procedure is only indicated where there is reason to believe that it may be increased above normal (alkalosis) before alkali therapy is begun. Alkalosis is likely to be met with in cases in whom there has been intractable and copious vomiting for some days, or where for any reason there is marked and prolonged dyspnoea. Under such circumstances alkali therapy must be instituted slowly and with care, unless a preliminary estimation of the blood alkali reserve indicates that there is not already an alkalosis. When there is reason to believe that pyelitis is associated with chronic nephritis with nitrogen retention, similar precautions should be taken. Care is required also in cases with gross cardiac irregularities. I have never seen clinical alkalosis result from giving adequate doses of alkalies in uncomplicated cases.

Pyelitis of Pregnancy.

Acute and subacute B.C.C. pyelitis of pregnancy has certain features peculiar to this state. In pregnancy, at least in the later months, some element of mechanical obstruction is probably always present, and this of course tends to increase as pregnancy advances. In any stage of pregnancy, if the obstructive factor be marked then alkali therapy must inevitably fail. This is proved by the fact that cases not responding to adequate alkali treatment immediately improve on the introduction of ureteric catheters, or the termination of pregnancy. In early pregnancy, then, when obstruction, if present at all, is minimal in amount, thorough treatment with alkalies is to be recommended. In the later stages alkali therapy should also be given, and if not successful, and the disease appears to be threatening life, as occasionally happens, then pregnancy must be terminated. It is interesting to note that there is even less danger of alkalosis in pregnancy (unless complicated by chronic nephritis) than in normal persons, because in this state the kidneys are unusually permeable to alkaline salts, so that any excess is readily passed out in the urine.

Experience in the treatment of many cases has shown that if the details of the method just described be conscientiously carried out, the results obtained will well repay both patient and physician. Lack of success is chiefly due to slovenly and haphazard dosage, or to a mistaken diagnosis.

THE TREATMENT OF OBESITY.

By H. CECIL BULL, M.B., M.R.C.P.

THERE are two factors in the treatment of obesity—Psychology and Diet. Of these, Diet is simple. Psychology is very difficult, which explains why there is so much talk about weight reduction and so little accomplished.

“Everybody talking about Heaven ain’t going there.” The history of man is a record of individuals who have tried to control human wills—their own and those of others—with indifferent success. The teachings are beautiful enough and if men lived up to them heaven would be on earth and there would be no need to talk about it; but there is an excess of wish and not enough will. Man is acutely conscious of this and in consequence suffers from psychological inferiority finding expression in a volume of talk and explanation—apology for not living up to the few simple rules of his belief.

Anyone who is called upon to advise in matters of diet becomes conscious of this human weakness, and while regarding it with sympathy we never depart by one word from the principles or allow a patient to think he is deceiving his doctor and getting away with it.

In the early history of man learning was in the hands of the priests; they were therefore advisers on matters of health and inevitably had something to say on diet. Moses clearly saw what was wrong with the Israelites in slavery and took them out and made them lead a hard nomadic life in the great open spaces until he bred a generation fit to fight and conquer. His health laws were magnificent but some of them puzzle us to-day; why did he repeatedly forbid the Israelites to eat fat?

Fasting as a means of self-discipline is a teaching of almost every religious body in the world. Gandhi is a brave exponent, while Western religions have become somewhat lax and are content to observe the letter rather than the spirit. It is no mere accident that the control of man's intake has been insisted upon by religions throughout the centuries; they have recognized the relation of diet to health and of the healthy body to the healthy mind. Uncontrolled, man's appetite destroys his body and weakens his moral strength. In former days control was obtained by force or by threats; to-day we appeal to his education, and appeal in vain. Fear is still the greatest ally of the reformer and it is not until the man's tailor or the woman's looking-glass reveal the truth that we are invited to take a hand.

For all pious talk to the contrary there is no more unpopular suggestion than to advise a patient to lead a healthy life for health's sake in order to prevent disease and disfigurement and to obtain that happiness and ability to work which alone comes from continued good health.

It is hard to blame individuals for this, the individual is but a cog in the social machine, and he must make contact and turn with the other cogs or else be content to do his own turning. A gregarious animal, man cannot bear it.

The fault is with the system and the curious conventions by which it is governed. Many of the strange beliefs surrounding us are based on folk-lore, old wives' tales, statements made by eminent beings which no one has ever thought of contradicting or disproving. There are those who seriously believe they catch cold from certain winds, just as puerperal fever was once believed to come from the east wind. The thousands of unreasoning superstitions by which civilized beings of to-day live—and die—constitute the foremost barrier to scientific progress.

Hospitality—one of the greatest of human virtues—is perverted by man. To entertain the stranger within our gates is a beautiful thought, but to make the same stranger sick is not so pretty. Several people gathered together can never be in the same state of appetite and health at the same time, but they must pretend to be even if they feed the dog when they think their host is not looking; furthermore, the guest is expected to eat a little more than his host.

Diet is a matter sacred to the individual, and true hospitality should no more dream of questioning the stranger's idiosyncrasy in food than in his religious belief.

Until human psychology rises to this, persecution of the guest will continue and the health of the people continue to suffer.

The facts of obesity are few and simple.

All obesity is due to over-eating and, conversely, all obesity can be reduced to any

desired level by eating less than the body requirements. But here we come up against one of the oddest kinks in the human brain. Man and woman hate to cut down their food. This is not true of infants and animals; the former have a little natural instinct until it is forced out of them by well meaning adults, the latter have a lot and put up a mute resistance to the human who attempts to feed them when they know better.

"You may take a horse to the water . . ." Lay people and, indeed, doctors advise sick people to eat and drink "to keep their strength up," advertisements in the daily press exhort the public to take this and that to build up their body strength; the poor public hears so much about strength that they think it must be true; what is worse, they force these strength-giving things down the throats of their unwilling children with the pathetic exhortation that "mother knows best."

Once upon a time obesity was regarded in England as a virtue, a visible sign of prosperity and good health. In certain parts of the world obesity is still regarded as the glory of woman. In the Western races this is not so; fashion to-day has decreed that woman shall be slim, therefore public attention is for the time being focused on the problem.

While desiring to change their shape, neither men nor women have any desire to change their manner of living, and they will fight with all their puny weapons against the inexorable laws of Nature. Up to a point, corsets, belts and straps camouflage this spreading in inconvenient places, so that whatever the appearance of Venus Anadiomene she still feels able to deceive Paris with her clothes on. Later she hears of some drug, and with characteristic enthusiasm of the moment poisons herself with thyroid, ingenuously buys bottles of advertised preparations. The next stage is a "diet sheet," and these things are handed round as an infallible cure. It is one of my saddest reflections that having supervised the weight reduction for a number of patients I have been referred to as one who "will give you a diet sheet."

One of the most uncivilized traits in human character is love of the dramatic in medicine. We have successfully passed through the stages of witchcraft and incantation, potions containing the eye of a newt and the blood of an ass, blood-letting, &c., to vaccines and intravenous injections; but what is the reaction to the undramatic?

"Go and wash in Jordan," said the prophet.

"But Naaman was wroth and went away, and said, behold I thought he will surely come out to me and stand and call on the Name of the Lord his God and strike his hand over the place, and recover the leper."

I have stressed the weakness of human endeavour and the love of sorcery because they are the obstructive factors in the treatment of obesity. Reduction of weight presents no difficulty except the psychology of the patient, but in the majority of patients this difficulty is insuperable. Man is, by nature greedy, his passions are loosely controlled, he is willing enough to put his hand to the plough but everlastingly looks back.

It is true that all obese people are greedy, but the distinction is a little unjust; all people are greedy but they are not all obese, the obese suffer from an additional disorder of metabolism whereby the excess they eat is laid down as fat. They have the further disadvantage that they appreciate the æsthetics of eating, they are good fellows enjoying the company of others and the table. The restriction necessary to improve their figures upsets their whole manner of life. For this reason physicians have insisted on having patients under control in nursing homes and institutions as the only means of breaking

association with their fellow creatures. This is all very well as a temporary measure, but the dietetic treatment of obesity involves a permanent change of heart; temporary slimming is waste of time, rapid weight reduction is bad and the result of raising the control and letting the patient out of an institution is that he returns to his former habits.

In addition to what the doctors do, there is a good deal of advice on diet broadcast in the daily press and elsewhere. Little of it is good advice. It has its day and is forgotten.

When after years of steady increase the individual determines to call a halt, he is for the moment an earnest person. True to his psychology as a member of the lay public considering a medical matter he expects something dramatic. Women are particularly earnest and their enthusiasm is even shorter lived. They desire and expect severe treatment, they are willing martyrs enjoying their martyrdom and telling their friends; they want to make themselves weak and ill, but their enthusiasm is a thing of air which dissolves like a punctured balloon when they are told to "eat less and keep healthy." General Sir Samuel Naaman and Lady Naaman are just as wroth with their doctor as was the famous captain of the host of the King of Syria with the prophet Elisha.

Dieting to reduce weight is regarded as a sorrow to be endured at such time as a few weeks can conveniently be spared from the busy round of feasting and self-indulgence. Health a gift to be abused until Nature steps in with slow and inevitable revenge. Then is the time to call upon the doctor to combat with wizardry and dramatic action the ravages of the enemy so that the dance to death may continue.

The first tentative step has been made when the patient approaches his doctor with a desire to become thin, and you may be sure that fear has got hold of him.

This is the psychological moment, the moment to follow up an advantage. It is the opportunity for a lecture, sermon or blast of vituperation according to the temperament or education of the patient. Such discourse must always be ended with the certain assurance that not only can weight be removed, but that health will be improved and the expectation of life increased. The golden vision, however, is not for the weak-willed and half-hearted but only to those with determination to stay the course. If the gain is not worth the sacrifice advise him to go his way.

Let it be added that memory is short and good intentions ephemeral, as anyone who has attended a revivalist meeting knows. Therefore it is necessary to follow up this first victory by visits from time to time when encouragement, praise or blame is given while progress is observed.

Principles of Healthy Weight Reduction.—The first principle is that there shall be no departure from the diet laid down. This seems so obvious as to need no mention, and yet it is the rock on which the majority stumble and is the reason why so much stress has been laid on the psychology of weight reduction. With the most earnest desire to reduce weight, patients will deceive themselves and their doctor and make ingenious excuses for so doing. Whenever weight loss is not going according to plan there is no need to alter the diet, there is only one reason for failure but it often takes a lot of careful questioning to extract a confession. Therefore patients have to be watched, such is human nature.

The second principle is that the loss of weight shall be gradual. The enthusiasm of the would-be slimmer demands quick results, but this enthusiasm must be curbed.

Weight production is a gradual process and weight reduction should be as slow. The body has to learn to dispose of its excess fat and make good by tissue contraction the spaces where it has been stored.

Rapid weight reduction, besides making the patient feel weak and unfit for work, causes laxity of the subcutaneous tissues, wrinkling of the skin and a haggard look which no amount of massage and cosmetics can obscure. Therefore to be healthy, weight reduction must be gradual. An average loss of $1\frac{1}{2}$ lb. a week, or a stone in two months, is quite rapid enough.

The third principle is that there shall be no interference with the patient's work, exercise or activities. This is most important. In the preceding paragraphs it has been emphasised that weight reduction involves a change of heart, a new outlook on eating and a strength of mind to live up to the principle; it should not be regarded as a form of medical treatment to be endured for a time, and it certainly must not be thought of as a physical hardship. Correctly dieted the obese patient feels much better, has more physical energy and does not suffer from hunger.

Weight loss is likely to be irregular. For the first fortnight there may be no change and patients should not weigh themselves at frequent intervals. The total loss at the end of a few months is just the same.

This irregularity is probably due to regulation of the water balance of the body. Fat people hold a good deal of water in the tissues and it takes time to break the water retention.

Diet.—At one time I calculated diets carefully on a caloric basis, taking into consideration the metabolic requirements of each patient, his present weight and that to which he ought to be reduced; but I found—as I fancy most observers have found—that the diets did not vary greatly, whereas the obedience of the patient was everything.

A reduction diet should be one which has sufficient food value and bulk to be satisfying and which also allows enough scope not to become monotonous. It must also be such that no special cooking is required and no exact weighing necessary, the patient must be able to dine at home or with friends or in a restaurant, he is to exert his own will to refuse such dishes or accessories as are unsuitable and he must never make himself a public nuisance in his home or outside it by proclaiming that he is on a diet.

The caloric value of such a diet is about 1,000 and it contains all that is necessary for health.

Protein	...	...	1 egg
			$\frac{1}{2}$ lb. lean meat or fish
Fat	...	...	1 oz. butter or fat
Carbohydrates	...	...	1 lb. green vegetables and salad
			3 oz. root vegetables
			2 oz. bread or biscuit
			3 grapes

It is no use handing that to the patient, who immediately asks if he is to have the scales on the table or is the food to be weighed in the kitchen? This humour is forestalled by giving the diet in a different form and telling the patient there are two items which he should weigh once to learn the approximate relation of weight to volume; they are bread and butter. An ounce of bread is about one thin half slice; in the

privacy of his home he may weigh this once and thereafter make an approximate guess. The two ounces of bread may always be varied by the equivalent weight in plain biscuit, zweiback or any cereal.

An ounce of butter is about ten small pats, he should weigh half-an-ounce of butter once in the form he is accustomed to see it on his dining table. This is approximately the daily allowance, the other half being taken as fat in meat and gravy.

The inclusion of three grapes is deliberate and is intended as a definite indication that the need of fruit has been considered and assessed at a very small quantity. To leave out fruit entirely is sure to bring forth a great deal of questioning and doubt on the part of the patient. The public has been told so much about eating more fruit and the value of vitamins that most patients feel they are on safe ground in raising this question. Besides, their friends have been on diets of fruit and fruit-juices and have lost weight. The answer is that this diet is intended for maintaining and improving health as well as losing weight, that the rôle of fruit has been carefully considered and is assessed at three grapes.

I do not care to argue with patients on this subject. It may be true there is no scientific evidence against the use of fruit, but it is certainly true that there is no such evidence for it. The talk about fruit is mostly catch-phrases expressing an unreasoning popular belief. The known evidence is that under certain conditions of total withdrawal of fresh foods scurvy will appear and can be cured by citrus juice.

On the other hand a diet of fruit will by its alkalization soon make a patient ill in temperate and cold climates and cannot be continued long. He will lose weight, but it should also be our object to keep him healthy. In advising diet for weight reduction I find it better to eliminate fruit—except for the placebo of three grapes—weight reduction proceeds more uniformly and I have suspected that fruit is in some way concerned with the retention of water in the tissues.

For the patient the diet is interpreted as follows :—

- Breakfast.* One egg (boiled, poached, scrambled, fried or omelette) or bacon, ham, fish, fish-cake, kidneys, sausage.
Mushrooms, spinach or any green vegetable.
- Lunch.* One ordinary helping of lean meat or fish.
Green vegetables and salads unrestricted.
- Tea.* One thin slice of bread and butter.
- Dinner* Clear soup.
One ordinary helping of lean meat or fish or a small helping of each.
Green vegetables unrestricted.
One dessertspoonful of root vegetables.
One small half slice of toast and butter.
- Drinks.* Water, soda-water, tea, coffee, bovril.

It is of course not intended that the patient shall divide up his daily ration in this way, but it is an indication for him of what can be done and what he may not exceed. Also it is usually necessary to explain that he does not have to eat it all, the only point I make on the positive side is that he shall eat a quantity of green vegetables in the day. Some prefer that these shall be "conservatively" cooked—and they are more palatable in this way.

The amount of butter is small, but there is little desire for butter when there is nothing to spread it on, and fat comes in with the meat and gravy.

The small quantity of root vegetables is useful since it allows for shepherd's pie, stew, fish-cakes, &c.

The amount of sugar which will come into the cooking of such a menu is so small that it may be ignored.

When the patient looks at this diet and says it is reasonable and he does not eat so much anyway, ask him to put that in writing for future reference.

The diet is reasonable but absolutely rigid, it inflicts no hardship but demands his honest co-operation. It is well to remind him that sugar in all forms is totally prohibited and so are cereals beyond the two small pieces of bread or biscuit. In fact he may spread himself with all his ingenuity on the items of his diet but never go outside it.

There is no restriction on the quantity of fluids but only on the quality. The amount of milk in tea and coffee is not significant. Sweet mineral waters and all fruit drinks are prohibited. Two whiskey-and-sodas in the day should be allowed to those accustomed to alcohol, but there is no allowance for wine.

This is the diet. All patients will lose weight slowly and healthily. They should make return visits at the end of a fortnight and thereafter at monthly intervals or so according to their progress. The first visit is to enable the patient to state his peculiar difficulties with the diet and for the physician to find out that the diet is being interpreted correctly and faithfully. I do not expect to find any significant weight loss at this visit.

The important thing to learn as time goes on is that the patient is conscious of better health, is satisfied with his meals, feels no hunger and has lost the desire to eat prohibited foods.

There is a definite endocrine factor in certain cases, particularly women who have suffered an artificial menopause. Thyroid is indicated for these cases, not primarily to reduce weight but to correct metabolism. I do not give thyroid until the patient has settled down to the diet, and weight is beginning to fall. The effect of thyroid treatment is best observed on a standard diet and unless the patient is keeping to the diet I do not use it.

The dose should be small to begin with, $\frac{1}{2}$ to 1 gr. a day, and increased if necessary at the end of each month. If the weight loss is more than 8 lb. at the end of a month the dose should be reduced.

Dieting for health is a life-sentence and it should be obvious to the patient that if he returns to his former uncontrolled habits of eating and drinking he is likely to lose health and regain weight. Those who have really stayed the course and reduced weight are often unwilling to depart from their diet. This is a good sign, the diet should remain the basis of their future eating and drinking but they should be encouraged to relax gradually along the lines of cereals, fats and fruit. They should always be on their guard against sugar and never add it to their food.

The success of a reduction diet is not to be measured in terms of lost pounds. Those who have slowly and deliberately lost weight are physically and mentally healthier creatures, more efficient machines and better citizens. Their psychology in relation to food has changed. They do not regain weight. This is the ultimate test by which success is measured.