderness localised, as a rule, over the limb girdles or abdominal wall, on the increase of pressure, however slight.

From much of the symptomatology noted previously then, a more intricate study of this phenomenon of obesity is desirable. In woman, we can understand the greater difficulty in diagnosing girdle obesity, and yet we must admit that the mere shape of the body frame may elicit this. Weight tables are unreliable in so far that weight seems to be no measure of its presence or degree. Measurement which has been practised extensively herein, serves only as a very rough gauge to diagnosis. Symptomatology, however, seems to be of much greater importance, and its concurrent study is advantageous.

Symptomatology.

The distribution of this obese condition may seem to be circumscribed in early and uncomplicated cases, by the apparent disproportion existing in the arms and thighs as opposed to the patient's forearms and legs. Herein a deviation from the normal body frame is evident, as the obesity would appear to be limited by the elbows and the knees. Thus wrists and ankles, hands and feet may be found normal in size as well as in shape. Again it is often noteworthy that remarks, taken as a rule in compliment have already been made to patients by their tailors or dressmakers, or indeed by their corsetieres, regarding their increased abdominal or bust measurements. It is quite significant, too, that there have been occasions where patients have regretted their inability to wear out some of their more expensive outdoor or evening wear on account of their increase in measurement. Thus we must accept that this disproportion becomes a mechanical burden to our patient. Considering it for the present only to be such, similar explanations as those advanced in the case of Dercum's Disease, a condition allied to our subject under discussion, might be given to account for certain symptoms. This excess of fat is considered not as an infiltration into the superficial body-tissues, but more as a superjacent covering to these. In this way, one might explain the athleticism which some undoubted cases find it possible to indulge in, and which one would fear were less probable were their tissues burdened by a fat-infiltration. Here it is, nevertheless, more likely to be a case of degree which is really the crippling factor rather than the actual site, for one finds in all these patients a marked liability to bruising and a marked tenderness to pressure. While one finds/

finds that individual muscles appear to remain normal and as it were uncrippled, when the abdominal wall is considered as a whole, passively, that is, it may be reasonable to ascribe part of the various symptoms to this as an undoubted exciting cause. Any marked degree of superjacent fat in the abdominal wall must of necessity increase its tension and limit its elasticity. Further increase of this tension therefore causes tenderness sometimes amounting to pain and in this way one can explain this symptom which seems common though varying in degree, in all such cases. In a marked degree of tension existing in the abdominal wall, or in the shoulder or hip-girdle, one could understand the constant discomfort which patients have sought to describe as "an uneasy feeling of tiredness". In a still more severe case this continual discomfort becomes aggravated and is thus interpreted as pain.

Whether or not this be explanatory of the whole truth, observation would convince one of the force that would appear to lie in this reasoning. It seems to be no uncommon practice, for instance, with these sufferers to take advantage where possible of relieving themselves of the pressure of their clothes, that is of their tightness, when occasion allows and one need only suggest this fact to them inquiringly to find their ready response. It is interesting, too, to note with what frequency one is informed that corsets with any degree of firmness can not be tolerated. Examination by palpation of the involved areas would readily demonstrate what little extra pressure is required to cause great discomfort or pain to the patient. Similarly, with the limb-girdles; the task of dressing the hair, or again exercise involving intensive muscular effort on the part of the hip and thigh muscles in a comparatively short time seems to have a crippling effect/

effect on the subject. This superjacent fat increasing as it does tension of the subcutaneous tissue may therefore serve to explain other symptoms often found in these patients. As they seem to be abnormally alive to causation of pain on pressure for similar reasons one could reckon that they are liable, despite any possible variation in their vaso-motor mechanism, to be prone to subcutaneous bruising, or in a less degree reddening or blushing of area subjected to palpation, while in a more marked degree traumatic lesions may be caused by what might be thought insufficient cause. This apparent vaso-motor sensibility may ultimately come to have important significance in the after-treatment of a patient, in so far as slight ecchymosis may prove the starting point of pathological fibrous tissue, nodule or if more extensive, a localised fibrous tissue, and it may be necessary to supply remedial massage.

While we are endeavouring to consider the mechanical effects only which may be caused by this extra layer of fatty tissue, omitting for the present those more intricate mechanisms whereby evidence may be more convincingly led, such being the subnormal temperature, the frequently associated enteroptosis, the general mental depression often found in severe cases etc. etc., it is not unlikely that this phenomenon of fatty invasion may play its part. It is at least of interest to note that both patients who had been so subject to sickness and vomiting had found marked relief from such symptoms after four weeks treatment during which time they reported a concurrent loss in weight of 6 and 7 lbs. respectively. In this connection it may be quoted that recently a patient suffering from marked fatty invasion in the abdominal wall subsequent, it is thought, to extensive gynaecological operation by abdominal route, confessed that it was her accustomed

practice/

practice at home to remain erect for some little time after food, as she found almost invariably that the sitting posture was liable to cause vomiting. Sickness was usually absent, but if present was considered by her as a means to an end. This patient was advised to recline after food, and her husband was advised to massage abdominal wall for a short period every night in order to dissipate the fatty masses therein. Some four weeks thereafter both the patient and her husband reported most beneficial results. It is not improbable, therefore, that these vomiting attacks may have some mechanical basis, as the ingestion of food, followed by the process of digestion, may cause an increased tension in a postero-anterior direction, of the fat-laden abdominal wall already limited by clothing. In this connection one must not lose sight of the sometimes miraculous beneficial effect in checking vomiting which has been obtained by thyroid medication. However, it may be just to attribute in the majority of these like improvements a fair proportion of credit to each remedial agent.

As a practical point in the treatment of these patients, it has been thought a wise policy to instruct patients in what seems a more rational and indeed more comfortable method of adjusting their corsets. It seems reasonable to suggest that these should be applied to the upstanding figure, fixation of the various bucklings being accomplished with the patient in this position. Thereafter to the dorsally reclining figure, the required tension could be applied and adjusted to the lacing. The dorsal position would thus allow the internal abdominal organs to rest against the posterior abdominal wall, and in this way would become stationary while the corset was being adjusted, thus preventing the abnormal downward

stress/

stress which seems liable to occur when adjustment is manipulated while standing. Clinical experience would convince one of the tendency to, and indeed the frequent association of enteroptosis in such cases of obesity, and this mechanical device has always been thought applicable and advised as expedient throughout such reducing treatment. It is gratifying to know that this simple practical hint has been found a decided advantage to the comfort of most patients.

Up to the present, our diagnosis seems to have been based on merely physical grounds. We have discussed the difficulty experienced in diagnosing, on account of allied conditions, we sought to correlate in some measure the symptomatology with a view to strengthening our diagnosis, and if we apply to a still wider circle, namely possible age of incidence, suspected causation of abnormality, associated traits incriminating endocrine system including familial traits, and lastly results obtained under treatment we find our position somewhat strengthened.

Previously, reference has been made to the probable heavier incidence of Girdle Obesity in the female sex. Undoubtedly, the main reason of this lies in what is found a most common cause, or at least an associated condition, whose occurrence takes place during the age-period preceding the climacteric. This fact is at once suggestive of some associated endocrine abnormality, and furthermore, some peculiar relationship with the gonadal system.

<u>Age Incidence</u>.

The ages of the cases referred to in this study, if we omit reference to the only male under review, range from 13 years to 45 years of age, that is from the age of puberty till the climacteric onset. One might affirm the likelihood that while the majority of patients are of the/

the female sex, the onset of Girdle Obesity ensues prior to the decline of gonadal activity. We seemed forced, then, to accept this premises, that girdle obesity is an abnormality of the first half of life, and that there is at least an apparent predominance of the female over the male sex. Only the difficulties of diagnosing the inception of the condition and also the certifying as pure and uncomplicated such an existing condition, would deter one from definitely affirming this as true.

Causation.

Still further evidence might be led from our search for an apparent causation. In the cases under review, it has been possible to formulate a list of causes wherein one might feasibly enquire for the origin of this obesity. Again, to lend this classification still more force, written questionnaire supplied to many of the patients bear evidence of their own unschooled beliefs in the cause or at least date of origin of their malady. This evidence would place the various causes in this order,

1. Surgical operation and by this one must understand pelvic or abdominal. The greater number of these implied some gynaecological operation, in some cases, such as a simple curettage, in others an ovarectomy or even something more serious. Still, one must also note that simple appendectomy has been labelled as an inciting cause.

2. Puerperal misadventure: implying thereby a miscarriage, abortion, or even a very difficult non-fatal labour.

3. Severe and unusually prolonged nervous strain or some sudden nervous shock, such that delayed complete normal recovery for a time.

4. Serious and prostrating illness; some three cases remarking particularly on their attack of Influenza during the severe 1918 epidemic.

5. Idiopathic; as therein it has been impossible for the patient to suggest any likely cause, and equally so has a study of their medical history been futile in this respect.

Let us accept these causes suggested and discounting the limited number of cases under review let us endeavour to draw what conclusions are feasible in our study. Primarily then we must omit the last group as unknown, though it would be interesting to examine the family history for the immediately preceding generations as it seems not unlikely that heredity may play its part herein. No definite evidence, at least of a satisfactory nature, could be obtained here however but there was not sufficient evidence to rule out this possibility.

Endocrine Unbalance.

Of the other cases it is obvious that, broadly speaking, all cases of a similar position in point of time, age, experience and misfortune did not suffer similarly in this way to those about whom we speak. Again, it seems reasonable to argue that in each cause one would justifiably assume from what we know of endocrinological study that the patient must have undergone considerable strain, which strain one would understand to fall mainly on their internal secretory system. Gynaecological upset must necessarily derange to a certain degree and time the gonadal system, and by the reputed if not wholly accepted theory of hetero-activity in the endocrine-hierarchy primarily and in the total human being secondarily, this derangement would bear its influence in ever widening circles thus incorporating finally, the whole being. Similarly we believe that those causes in so far that they have served to disturb more or less violently, by depressing or by stimulating any member of the endocrine system have taken their toll

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on the individual on whose resource recovery or submission will depend. Possibly patients have been nearer the truth than they anticipated when they have affirmed that "since then I have never been the same". We know also how sensitive to the call of sudden strain the Thyroid Gland has proved and this gland has probably been the initial cause implicated in the two classes noted, 3 and 4. One might suggest therefore, that in the individual's endocrine balance, be it some such thing as their want of reserve power therein, a cause might feasibly be predicted.

While it is doubtless on account of more careful and more enlightened diagnosis that this phenomenon of girdle obesity has become less bizarre, for such seems to have been the effect of the renown given to the early or more classical cases, one cannot overlook the fact that these modern days have borne their full quota of strain and stress and again, the marked advance made in surgery, including gynaecological surgery, may also have demanded its toll. Again, one cannot exculpate the possible effects caused by the advance in the march of civilisation. It is equally noteworthy too, that the individual's amour-propre should in some cases impel her to a medical consultation clandestinely and confessedly so.

Further study of the clinical evidence which has been advanced in support of the theory of endocrine unbalance will be of value here in helping in this way to incriminate the endocrine glands and in particular, the Pituitary Gland or its associated function. Considering then primarily the associated symptoms, and secondarily signs commonly found present, added support may be obtained for our contention.

Perhaps one might be justified in noting these, in their suggested order of precedence, as follows; disturbed menstruation/

menstruation; psychic changes, including also eye and ear symptoms.

Regarding menstruation, while undoubted cases of girdle obesity seem to have suffered from menorrhagia, the condition of amenorrhoea is considered a more closely associated condition. Of the cases under review, only one patient complained of menorrhagia, and it was thought that the cause of this lay in the presence of a fibroid tumour of the uterus. A much more common complaint was irregular and diminished menses associated also with persistent leucorrhoea. There were cases, however, and particularly those who showed athletic tendencies, who were in this respect normal. It is noteworthy that under treatment given, there were several patients who spontaneously accounted for their improvement in this respect by their treatment.

Regarding psychic changes one must admit one's difficulty to appreciate their inception, and indeed, for this reason only, we feel justified clinically in formulating any order of precedence regarding associated conditions. To give a broad qualification to these particular changes noted, one might designate them as irritability and depression. In one instance under observation one felt suspicious of a peculiar mental deceitfulness present. Eye symptoms and ear symptoms and also the headaches previously referred to, may have some similar physical basis.

Implication of Katabolic Group.

On summarising these three main symptoms, girdle obesity, disordered menstruation, and certain depressive psychic changes it is obvious that it is impossible to regard them in any way as a syndrome, but one must also admit that it is quite feasible to correlate them closely

with/

with some degree of endocrine unbalance and more particularly would one consider such to refer to the relative loss on the part of the Katabolic group. Continuing this fascinating study of elimination, however fanciful it may appear, our knowledge of the pseudo-obesity of thyroid deficiency would at once eliminate this gland as the principal defaulter, while in a somewhat though less marked degree would our suspicions of the gonadal system be razed. Mention has already been made of the phenomenon of Trochanteric Obesity, but in early cases it would be far from easy to differentiate on such a fine distinction. At a more advanced state of obesity, it is true, diagnosis may become more facile, but concomitant symptoms might prove more conflicting in the differential diagnosis. There seems to be undoubted truth in the intimate cooperative association existing between these three endocrines and also a significantly closer liasion between the Gonads and the Pituitary and only the added evidence of treatment by Pituitary feeding may serve to incriminate more peculiarly the latter.

When we come then to consider the signs found on examination, it was thought wise, on account of its possible utility, to ask definite answers to many general and particular questions, and to this end the following list of questions was made out and this questionnaire was supplied to the patient for completion.

Questionnaire.

As will be seen therein, particulars are sought concerning their present physical state and previous health history, and also any Familial trait of stoutness known to them. Suggested date of onset and cause of obesity is sought. Detailed information is required regarding menstrual history, and a list of body measure-

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ments is given for completion. Questions are asked regarding the presence of headaches, eye symptoms and ear symptoms. Enquiry is made concerning the average daily output of urine. Finally the condition of the hair and skin is enquired into, and also the size of gloves and shoes. In this way, an attempt has been made at an early date to gain what confirmatory evidence such additional signs and symptoms may afford. By chemical examination the presence of glycosuria is eliminated, while the average daily output gives definite information regarding the presence or absence of Diabetis Insipidus. It is of interest that despite the fact that this phenomenon of Diabetis Insipidus is evidently so intimately related with some abnormality, direct or indirect, of the Pituitary Gland, no patient under treatment was found to be a sufferer therefrom. As has been pointed out regarding the condition known as Myxoedema the hair and the skin of patients both tend to assume peculiarities of note while reports obtained from patients referred to herein supply interesting comparative study, making additional evidence for differential diagnosis. There was general agreement in the information given, that the hair was good in amount, of fine texture, and not falling out, while the skin tended to be smooth, soft and moist. The information sought regarding size of gloves and shoes is with a view to ascertaining information regarding a possible preceding condition of hyperpituitarism. In no case was there sufficient evidence therein to suggest an earlier tendency to acromegaly.

One other point of interest, ascertained at an early consultation was the invariable subnormal temperature obtained from all patients and also constant evidence of low blood pressure. These findings, by their constancy would/

would suggest that they are accompanying signs of "Girdle Obesity.

Results.of Treatment.

When we come to speak of treatment, it might be expedient first of all to consider the patient's point of view. Again in this connection much depends on the extent - if one could so dare to judge from apparent findings, the degree of this malady - to which the patient seems to be suffering. As a rule, very early (in the present study there has been an unanimity of opinion within 21 days) medication has evinced a most beneficial effect in the general feeling of well-being in the patient. Their enthusiasm for continued treatment has been most marked and not infrequently they have remarked on the observation made by their relatives and friends on their more spirited bearing and demeanour. In this respect the rapid transformation which shows itself very early in the hypothyroidic on the administration of thyroid medication would conjure up a fitting parallel. (One must note here that this was evinced even in those patients who had already had Thyroid medication). While this seems undoubtedly to be the rule, in definite cases of Girdle Obesity, when we consider those patients whose associated symptoms one would correlate to their general physical signs one is equally gratified by their rapid cessation which appears to follows medication. Such symptoms as sickness, vomiting, cramp-like spasms of the abdominal muscles, and headaches, seem very early to be held in check and in some cases, experience has been such that in default of continued medication in the early stages of treatment, their return is assured. Indeed one patient who had sore experience of this fact wrote unsolicitatingly to say that "now I feel more benefit

from/

from even a few of these tablets than from anything else."

If we turn now to the less abstract signs of betterment which appear to follow pituitary medication results seem equally to confirm our diagnosis of previous pituitary insufficiency. These signs undoubtedly may seem less graphic in their appearance but, nevertheless, their presence would point to some corrective agent working efficiently and successfully within the body-system. Some depletive reorganisation would appear to be at work within the body framework, whose end-result would point to a more proportionate normal individual. Again one must admit that the establishment of a more normal menstrual cycle whether it be a re-establishment of previous condition or otherwise, must suggest a relative amelioration in the individual.

When we consider the results of treatment, then, it would appear that the benefit which in most cases follows Pituitary medication corresponds more or less accurately with those concomitant symptoms which one with reason would associate with hypopituitarism and thereby strength would accrue to our initial contention.

CONCLUSION.

In conclusion, it is necessary to summarise and to form, if possible a clear-cut picture of our contention, tabulating what practical hints may seem of import.

Girdle Obesity is a medical entity, often found associated with Depressed Psychic Changes, and in women a deranged menstrual cycle usually tending to amenorrhoea.

Causation and age-incidence point to its etiology being due to a deranged endocrine system.

Amelioration being obtained by Pituitary Feeding supplemented, and beneficially so, by Thyroid Feeding points to implication of the Pituitary Gland by virtue of its existing deficiency.

In practical application of these tenets the following guides seem applicable.

1. Careful selection of a particular Brand of Pituitary Gland for use. Comment has later to be made regarding the fact that different brands of Tablets seem to have differing effects. One other consideration, namely the costliness of treatment, must be borne in mind. It has been reckoned that in the cases under review, Pituitary medication alone costs on an average about threepence daily.

2. The addition of Thyroid medication proved an enhancement to Pituitary treatment, particularly in the early stages.

3. Prolonged treatment with Pituitary would seem necessary and patient should be kept under observation for some time on cessation of treatment, to guard against relapse.

4. All exercise, such as sports, should be reckoned with, with a view to its possible influence on recovery of patients.

5. Dosage/

5. Dosage of Pituitary Gland remains arbitrary and is dependent on the response thereto of the patient. Undoubtedly in many cases reported herein, larger doses might seem to have been indicated, but standard dosage has been adopted with a view to its supervision with comparative reports and it is thought, its more ready final withdrawal if found feasible.

Case : 1 :

Mrs T. Aet: 34 yrs. Height: 5ft 3in. Weight: 9st 11lbs.

Complaint: Stoutness, especially Abdominal.
Leucorrhoea.

Onset: a). Age: About 1921.
b). Suggested Cause: After influenza in 1918 has never been the same.

Previous Illnesses: Influenza: Measles: Mumps: Miscarriage. (1928).

Menstruation: a). Age at onset: 12yrs.
b). Duration: Usually 4 days, but lessening now to 2 days.
c). Regularity: Yes, very regular.
d). Pain: None.
e). Clotting: None.

Size of Gloves: 6½. Shoes: 4.

Eye Symptoms: Right eye shows astigmatism and strain.
Ear Symptoms: None.
Headaches: None.
Hair: Good in amount: Fine in texture: Non-deciduous.
Skin: Dry and powdery: Soft: Smooth.

Measurements:

	7/5/29:	28/5/29:	12/8/29:	23/11/29:	Total Loss:
Bust:	35.	34.	33½.	32¾.	2¼in.
Hips:	38.	37½.	37.	36.	2 in.
Midthigh:	20½.	19½.	18½.	18½.	2 in.
Calf:	13¼.	13¼.	13.	13.	¼in.
WEIGHT:	9.11.	9.7.	9.2.	9.1½.	9½lbs.

This patient's present weight, (June.1930.) is 8st.11lbs.
In so far as she has undergone Curettage since the last measurement recorded above, subsequent records are possibly vitiated for comparative purposes.
It is of interest to note, that prior to coming to this district, patient had been treated, as she suggests with very little resulting benefit, by diet, by her own Doctor in town.
Her general condition she reports as very fit.

Special Commentary:

1. Influenza, (1918), suggested as possible cause.

Case 2.

Christina H: Aet. 32yrs. Height and weight not recorded.

Had been under treatment for some months, during early 1927, as a case of Neurasthenia, and Tinnitus Aurium caused by Ear Disease. Had been certified as incapable of work during two periods of 2½ months on account of Neurasthenia, and had thereafter been advised by her Health Insurance Doctor to have a complete rest for some six months.
She was seen in the late Autumn of 1927, and was considered to show signs of Girdle Obesity.
Condition was demonstrated to, and appreciated by, her mother, whose anxiety for her daughter at once became more practical.
Under suggested treatment, the obesity, lethargy and nervousness improved rapidly, and she was able to resume work within 2 months time, from commencement of treatment.
Treatment was, however, continued for some further 2 months, and thereafter was stopped.
It has since been ascertained that this patient has been continuously at work since that date, except two short periods during which she was invalided off for little more than one week, suffering, firstly from Septic Tonsillitis, and secondly from Chill.

In this case the mother was markedly stout.

Special Commentary:

1. Previous diagnosis of Neurasthenia, with recovery under suggested treatment.
2. No further relapse despite the withdrawal of Glandular medication.

Case 3.

Mrs B: Aet. 39yrs. Height: 4ft.9in. Weight: 11st.6lbs.

Familial history of stoutness: Mother only recently became stout: Large family but none stout.

Complaint: Obesity: Tendency to Amenorrhoea.

Onset: When 31 yrs of age; i.e. 2 yrs after marriage.
Suggested Cause: After athletic exercises, but never properly recovered since Influenza, (1918).

Previous Illnesses: Anaemia: Influenza: Cystitis: Pleurisy.

Present Condition: No definite systemic complaints: Is easily bruised: easily tired: sleeps readily. Wears glasses, as right eye is strained, has good vision, but sometimes experiences attacks of giddiness, for which she blames her eyesight. No ear symptoms: Subject to headaches:
Hair: Good in amount, fine in texture, but deciduous.
Skin: Moist, soft and smooth.
Urine: Averages 2 pints daily, no sugar, no albumin, Specific Gravity 1020.
Blood Pressure: 120.
Menstruation: Onset at 15yrs of age. At present is only of 2 days duration tending to lessen to 1 day. Occurs every 3½ weeks. Always has premenstrual pain. Much clotting last period.
Size of a) shoes: 3½. b) gloves: 6½.

Measurements:
Height: 4ft.9in. Length of inside leg: 27.
Weight: 11st.6lbs.

	17/1/30:	7/2/30:	28/2/30:	18/4/30:	7/5/30:
Bust:	40½	39½	39½	38½	37½
Submammary:	36	36	35	34	33½
Abdomen:	37	37	36	35	35
Hips:	39	39	38	37½	37½
Midthigh:	20	18	18	17½	17½
Calf:	14	14	13½	13¼	13¼
WEIGHT:	11.6	11.	11.	10.13.	10.12.

Total Loss.

Bust:	3in.
Submammary:	2½in.
Abdomen:	2in.
Hips:	1½in.
Midthigh:	2½in.
Calf:	¾in.
WEIGHT:	81b.

Patient was two weeks off treatment (14/3/30-28/3/30) on account of having caught cold.
General report is that she is certainly not nearly so fatigued as formerly.
Her friends have often remarked on her general improved bearing.
Menstruation has gradually increased and is now reckoned/

reckoned to last fully 3 days, and premenstrual pain is very much lessened. Patient attributes her general and particular improvement to treatment.

Special Commentary:

1. Implication of Influenza as suggestive cause.
2. Return of menstruation to more normal conditions.

Case 4.

Miss S:

This patient, staying beyond County Town where she is a school mistress, has shown a marked intelligent interest in her treatment, by reporting by letter periodically, giving thereby, interesting and illuminating personal experiences, from month to month. Periodic consultations have taken place but measurements have been given by patient.

Information chart returned completed as follows:

Age 36. Height: 5ft.8½in. Weight: 13st.12lbs.

Familial Stoutness: On father's side most of women inclined to stoutness. Mother fairly stout latterly but not of stout family.

Stoutness: Age at onset. 36yrs.
Suggested cause. After operation for Appendix.

Previous Illnesses: Convulsions with measles at infancy. Subject to earache, toothache, and growing pains in childhood. Colds often in later years. Tonsillectomy in 1913. Laryngitis 1920. Appendectomy followed by a thrombus in left leg. Patient was critically ill in hospital for many weeks. 12 weeks in all.

Complaint: Frequent headaches; frequent sickness, flatulence very constant, vomiting very frequent. Abdominal cramp very frequent. Easily fatigued, lethargic, always feels cold. Muscles all seem tender.

Menstruation: 12½yrs at onset; 6-7 days duration; regular every 28 days. Very severe pain in youth but none now. Clotting marked in year preceding operation. Has been told there is a fibroid tumour in uterus.

Eye Symptoms: Astigmatism right eye. Myopia. Wears glasses when motoring. No known ear symptoms.

Hair: Good amount. Eyebrows and axilla thick. Fine Texture and non-deciduous.

Skin: Moist, soft and smooth.

Gloves: 6½. Shoes: 6.

Urine: nil abnormal. No polyuria. Blood pressure low.

This patient has on two occasions been put on thyroid, but both medical attendants had stopped treatment within a very short time on account of appearance of ill-effects supposed to be caused by thyroid. Patient had become so nervous that she refused to travel to duty by train, so used her small car as means of transit, daily.

The following excerpts from her frequent letters will serve to relate course of progress as experienced by her.

19/2/28: Bad headaches: and tremulous feeling over body. Similar symptoms experienced before on being put on thyroid and had been forced to stop treatment.

16/3/28: Thyroid continued with no ill-effects. Difference in two legs not so marked. I continue to have only small bouts of energy in the midst of my usual lethargy, Colded for two weeks, Altogether I am very well pleased with my progress and should like to continue.

At consultation on 27/3/28, the following report of examination is made:

Vomiting attacks have completely ceased for some little time. There has also been a cessation of the cramp-like pains in muscles, especially of abdominal/

abdominal muscles. Flatulence has lessened considerably. Menstruation has lasted 6½ days, and is more tedious. According to instructions thyroid will be stopped during periods, meantime.

25/4/28: My general health is excellent, in fact I feel so much better that I have no hesitation in saying that I wish to go on with treatment.

2/5/28: Consultation:
Examination very satisfactory. General superficial musculature seems much more pliable and elastic. Discoloration in left leg seems lessened somewhat and there seems more response to stimulation of body tissues. Recovery appears more active and responsive. Pain in left foot, thought to be due to loss of foot arch.

31/5/28: Letter:
I feel in excellent health except for a slight cold.

7/7/28: Letter:
Omission of thyroid has made no difference to menstruation, save perhaps flow is bright scarlet in colour and much thinner than usual.

28/8/28: Letter:
Have had a splendid holiday and feel very well. Am able to do pretty well as other people do now, if I am careful, and I can enjoy life much more than before I undertook treatment.

Tablets were now stopped for over one month, but patient was advised to continue strictly on diet given.

20/9/28: Letter:
My 'joie de vivre' has gone down as my weight has evidently increased and these last few days have found me thoroughly fagged and cross. Menstruation has also been much worse than for some time.
(Measurements omitted, but posted on later).

27/9/28: Letter:
I felt so exhausted last week that I had to stay in bed for a day and a half.

1/10/28: Consultation:
After general examination, it was thought expedient to recommence treatment in toto, supplementing this with massage, which latter was to be concentrated mainly on neck, shoulders and ankles.

21/10/28: Letter:
Massage is being given twice weekly, but leaves me rather exhausted. Masseuse reports skin on left leg is not so tight and flesh is softer. She finds circulation very poor as my legs and feet become quite cold and white under massage.
I am now back approximately to what I was before the holidays. I feel fairly fit but without much enthusiasm.
(Massage advised to be given thrice weekly).

18/11/28: Letter:
I feel perfectly well and certainly much more energetic than I have done for some time. My last menstruation was extremely easy, indeed I never remember having so little before. My spirits have also risen considerably and altogether I feel much more satisfied with this report.

31/12/28:/

31/12/28: Letter:
Massage stopped during holidays. Menstruation ten days too soon and rather copious. Otherwise I am quite all right.

17/2/29: Letter:
I never felt better in my life than I have done for the past month. I have been able to enjoy my work as well as any little festivity that came along. People are now beginning to say 'how well you are looking'. Menstruation came every fortnight for four times so three weeks ago I stopped Thyroid.
Massage has been given to back, hips, legs, neck and arms. My appetite is becoming much keener. I seem always to be hungry.

Patient was now advised to take only one Pituitary Tablet (2grs dessicated gland) every second day.

9/8/29: Letter:
I am feeling in splendid health. I have not varied much in weight or girth for some months. Massage stopped last week, and was discharged as cured. I think it is rather a good sign that I am able to undertake housekeeping in addition to my own job.

25/8/29: Letter:
After a six weeks' holiday I find rather an alarming increase in weight. Menstruation also increased to nine days on last two occasions.
- By accident, during her vacation, patient evidently suffered a severe scald on right foot -
Scalding of right foot seems to have affected my nerves a bit as I feel somewhat 'weepy' at times, and altogether not so well as when you last saw me.
I have not been strictly dieting.

Treatment recommenced in toto.

10/11/29: Letter:
A friend said to me the other day 'You are a perfect mystery to all our mutual friends. We don't understand why you are so much brighter and more full of life than you were some years ago in spite of your advancing age'.
Menstruation fairly regular and about the usual week's duration.

10/12/29: I may confess to having been rather festive as I have been to several parties and whist-drives and I am now becoming quite used to people saying 'How well you are looking'.

Regarding measurements, there are at least two factors which are noteworthy:-

a). On account of the previous embolic condition of the left thigh, the measurements of the thighs and legs give interesting comparative reports:

b). On account of the fact that this patient had, on two occasions, been instructed to discontinue treatment these measurement reports form interesting comparisons one with another.

Measurements/

Measurements on intermediate dates are not given here, as their only value would be to show a tendency towards their succeeding measurement which is noted.

Measurements:-

	Begun Treatment: 17/2/28:	Under Treatment: 28/8/28:	Treatment Stopped: 27/9/28:
Hips:	42	38¾	38¾
Right:	22	19¾	19¾
Midthigh:			
Left:	23½	20¼	19¾
Right:	-	14¼	13¾
Calf:			
Left:	-	15	14½
Weight:	13st.12lb.	11st.13lb.	12st.6lb.

	Treatment Recommenced: 18/11/28:	Treatment Stopped: 29/6/29:	Treatment Recommenced: 25/8/29:
Hips:	38¾	39	40
Right:	20	19¼	20¼
Midthigh:			
Left:	20	19¾	20¾
Right:	14½	14¼	14½
Calf:			
Left:	14½	14¾	15¼
Weight:	12st.9lb.	11st.12lb.	13st.

In analysing the above table, it is necessary to note that remedial massage was being given for fully eight months, viz. 1/10/28 till 6/6/29. This would, of course, greatly influence these records. It would influence the disparity in measurement between the two limbs. It is possible that it would not be without influence on the weight. However, it would appear quite feasible to conclude from the above table,

a). Treatment had an undoubted beneficial influence in reducing patient's weight and obesity.

b). Treatment had an undoubted beneficial influence in reducing disproportions in figure.

It is of interest to note, also, that all measurements given in the month of May, of this year (1930) are fully ½ in. below that of table 6. while there is only 4 lbs. loss in weight.

Special Commentary:

1. Early checking of vomiting, abdominal cramp, and/

and lessening of flatulence.
2. Complete failure of Thyroid medication alone.
3. Marked change in mental bearing.
4. Relapse on both occasions, following withdrawal of Glandular treatment.
5. Concurrent beneficial effect of massage.

Case 5.

Jean W: Aet. 37yrs. Height: 5ft. Weight: 8st.12lbs.
Hips: 38in. Midthigh: 22in.

Previous history: Operations during 1921, concerning dilating, curetting and replacing a retroflexed uterus, treatment of fissured anus, tonsillectomy.
In 1925: shortening of round ligaments, etc., to restrict downward tendency of uterus.

This patient who stayed in lodgings in town, had endeavoured to reduce proportions by Turkish Baths. Being fond of swimming, she was, in all probability thus led to discover her disproportioned figure, and in this way, her Girdle Obesity was her sole complaint.
On being treated, as above suggested, she showed, by her measurements good advance towards improvement, with which she was exceedingly pleased.
On account of the great expense involved in treatment by medication, she got a personal friend, in the drug trade to supply her with medicine at cost price.
After some six weeks, however, she was seen once more and she admitted her obvious marked lack of improvement. On returning to her former brand of tablet, she appeared to recover her progress towards improvement. This interrupted recovery was the main reason for her occasioned visit.
I am unaware which brand of tablet was intermediate, but this reason for the check in anticipated progress was her own.

This patient was seen lately - this year - and is certainly more advanced in her retrograde condition: she sincerely regrets her inability to continue the necessary financial outlay.
Her depressed mental state, apart from this misfortune was a superadded feature to her former disposition.

Special Commentary:

1. Diagnosis suggested by unusual complaint of disproportionate shape.
2. Different effects of differing brands of Pituitary tablets. - Both were Whole Gland dessicated.
3. Ensuing marked mental depression consequent, it is suggested, on non-treatment.

Case 6.

Mrs B. Aet: 31yrs. Weight: 16st.31bs.

This patient is only of interest as regards her history.

Her excessive stoutness was reckoned by her to have commenced after her first child was born, some four years before. She had had a very difficult labour, and had required stitching. For her weight she proved herself to be very athletic at golf, and seemed quite unhandicapped in her freedom despite her appearance.

Hips and mid-thigh measured respectively 49 and 29 inches.

After three weeks treatment there was a loss of 6½ lbs in weight, and a decrease of 1in. in hip measurement.

This improvement was maintained and increased at a similar rate, under treatment, but it was stopped, while she was on holiday on account of the fear of possible pregnancy.

Unfortunately, previous subsequent measures were destroyed on the advent of pregnancy, otherwise the data would have proved interesting if not altogether reliable.

Labour was uneventful and unaided.

Special Commentary:

Child-bearing capacity seemed to be uninterrupted.

Case 7.

Mrs M. Aet. 39yrs. Height: 5ft.4½in. Weight: 13st.12lbs.

Fixation operation during 1922.
When seen in 1927, was vomiting at least once daily. Vomiting described as mechanical rather than nauseating. After one month's treatment, gave history of only having vomited once. Feeling much better and had lost 6lbs. After eight weeks on treatment, weight was 13st.4lbs. making a total loss of 8lbs. over eight weeks. During the last four weeks, had only one attack of vomiting, and patient attributed this to some known indiscretion in food.
In third month there was a loss of 1lb. There had been no vomiting, during this time.

Patient reported that menstruation had become more established, and had lasted for three days at last period after an interval of 26 days. This was said to be a decided improvement. Pain was present and also some clotting.

In fourth month there was a loss of 4lbs.
Period had lasted for 4 days, interval was 26 days. There was no pain and less clotting on this occasion.

(This patient who had been introduced by her hostess, while here on holiday, had continued under treatment and observation for four months. Thereafter, owing to her friend leaving this district, she was not able to return that year.)

On her return, in one year's time, (18/2/29), her obese condition was more aggravated than before, but curiously enough, her sickness, though troublesome, was much less frequent.
The measurements she then gave were these:-
Weight: 14st.3lb. 'Waist': 38in. Hips: 46in.
Midthigh: 24in.

It is of note that this patient volunteered the information that she seemed to increase in weight when she adopted golf as her sport, but having given this over for bowling any tendency to increase seemed to have been checked.

Special Commentary:

1. Early checking of vomiting, and its tendency to recur on withdrawal of treatment.
2. Return of menstruation to more normal conditions.
3. Suggested influence of exercise on condition.

Case 8.

Mrs R:

This patient was known to me for some four or five years prior to coming to consult, in 10/5/27, when she was considered to be a complicated case of obesity, endocrinous and alimentary, with a possible minor phobia superadded. History was most complicated, and her personal medical interest, at times most antagonistic to medical attendant, proved difficult to surmount. This was most regrettable as her gratifying response to treatment intensified her interest from a medical point of view.

History: She had at one time been connected with a Dr's household. After her marriage, she had kept alive her interest in the sick and had seen quite a lot of the practice of medicine from a lay point of view.

This continued after her two children were born. After her son, now aged about 20 years, had been born, patient had evidently been very ill during the puerperium and the diagnosis of 'diseased left ovary' was given. Her second child was born some years later. The knowledge of this diagnosis remained ever present with her and all her ailments, imaginary or otherwise, were related thereto.

On considering her health history, there were no serious illnesses. Patient had very bad and extensive Varicose Veins. Had always had very swollen feet and ankles, and very frequently had been examined for renal dropsy. Thus, mentally, patient had come to lead a life of invalidism, and was wont to bestir herself from her home, only on the morbid call of sickness among her neighbours. It was interesting to note her unselfishness and her capabilities on the call of this self-imposed duty.

On examination, only pathological conditions found present were those already mentioned, viz., Obesity, marked; Varicose Veins; Swollen Ankles and Feet. Headaches were complained of frequently, but there were no eye or ear symptoms. Urine was several times examined for sugar and albumen but was negative. Blood pressure was low. There was no anaemia. Temperature was generally subnormal. Limb-joints were abnormally supple. Skin was very fine to palpation. Hair was moderate in amount and fine in texture.

Patient resented instructions to lead a more open-air life, and refused even to go a short distance across the street to take her weight, and refused all attendance at consulting room.

In this case the precaution of personally supplying the Tablets was taken and with interesting results. After one month's treatment there was a decided change for the better in the mentality. This brighter atmosphere prevailed, and gradually increased with patient for several more weeks, until she admitted a general improvement in her well-being, menstruation had improved to its early former state; she admitted feeling less obese, and was very anxious to continue treatment.

Some weeks later, being in need of more tablets, she called at the consulting room - fully ¼ mile away - to repeat order. She gradually began to question the possibility of any deranged ovary being present.

Latterly /

Latterly, she travelled to town to attend a friend's wedding and remained on holiday for some days. This patient is now convinced of her need of Pituitary Tablets, and on the few occasions when she has omitted to take these for many days, she has definitely felt their need. This is also confirmed by her family's report. Excepting an attempt at intensive alkaline treatment, as curative for the swollen ankles and feet, - which is thought to be due to increased acid-content of the blood - no other medication was given till this more favourable report was obtained.

Besides the early mental morbidity evinced, and the need for prolonging pituitary medication, which still continues periodically, it is interesting to note a suggestive familial trait. Husband showed a decided tendency to Hyperpituitarism, being 6ft. 1in. in height: Size of Gloves: 9. Size of Shoes: 11., and has a somewhat acromegalic facies. Hat is 6.7/8.
Son is 6ft.2½in. in height and wears gloves size 8 and shoes size 9. Size of hat is 7.

Special Commentary:

1. Marked improvement in mentality.
2. Need for continued medication.
3. Suggested familial trait of Pituitary Dysfunction.

Case 9

Mrs M. Aet,43yrs. Height: 5ft. Weight: 17st.3lbs. Married. (very unhappily, latterly living separately.)

Complaint: Obesity. (for which had previously been taking Thyroid, with no benefit.)

History: Influenza: (1918) Miscarriage. (1921)

Symptoms: Easily tired: Dyspnoeic: Constant irritating cough: Easily satisfied at meals: generally lethargic; good sleeper, but often falls asleep during daytime.

Menstruation: Till 1926 regular since 14 years of age. i.e. every 26 days. Three years ago missed first period and since then has been very variable from three to four or five months interval: Persistent leucorrhoea.

Headaches: Unusual.

Eye Symptoms: Conscious of a spot on left eye vision, travelling with eye. Frequently has the sensation of loss of equilibrium when walking very erect or when going downstairs. Has never fallen in virtue of this disability.

Ear Symptoms: None.

Inclined to be very emotional.

Hair: Abundant, soft and fine in texture.
Skin: Delicate, soft and smooth.

Size of Gloves: 7. Shoes: 5½.

Blood Pressure: 120.

Urine: No noteworthy signs.

Four weeks after commencement of treatment:
Not so tired in herself; Sleeping well and feeling much more comfortable and less nervous: improvement in general appearance and bearing has been remarked upon by others: more lustre in hair: Menstruation, 4 days, checked, then 2 days. More copious, no clotting, byt still has leucorrhoea.

Four weeks later:
Feeling brighter and lighter: more able to work: Not sitting down so much: Amenorrhoea for six weeks.

Four weeks later:
Menstruation for four days after six weeks delay: Still feeling improved and much more spirited.

During the subsequent weeks patient carried on treatment more or less mechanically, as owing to her husband being in trouble, her mental equilibrium/

equilibrium was greatly upset, and therefore would not justify a comparative report.

This patient was all this time an acting school teacher and despite her anxiety and worry she was able to continue her treatment by medication. Her strength of will power was insufficient, however, to resist dietary indiscretion, as she openly confessed.
Recently this patient's sister was interviewed, while here on a visit, and she testified to seeing a most marked difference in the patient. She has exhorted her sister to continue treatment at all costs, but she affirms that the patient's enthusiasm needs no exhortation.

Measurements were as follows:-

	28/8/29:	15/9/29:	8/10/29:	1/11/29:
Bust:	52	50¾	49½	49
Submammary:	45	44¾	44	43
Abdomen:	--	--	--	--
Hips:	49	48¾	48	47
Midthigh:	23¾	23	22¾	22½
Calf:	--	15¾	15¾	15½
Arm:	16¾	16¾	15¾	15½
WEIGHT:	--	17st.3lb.	16st.5lb.	16st.3lb.

	22/11/29:	9/12/29:	6/1/30:	Loss:
Bust:	48¾	48½	48¼	3¾ins.
Submammary:	42½	42	40½	4½ins.
Abdomen:	41	41	40½	½in.
Hips:	46¾	46¾	46	3 ins.
Midthigh:	21½	21¼	21¼	2½ins.
Calf:	15½	15¼	15	¾in.
Arm:	15½	15½	15	1¼ins.
WEIGHT:	--	--	15.5	26lbs.

Special Commentary:

1. Failure of Thyroid medication to reduce Obesity.
2. Satisfactory result being obtained from medication, despite non-adherence to diet.

Case 10.

Mrs N. Aet.35yrs. Height: 5ft.½in. Weight: 14st.8lb.

General complaint: Excessive stoutness: Cough: Tinnitus Aurium: Shooting pains in head: Deafness: Good sleeper but for Tinnitus: Lethargy: Increasing nervousness: Asthmatic tendency, especially at night: Hoarseness on excitement: Easily bruised.

Previous Health History: Scarlet Fever: Influenza: Quinsy: Very difficult labour in 1922, when patient evidently was badly torn: Subsequent puerperium slow and prolonged.

Menstruation: late in onset, - at 15yrs -: duration 5 days, interval 28 days, no clotting or pain.

Present condition: Obesity marked: Signs of bronchitis in chest, localised mainly at both bases of lungs. Very marked pyorrhoea: Ear and Eye examination showed nothing abnormal: Urine nil abnormal: Blood pressure 110: Hair abundant: Skin smooth:

Menstruation: 28 days interval: 5 day period: severe pain at first: no clotting: slight leucorrhoea:

After one month's treatment, patient reported that hearing was much improved, and that Tinnitus Aurium was now absent. Frontal headaches daily, but not constant.

(Patient had meantime been advised to have teeth extracted and had complied with this instruction)

Subsequent report: Deafness now absent: Headaches lessened: Cough remained as before: Menstruation was unchanged.

Later: Patient was not so easily tired: was less nervous: Cough was only present at night and in morning: Frontal headache still present during some part of day: Menstruation was, if anything, rather less, but there was only very slight pain. Altogether patient was feeling so much better, that she felt her necessity to suspend treatment for the present on account of expense.

Measurements:

Height: 5ft.½in. Weight: 14st.8lb.

	23/9/29:	14/10/29:	12/11/29:	4/1/30:	Total Loss:
Bust:	45	44	41½	41	4in.
Submammary:	40	40	40	39½	½in.
Abdomen:	43	43	43	43	---
Midthigh:	22	22	22	21½	½in.
Calf:	14½	14½	14	14	½in.
Hips:	48	47	46½	46	2in.
WEIGHT:	14st.8lb.	14st.4lb.	---	14st.11b.	7lbs.

Special/

Case 10 contd.

Special Commentary:

Improvement and final complete abeyance of Tinnitus Aurium, and improved hearing.

Case 11.

Mrs H. Aet. 29yrs. Height: 5ft.7in. Weight: 16st.

This patient's chart was returned as follows; her earlier measurements being obtained from her corsetiere.

Familial history of stoutness: Mother and brothers stout.

Onset of Obesity: Marked condition four years ago, i.e. 1926.

Suggested Cause: Operation for Appendicitis.

Previous Illnesses: Appendicitis and operation.

Menstruation: From age of 12yrs: 5 day period: Regular: No pain: very slight clotting.

Daily urine output: 2 litres.

Headaches: None. Eye or Ear symptoms: None.

Hair: Good in amount, fine in texture, not deciduous.

Skin: Dry, soft and smooth. Gloves: 6½. Shoes: 5-4.

Measurements:	1926:	1929:
Bust:	46	40½
'Waist':	32	30
Hips:	42½	39
Midthigh:	---	20
Calf:	---	14.
WEIGHT:	16st.	12st.8lb.

Married age 20: Known to practice for some 8 years: Was advised by Gynaecologist that operation was necessary before she could become pregnant. Operation refused: Five years after marriage gave birth to twins, weighing respectively 3½lbs and 4½lbs. Both living and well. Four years later gave birth to another girl of average weight. Both pregnancies normal but chloroform given to ensure minimum of damage to tissues.
Various modes of reducing treatment had been tried in her endeavour to become thinner, mainly dietary and exercises persevered with, but the latter appeared to influence weight adversely according to their violence, while the former appeared to have insignificant, if indeed any, influence on figure and weight.
Patient seemed to carry weight well, in so far as she was a very good tennis player, neat dancer, and an enthusiastic gardener. She confessed that prior to this treatment, she had regularly adopted skipping exercises, skipping 10 minutes daily, for some three months, but thereafter had found, to her alarm, a decided increase in weight. Curiously enough on her discouragement thereupon, she desisted from skipping/

skipping and almost at once began to lose weight.

Patient was put on treatment late in 1926, and during the Summer of 1927, all energetic exercise was forbidden, her interests becoming absorbed by more intensive gardening, - rock gardening -. In one year's time she had improved extremely well, to her own and to her friends' satisfaction. Her weight gradually became reduced to her present weight, i.e. under 13st., and since then she has been obliged to continue periodic Pituitary feeding, even until this present date.

Again it is of interest that this patient has made the personal discovery that on taking up golf she at once began to increase in weight. Motoring has now become her main hobby, and she states that this exercise suits her.
Fortunately, no nervous instability has ever been noted in her condition, and this may accordingly account for her complete immunity from any nervous irritation, direct or indirect, therefrom.
Again this patient has also experienced two different brands of Pituitary tablets, and is convinced of the superiority of these particularised to patients reported herein.

Special Commentary:

1. Failure of previous methods tried for reducing figure with subsequent response to above.
2. Suggested influence of exercise on condition.
3. Need for continued medication.
4. Different effect of differing brands of Pituitary Tablets.

Case 12.

Miss W. Aet. 26yrs. Height: 5ft.5in. Weight: 14st.

This patient is interesting, not so much as regards her response to treatment, but more as regards her condition, and her varying medical complications which have ensued, while she has been under observation, i.e. generally speaking 4yrs.

When first seen this patient was suffering from Obesity; and marked discoloration with definite ulceration in front of both legs.
Patient had been advised by her Doctor in town as regards Diet for excessive stoutness, had been given Pituitary and Thyroid feeding, advised to wear warm stockings and also been advised elastic stockings to be worn as support.
Under this treatment, continued in toto, supplemented with a very mild Ichthyol Ointment to allay irritation in areas ulcerated, these ulcerations gradually healed and for several reasons, the chief being her impending marriage and settlement in this district, it was evidently impossible to obtain more than her disinterested cooperation in treatment.

Her chart was returned as follows:-

Familial history of Stoutness: Only father and brother stout.

Onset: Have always been stout.

Suggested Cause: Unknown.

Previous illnesses: Measles: Whooping Cough in childhood.

No headache, eye, or ear disturbances.

Hair: Normal in amount; Fine in texture; Not deciduous.

Skin: Dry, soft and smooth.

Urine: Nothing abnormal in amount; no sugar or albumin.

Blood Pressure: Low.

Gloves: 6½. Shoes: 5½.

Menstruation: At 11yrs. 7 days. 28 day period. Only headache during period. Clotting.

Her first child was born in 30/7/27, and confinement was normal and patient required 2 stitches. After a few weeks it was found impossible to continue lactation and child was weaned.
Towards the end of this year patient again became distressed about her condition and was put on to former treatment. Unfortunately, at this stage, she did not obtain the Thyroid Tablets on the Insurance Prescription through some misunderstanding. After some 2 months her report seemed quite unsatisfactory and this omission being discovered in consequence to enquiry, she was recommended to begin the whole treatment de novo. Misfortune once more baulked her progress, which had admittedly been remarked/

remarked on, as her child became seriously ill with middle-ear disease. The consequent expense, proved it unwise to her to resume this treatment after the recovery of the child, and this remained in abeyance for some time.
Late in 1929 she came once more to consult and it was thought that patient was some months pregnant.
From her 5th or 6th month of pregnancy, she was much troubled with headaches and dizziness, and as a precautionary measure she was referred to eye specialist for examination. His report was negative as regards definite eye disease, while he was satisfied that the transitional changes in Pituitary due to pregnancy might and probably did, account for symptoms. Labour set in on 8/2/30 and was uneventful. Patient refused to attempt nursing child. On examining this patient some weeks later, it was thought fit to recommence her anti-obesity treatment. However, after one month she was examined and treatment was stopped pending a more exhaustive examination by a nerve specialist, to rule out possibility of Disseminated Sclerosis. His report is as follows:-

> The most likely explanation of her symptoms is Disseminated Sclerosis. The case is still early, and one can hope that it will not advance quickly if at all.

During the month on treatment patient had lost 9lbs.
Her measurements given at this time were as follows:-

> Weight: 13st.5lb.
> Bust: 40in. Abdomen: 44in. Hips: 48in. Midthigh: 21in.
> Calf: 16in. Ankle: 11in.
> Length of inside leg: 24in.

Special Commentary:

1. Received as a previously diagnosed case of Hypopituitaric Obesity.
2. Leg Ulceration: considered to be due to a primary condition of chronic indurative erythema of legs, such as was earlier described by G.N.Meachen as a 'persistent erythema of the erythromelalgic type'.
3. Childbearing capacity seemed to be uninterrupted.
4. Failure of anticipated improvement while on Pituitary medication only. Recovery obtained on supplementing this with thyroid.
5. Onset and suggested cause of headaches and dizziness during pregnancy.
6. Suspected complication of Disseminated Sclerosis. Regarding this latter point, Langdon Brown, in his book, 'The Endocrines in General Medicine' says (P.65.), when speaking particularly on Pituitary obesity, "Various organic diseases of the nervous system may complicate the condition; thus, I have seen Disseminated Sclerosis come on quite rapidly."

Questionnaire:

Age: Height: Weight:

Complaint:

Familial History of Stoutness:

Onset: a). Age:
b). Suggested cause:

Previous Illnesses and Year:

Menstruation: a). Age at Onset:
b). Duration:
c). Regularity:
d). Pain:
e). Clotting:

Measurements: a). Bust:
b). Submammary:
c). Abdomen:
d). Hips:
e). Mid-thigh:
f). Calf:
g). Ankle:
h). Mid-arm: (Biceps muscle tense).
i). Forearm:
j). Length of Inside Leg:

Levels adopted Personally:
a). From upper Sternal border 6 inches.
b). 8½ inches from upper Sternal border.
c). Umbilical level:
d). Maximum measure obtainable:
e). Mid-point of Femur:

Size of Gloves: Shoes:

Eye Symptoms:

Ear Symptoms:

Headaches:

Hair: a). Amount: Head- Eyebrows- Axilla-
b). Texture:
c). Deciduous:

Skin: a). Dry or Moist:
b). Soft or Coarse:
c). Smooth or Rough:

Urine: Average daily output:

For Consultation:

Temperature:/

Temperature:

Urine Analysis: Sp. Gr: Albumin: Sugar:

Blood Pressure:

Specimen Charts:

No.1.

(Miss S.)

	February:	March:	April:	May:	Total Result:
Weight:	13.12.	13.5.	13.	12.8.	18lbs.
	Over 3½ months loss 18lbs. = average loss 5lbs.p.m.				
Hips:	42.	41.	40½.	39½.	2½in.
	Over 3½ months loss 2½in. = average loss 2/3in. approx.				
Thigh: Right:	22.	21½.	20½.	20.	2in.
Thigh: Left:	23½.	23.	22.	20½.	3in.
Calf: Right:	--	15.	14½.	14¼.	¾in.
Calf: Left:	--	15¾.	15½.	15¼.	½in.

No.2.

(Mrs. B.)

	January:	February:	March:	April:	Total Result:
Weight:	11.6.	11.	11.	10.13.	7lbs.
	Over 4 months loss 7lbs. = average loss 1¾lb.p.m.				
Bust:	40½.	39½.	39½.	38½.	2in.
Submammary:	36.	36.	35.	34.	2in.
Abdomen:	37.	37.	36.	35.	2in.
Hips:	39.	39.	38.	37½.	1½in.
Midthigh:	20.	18.	18.	17.	3in.
Calf:	14.	14.	13½.	13¼.	¾in.

Menstruation:	2 days.	2 days.	2+days.	3 days.	Increase.

Treatment:

1. Diet:

Separate, as much as possible, all fluids from solids, taking fluids before solids, or not less than two hours after solids.

Take no sugar, sweets, or jams.
Take a limited amount of starchy food, - principally toasted bread, but no potatoes, no milk-puddings, no sweet-cakes, sweet-biscuits, etc.

Take a small amount of butter, but no gravies, no fat bacon, and a limited amount of food which is fried.

Take no soups, and take meals with a minimum amount of fluid, but to make up for this take extra drinks between meals and on going to bed at night.

Take uncooked fruits, and plenty of green vegetables.

---

2. Ry.
Tab. Thyroid. Gr.½.
mitte 100.
Sig. One thrice daily.

3. Ry. Tab. Pituitary. Grs.2.
Whole Gland (des.)
(Armour)
Mitte 24.

Sig. One daily.

Diagrams:

Diagrammatic representation has been attempted, herewith, and the following precautions have been observed:-

Subject chosen for representation is aged 39.yrs: is small in stature, - 4ft.9in. - and measurements have been taken personally.
Period under treatment, and resulting improvement represented, is from 6/1/30 till 7/5/30, viz. four months.
Normal delineation is a tracing from an artist's drawing, executed specially for the present purpose. While the lines which model the back have been left unaltered, - for the purpose of this diagram, - the modelling of the other lines have been accomplished by means of the following four measurements which have been taken:-
1). Bust: 2). Submammary: 3). Abdomen: 4). Hips:

To achieve correctness in proportions, all drawings were, first of all, executed on 1/10inch squared paper, and thereafter, submitted diagrams were traced.

Diagram No. 1.

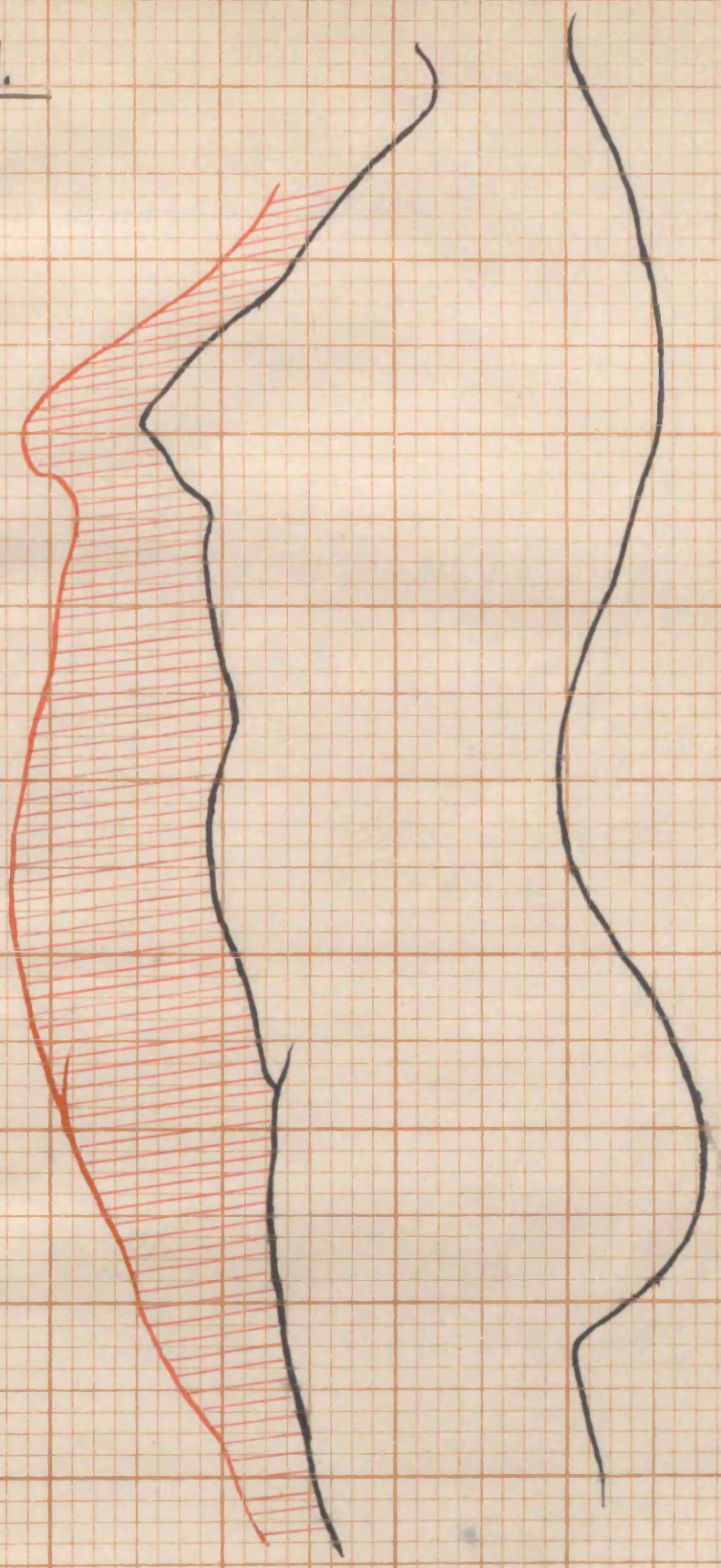
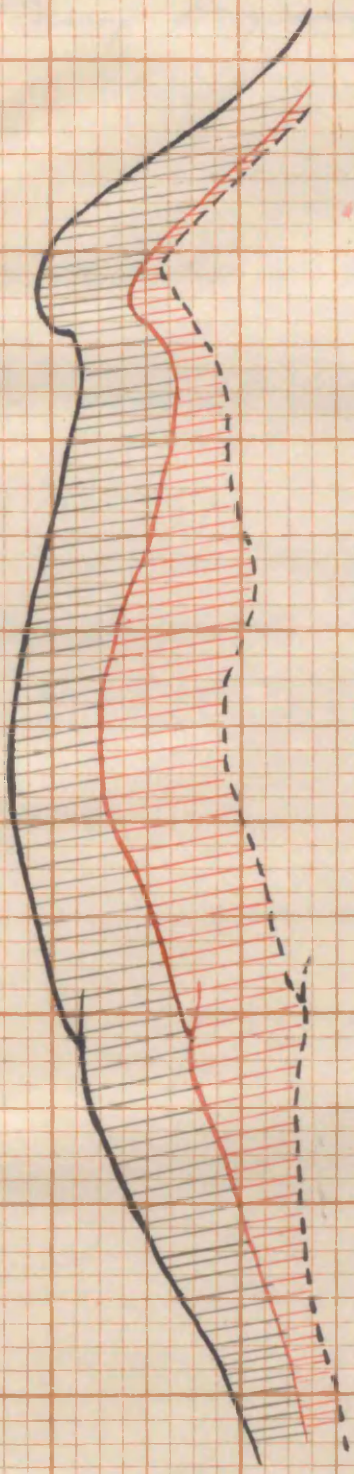


Diagram 1. Black line represents Normal Figure.
Red line represents Degree of Obesity.
Red Shading represents Amount of Obesity.

Diagram No. 2.



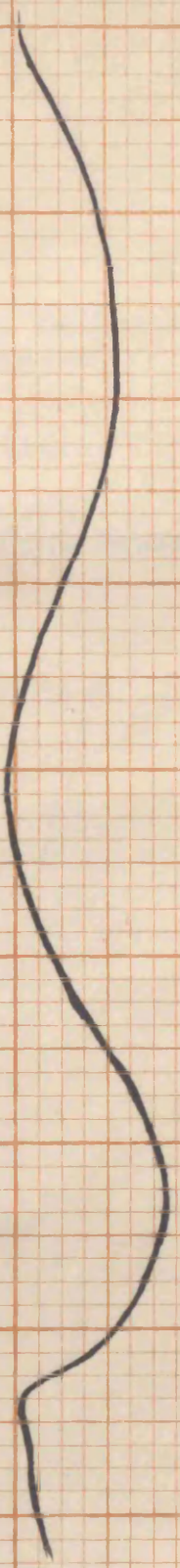


Diagram 2. Black dotted line represents Normal Figure.
Black Line represents Obese Figure.
Red line represents Remaining Degree of Obesity.
Black Shading represents Reversionary Progress under treatment.
Red Shading represents Remaining Amount of Obesity.

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   a). Crew and Weisner: 26/4/30: p.777.
   b). Weber: 23/5/25: p.961.
