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DISEASES OF
SEDENTARY AND ADVANCED LIFE

MILNER FOTHERGILL



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THE DISEASES

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OF

SEDENTARY AND ADVANCED LIFE.

A Work for Medical and Lay Readers.

BY

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'The mission of medicine is to prevent as well as cope with disease.'



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'You will have soon the conviction that the most essential point of diagnostics does not lie, as many seem to think now, in the technical dexterity of physical exploration or chemical investigation : but that the chief point is to be looked for in the thorough anatomical and physiological education of the physician ; which education is alone qualified to give him the principles according to which the results—obtained by the examination of the patient—can be combined, and recognised, and weighed in their mutual connections.'—
VON FRERICHS.

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TO

T. CLIFFORD ALLBUTT, M.A., M.D., F.R.S.,

IN REMEMBRANCE OF OLD DAYS AND A LONG-
STANDING FRIENDSHIP,

This Work is Dedicated

BY

THE AUTHOR.

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P R E F A C E.



THIS work is written to fill a gap in medical literature. The diseases of Sedentary and Advanced Life lie a little outside and beyond the ordinary Text-Books of Practice of Physic. As such a work is certain to be read by lay-readers, the fact has not been forgotten. There is much which intelligent lay-readers may wish to know—and which, indeed, it is desirable they should know, if they knew where to lay their hand upon it—in this work. But the work is not written for them : but rather for older medical men who have dropped behind in their reading ; and younger men who, on encountering the actual difficulties of practice, find their hospital training not quite a complete equipment. The writer, too—such is human vanity—ventures to think that in this work an aspect of disease is presented which is not always kept sufficiently in view ; and which will make the work acceptable even to some well-read members of the profession.

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THE
DISEASES OF SEDENTARY AND ADVANCED
LIFE.

PART I.

Early Life.

CHAPTER I.

CHILDHOOD.

WHO does not know the wild gambols of dogs when taken out of doors after a period of confinement? Who that is familiar with the country does not know the delight of a young horse turned loose, its antics and its flings? There must be some law why young creatures should manifest their delight in muscular movements. It holds good of man; as any one knows who has been near a school when the children are let out. These muscular movements include shouting, just as the dog barks as he gambols.

Watch children at play when they are allowed to please themselves. They have games in which every muscle of the body is thrown into action. How busy are the little hands arranging bits of pot and glass into 'dolls' houses; or they are engaged in making mud pies, or in juvenile engineering, building miniature dams across streamlets. Muscular movement is evidently pleasure to them. Such are the healthy children of our village-greens.

What do we see in our towns, and too much now even in our villages? Little mites cooped up in perambulators. Dressed up to the extreme of their parents' purses, the tiny creatures are taught decorum; and, chastened by the nursemaid's chiding, they are as demure and proper nearly as their grandmother in her

wroughton, or the bath-chair. These are not natural children ; they are artificial children. No play, no antics ; nothing but formality. And so the poor things are taken out for an airing. It is not denied that a perambulator has its uses ; yes, and its abuses, too ! If used as a means of carriage through busy or muddy streets to the parks, where the children can be set down to play, it has a high value. Instead of tiring themselves on the journey, getting into people's way, or tumbling and covering themselves with dirt, the children can be conveniently conveyed to their playground in a perambulator. That is the use of it. Or in bad weather children can be taken out in it, and so get the air ; which is better than not getting out at all. But here again the perambulator is a vehicle—its legitimate use.

But when the little folks are formally dressed, placed in the perambulator, and taken out for an hour or two, then this is not exercise ; nor can such an airing take the place of the exercise of walking. It is probably easier for the nurse to take her little charges out in this way than to convey them on their feet, taking the youngest in her arms ; as was the case before the day of the perambulator. If the children are too small to talk, she may leave them in their prison while she discourses with the policeman, or a soldier, or another nursemaid ; or perhaps outside a tavern while she and another nursemaid adjourn to have some ale. And then the children are brought home, and supposed to have had some exercise. Why, such carriage exercise is as pernicious for them as for the lady who goes out in her carriage, when she had infinitely better be on her legs. The lower limbs are not exercised when cooped up in a limited space ; nor is there any healthy play of the body or arms permitted in this formal decorous airing. This artificial substitute for natural play is an impostor. Exercise is as good for the infantile viscera as for the city man, who mounts a steed because he has understood that 'horseback exercise is good for the liver.' The perambulator then has its disadvantages.

Then the child grows too big for the perambulator, and so has the use of its legs. But still the poor young creature is under the thralldom of propriety. The child must behave itself ; *i.e.*, it must not romp or gambol, or make any movements which are unseemly. Poor little mite ! Dame Nature has planted in it certain instincts as surely as the appetite for food and drink ; but

~~Dame Propriety~~ cannot tolerate them ! Decorum presses upon it unduly, and the growing form is being moulded into a piece of conventionality. Boys are allowed some freedom ; but girls must not romp. Mrs. Grundy catches them young indeed. Well-behaved children are charming ; but surely manners are compatible with exercise ? Why should not a child be allowed to revel in those muscular movements which are as grateful to it as to the horse, or dog when set free ? Because it is not proper, and the physiologist should not ask questions ! We talk of the days of yore ; about the merry England of a by-past time. Certainly we may continue to do so when we contrast the scene of children at play on a village green, and then look at that saddest of all sights (in ordinary life), a 'crocodile.' The formal procession of school-girls, the biggest in front with the little ones in the rear, and a well-meaning adult keeping a sharp eye on all, to reprove the first spontaneous movement. It is as sad almost as was the sight of the poor little children at the Brentford Union, who sat still (as still as they could, poor mites) under the eye of an old woman, because they had no toys to play with. Has a child no pleasure in handling toys ? Does not it enjoy building a card house, or constructing a temple with its mimic bricks ? Look at a girl fondling her doll, dressing and undressing it in the sensuous delight of ceaseless movement. The doll is dear to the heart of the small girl ; and who would wish to deprive her of it ? Nursing her doll is one of the few exercises still permitted to little girls. The age is getting too formal for healthy childhood. Simple, natural amusements are going out of fashion. The girl-child of town life is rapidly being transformed into a piece of formality.

How are we to preserve the health of our children if we thus traverse Nature's processes ? The instinct of movement has to be repressed. There is a reverse side to the Board School, and the examination table. There still remains the *mens sana in corpore sano*. We may educate our children ; and very right too. Brains are the finest raw product of any country ; and the wealth of England is mainly the outcome of manufacturing raw products. But while we admit, and readily admit, that the battle of life is now fought with the brain rather than with thews and sinews, we still recognise the importance of health, of bodily vigour.

Where would British India have been if Clive had had to pass an examination before he could have been admitted as a writer to John Company? The physique as well as the morale are as important as the intellectual development. Exercise is as valuable as education. The Kindergarten school with plenty of play is the best training for the young. The playground is as essential as the schoolroom. Boys have games, and youths have athletics. Girls have what? 'Little girls must be quiet.' Certainly; but within reasonable limits. The girl needs a well-developed chest, vigorous limbs, and healthy viscera—just as much as the boy. And how is she to get them without exercise? You might as well expect her to be educated without lessons. The one is as much a matter of course as the other! If we wish to attain an end, we must take the proper means. How are we to have healthy women for wives and mothers if we cramp the physique systematically from early years? As a medical man the writer has a certain mistrust of the neat little girl who never soils her clothes. She is very nice to look at: her mother is naturally proud of her: she will do very well for a picture; but she is scarcely suited for the battle of life. She may be everything that is admirable; but she is scarcely a healthy young animal, and that is what she ought to be. She is angelic, and will soon be with the angels, is the forecast of the physiologist. It is part of the Divine scheme that the child precedes the grown woman. St. Paul said, 'When I was a child, I spake as a child, I understood as a child; but when I became a man, I put away childish things.' But he takes care to say that he did not put away 'childish things' until he 'became a man.' We have no wish to see adult children, nor old heads on young shoulders; either literally or figuratively. 'It is all very well to declaim in this fashion,' says the practical mother; 'I see all this quite clearly; but what practical solution of the difficulty have you to offer me? I cannot allow my daughter to grow up a tomboy. A girl is a girl, with a girl's prospects; and a woman's career before her. I cannot ignore that aspect of her.' Pertinently put, madam! When at the seaside the child puts away conventionality, and wanders about on the shore for hours with her little wooden spade, and digs, or helps her brother to build a rampart; and exercises her arms as well as her legs. In fact she is taking model exercise.

But a visit to the seaside is but an interval in the ordinary life : there is the home life. Well, the skipping-ropes are still available ; and may be used in a very confined space, or even indoors when there is no outdoor space, or the weather is bad. It surely has not yet been banished from the nursery. The goddess Hygeia smiles approval of it !

Then there ought to be in every house a swing ; not the outdoor swing, which is good exercise enough in its way, but a round bar of ash (or other trustworthy wood) suspended by cords—at least in all houses where there are girls. In the nursery, or in a passage, such a swing is easily put up. Little girls, half-grown girls, and even big girls, can all use such a swing with advantage. It ought to be in every house ; and, what is more, it ought to be in constant use. Why do I speak so strongly about the swing ? Because for many years I have been attached to a Hospital for Diseases of the Chest ; and one fact has been burned into my memory by my experience there, viz., the danger which underlies the flat narrow chest in any disease of the lungs, especially phthisis. The cramped lungs, the small chest-space, handicap the patient's prospects terribly. There is little or no 'spare' lung. Such lungs in health are barely sufficient for the needs of the organism : when reduced by disease, what is the consequence ? The patient dies before your face in a little time ; and all the resources of the medical art are powerless to rescue the sufferer from the doom before him, or her. Where there is an ample chest a large piece of lung may be rendered useless, and yet enough remain for practical purposes ; but with the small, flat thorax the case is very different. If, then, one has learned to dread an ill-developed chest, what is the practical outcome of such observation ?—namely, to insist upon the development of the chest to the uttermost during the period of growth. And this is best done by exercise of the arms. Not only is the chest so developed, but the pectoral muscles, the accessory muscles of respiration, are also developed ; and they have a function which is of importance when disease is on foot within the thorax. In a badly formed chest, where the breathing is embarrassed and there is much cough, the shoulders are drawn forward ; while with a good-shaped chest the shoulders keep their place, and the pectoral muscles then act usefully on the thoracic wall. To

develop the chest is not exactly to ward off pulmonary disease ; but it will enable the individual to make a good fight when disease has fixed on him. The chief subjects of phtthis are the strumous ; and in the strumous the osseous development is defective, and so we find the narrow, flat chest. Where there is such a tendency, it becomes doubly, nay, trebly necessary to do everything possible to develop the chest. Every child who inherits such a diathesis should be intimately familiar with the swing. The swing gives sober, proper exercise. The severest disciplinarian cannot condemn this swing, nor is such exercise romping ; and therefore it is essentially a form of exercise well adapted for girls—especially in schools.

The small, ill-shaped, imperfectly developed chest is a sorry possession for its owner. One afternoon I went to Acton Vale, where a football match was being played. There were many teams playing in various fields. A new road ran due north at right angles to the Uxbridge Road, dividing the fields in which the games were being played. Along the road were many quiet onlookers, mainly young men and maidens. What manner of men were these who preferred a quiet stroll in female society to the vigorous play ? They were young fellows with narrow flat chests, who in a few short years will have succumbed to pulmonary phtthis ; the sort of individuals of whom I have seen so much as out-patients at a chest hospital. Their doom was stamped on their physique to the trained eye. The broad-chested fellows were exerting themselves in a contest which tried their wind. The narrow-chested men were not fit for football ; their chests were too small ; no captain would accept them, if they volunteered. And so too, when the day of trial comes in the form of lung-mischief, those poor fellows will be found wanting. Many of them looked intelligent fellows ; good fellows, too, for the maidens seemed fond of them ; but all the same they will die early of chest disease. To be forewarned is to be forearmed ; and if the chest be developed by systematic exercise of the arms in youth, the individual may so be saved from the painful and premature death otherwise certain.

In connection with this subject a word may be said about the development of the chest by wind-instruments. If these are used to develop the chest before any disease of the lung is

on foot, they are good ; and the inflation of the lungs is useful. But if any disease, however small, be present, such taxation of the lung will be distinctly injurious. Wind-instruments are good as part of prophylaxis ; but are harmful as part of a cure.

Another great matter in the full potential development of the chest is its full inflation. This is attained by trying the wind—what a coursing or hunting man calls ‘a pipe-opener,’ when speaking of dog or horse ; that is, a sustained effort in which the lungs are kept distended with air for a considerable time. With boys this is attained by the rivalry of their games ; where each strives to gain a reputation for ‘pluck,’ or the courage or power of sustained effort. With girls it is difficult to find some substitute for such resorts of boys. For small girls the hoop is perhaps the best amusement, then battledore and shuttlecock ; though of course the swing and the skipping-rope can be utilised to draw out the chest by keeping it full of air.

It is indeed in girls rather than boys (except of course those girlish boys who avoid games and anything rough) that we see a distinct defect in their amusements as regards the development of the physique. But the more the need, the greater ought to be our readiness to see what can be done to remedy the evil. The case is more pressing where, for some physical reason, the child is crippled. Disease of the bones is seen rather in the spine and lower limbs than in the upper extremities. Where such disease exists the use of the swing is doubly necessary ; and a considerable proportion of each day ought to be given to such healthful exercise. Even when the chest is deformed by rickets, and the child is ‘pigeon-breasted,’ such exercise is not contra-indicated ; and every means ought to be employed to draw out the chest in early life, when the bones are comparatively soft and pliable.

Many children are prevented from taking a proper amount of exercise by some injury to the mitral valve of the heart ; the result of endocarditis occurring along with some infantile malady. Curiously (for no explanation can be given why it should be so) little girls are much more frequently so injured than boys. The existence of such trouble interferes with such efforts as are here advocated for developing the physique of the young ; and these unfortunate children can only indulge in exercise to a

limited extent. They are doomed to a sedentary life—if they are to be kept alive at all.

So far the encouragement of physical development has been discussed, and nothing been said of actual disease. Indeed, there is little of the latter present ; it is *in posse* rather than *in esse*, with the exception of constipation. Constipation is the accompaniment of a sedentary life ; whether it is an indolent child, or an aged dotard confined to the arm-chair. Very often a little fruit, fresh or dried, is sufficient to keep the bowels open ; but in other cases something more potent is required. Children dislike medicine because of its taste, and so ordinary laxatives are out of the question. Manna used to be in vogue ; and children can readily be induced to eat it. With many, however, its cost will form an objection to its use. The best and least objectionable habitual laxative for children is ‘hunting nuts’ or ginger biscuits, containing from one to five grains of jalap in powder in each. The jalap is inexpensive ; its taste is sweet ; while its action entails a minimum of pain, or griping. So constantly are the derangements of the health in childhood linked with a loaded condition of the bowels, that a dose of castor oil, with many mothers and nurses, is their panacea for all illness. In those unwholesome children who are allowed to habitually gorge themselves on toothsome food, such laxatives are essential to any approach to health. For such a boy as John Reed, whom Charlotte Bronte thus described in ‘Jane Eyre’—(large and stout for his age, with a dingy and unwholesome skin, thick lineaments in a spacious visage, heavy limbs, and large extremities) ‘he gorged himself habitually at table, which made him bilious, and gave him a dim and bleared eye and flabby cheeks’—even a few grains of calomel at times would not be amiss. Calomel, a generation ago, was much in use for children ; but, though the immediate relief given by it was unmistakable, it is not a proper remedy where a laxative is commonly and persistingly necessary. Calomel, too, would have made John Reed a better boy ; but a wiser mother, and an appropriate dietary and regimen, would have been still better for him. Of course, such unwholesome children are only found where there are weak and foolish parents, or guardians. Indeed, a great deal of what is undesirable in childhood is due to a lack of knowledge on the part of those

who have the care of these children ; and this is especially true of the drawbacks which lie in the wake of restricted exercise—for children will usually play to any extent permitted them. Culture is a great and admirable matter, and much to be desired ; but health is greater : and culture should never be encouraged at the expense of the health. It is the more necessary to insist upon this in the present age, when education is so highly prized. The School Board, with the best of designs, catches children young nowadays, and gives them the benefit of education. While this is no doubt good for the majority ; there is equally no doubt that in a certain minority the effects are undesirable. If the after-life of these little folks could be followed up, we should find, in a marked percentage of cases, sickness and an early death to have been the ulterior outcomes of that devotion to lessons which was so beautiful to witness at the time. A number are martyrs—of whose heroism no one ever hears a whisper outside the small circle of their personal acquaintances. The seeds of future disease are rather sown in youth than any maladies set up directly from a sedentary life. The brain may be cultivated to such an extent as to impair the bodily powers even in young children. Those whom the gods love, die young ; but this is not due so much to the covetousness of the gods, as to the want of knowledge, or the lack of purpose on the part of those who have the care of these potential cherubs. All young creatures, human and other, require a sufficiency of exercise ; and all suffer, in mind and body, who are not allowed that exercise which is as essential for health as food and drink.

CHAPTER II.

THE SEMINARY FOR YOUNG LADIES.

A SEMINARY is a place for seedlings—and is at once either a nursery-garden, or a habitation for human seedlings. In the seminary seedlings are looked after and trained. The nursery gardener has every motive to develop the physique of his seedlings; for on their physical merits of condition and excellence of form depends their price. There is no complication of the question in this, such as exists in the other cases: his way is straight and plain before him. Not so that of the human teacher and trainer. The excellences of the product in the latter case are far from being all visible. The physical condition doubtless can be observed by the eye—the state of health, the carriage, the hue of the cheek, the condition of the skin, and other noticeable matters; but the great matter of the training of the mind is not so patent. Indeed, parents are prepared to make some sacrifice of the physique in many cases in order to secure a good education for their children. The mental culture is the aim of human seminaries, the one thing desired; and this must be secured—even if bought with a price.

Bearing this fact in mind, and never losing sight of it, the question of the physical training in seminaries, and other institutions for the young, may now be discussed without any bias against the worthy persons who keep them; and who are by no means all of the type of Mr. Squeers of Do-the-Boys Hall. In fact the writer's personal experience of schoolmistresses is decidedly favourable to them. Nevertheless, there may exist a faulty system with honest persons working on it; and be matters undesirable in the modern scheme of education, especially in girls' schools. The training of the young in the dark ages consisted

in the youths of gentle birth going as pages into noble houses ; first, as my lady's page, then as the lord's esquire. For girls there was the household training under my lady's eye, dancing, riding, hunting or hawking. How much mental education went on in the mediæval time it is hard to say ; but Queen Elizabeth was familiar with several languages, and Lady Jane Grey, too, was decidedly an accomplished scholar. Still, it was only at a comparatively recent time that boarding-schools for girls came into fashion. At first schools were set up by those who, being reduced in circumstances, saw a living in teaching others what they had themselves been taught. Then came those who educated themselves purposely to have a seminary, and who hoped to succeed in life by the *éclat* with which they brought out their pupils ; whose accomplishments and behaviour were the warrant of their own excellence, which thus manifested itself vicariously in these resultant products. The great aim of the seminary was 'deportment.' The amount of knowledge imparted to the young ladies might be meagre, and they learned little which was of practical value ; but they certainly were instructed in deportment ; their behaviour in externals at least was exemplary, and their table manners all that could be wished. These youthful persons revealed in every movement that they had been to a boarding-school ; and so were marked off from the common herd of other girls, who had not had such advantages. Their parents were justly proud of them ; and loved to expatiate on all the advantages which were to be secured by a seminary training. But, beyond this deportment, these fortunate young ladies could only paint or play. Unfortunately both these accomplishments entailed much sitting ; and so the school-girl may fairly be said to have led a sedentary life. Their acquisition furthered the effects of a correct deportment, and the neglect of all rational hygiene left these paragons of seminary culture too frequently in a very indifferent state of health ; and it was no uncommon thing for the weaker ones to sink into a decline soon after their school days were over. Almost invariably these girls suffered from constipation, with all its consequential evils—and they are numerous. When the bowels are allowed to remain loaded persistently week after week, the contents of the pelvis are forced down bodily ; and such compression and displacement

interfere with their functional activity. In one case (the wife of an American physician) known to me, such neglect of the bowels has produced lasting consequences. The ovaries were forced down, and then glued in their unnatural situation by plastic inflammation around them ; with the result that the lady is at once barren, and the subject of unutterable troubles taking their origin in these imprisoned ovaries.

In speaking of this matter we must remember the psychical condition of school-girls ; and their instinctive repugnance to speak on such matters, or even to answer questions that might be put to them. Probably no one has ever attempted to estimate the sufferings endured by school-girls—borne silently through unconquerable dislike to say anything about them. Unless questioned kindly yet incisively, probably no one of them would say a word, no matter how much she might feel and think ; for of course she must have her own thoughts about her inward sensations ! That must not be forgotten ; and in her ignorance who can tell what groundless fears and apprehensions pass through her mind ? Her schoolmistress probably would not think inquiries into such matters (so essential to the health and comfort of women) as the condition of the pelvic viscera to come within her province. If a girl had a cold, or other obvious malady, then the schoolmistress is lynx-eyed, and takes great care of the invalid. But unless a girl is obviously in ill-health, and the doctor has to be sent for, no attention is likely to be paid to matters which every experienced physician knows to be of cardinal importance. Of course it is a difficult matter—a delicate matter—to enter upon a subject inseparably linked with the passions ; but there is a ‘healthy knowledge and an unclean ignorance,’ and it is as desirable to possess the one as it is to get rid of the other. The increased acquaintance with physiology, which now obtains among the more advanced schoolmistresses of the present day, is leading to sounder and more correct views on these subjects ; but it is to be feared that in the bulk of young ladies’ schools over the length and breadth of the land, the older regime obtains. Insistance in this matter is all the more requisite in that the growing organism of the school-girl has many demands upon it. There is growth, the waxing of the body generally ; there are the outgoings which puberty introduces, to

meet, in addition to all that the scheme of education requires. This combined load is often a sore burden ; and many girls leave school in broken health, to linger on a few miserable years till death brings relief to them. Parents sorrow over the decadence of a budding organism, whose earlier years had claimed and secured their loving attention ; but their grief is ineffectual. They deplore the course of study to which they had looked forward so eagerly. Their hopes and aspirations had led them to anticipate an accomplished daughter, of which they might be justly proud ; they realise that, instead of all this, they have got a broken-down invalid—a blighted woman.

How has this disaster come about ? Because, in their desire to give the girl all the educational advantages at their command, her preceptors had forgotten, or overlooked the physiological aspect of the subject. Allowing a sufficient number of hours for sleep, how is the waking-time spent ? Perhaps, once a week there is a dancing-lesson in the early part of the day, or a brief drill ; and though, of course, this is better than nothing, the exercise is scarcely sufficiently vigorous, or calling for that effort which, as we have seen in the preceding chapter (p. 6), is so desirable for the expansion of the chest. The morning is spent in lessons or at the music-stool. Then comes that funereal procession, the ‘crocodile.’ Gravely, soberly, discreetly, the young creatures—as full of life and spirits as the young fillies in the breeders’ paddocks, which caper and prance and gambol *ad libitum*, kicking their heels in the full liberty of animal enjoyment—set forth on their ceremonial excursion. They discharge the walk rather as a hateful duty than as a pleasant recreation, and return grateful that the task is over. They have had an airing—that is, they have been out in the air—but the exercise is little greater than that of the prisoner in the perambulator. No wonder these girls need little supervision from the attendant teacher, and that their deportment is satisfactory ; it requires great buoyancy of the spirits to be mischievous, or mirthful, under such circumstances. No wonder these girls are often irritable and even spiteful, cut off from all natural bodily enjoyment ; with disordered viscera commonly, and often deranged livers. Then they sit down again to their sedentary occupation. They are feeding the mind, true ; but the body is little cared for. The afternoon comes, along with

more study-lessons of all kinds ; and the same is the case with the evening till supper comes, and then prayers, after which they retire to bed. Is it matter for wonderment that, with every physical aspiration thwarted, too many of these waxing girls find their attention drawn to their bodily sensations, and that their curiosity often leads them to startling discoveries ? The mind is naturally perturbed by the inrush of the new emotions set up by puberty, and so is easily diverted in certain directions.

In boys' schools the moral advantages of plenty of physical exercise in suppressing certain predilections is fully recognized ; but with girls the whole scheme of education is, or rather was, on the devil's side. Much that tends to disaster, to wreck alike mind and body, goes on unseen, and therefore uncorrected. This is an imperfect world, doubtless ; but would it not be possible to correct some of its imperfections ?

Boys at school have their games—cricket, football, swimming, marbles, tops, and the long paper-chase, so excellent for developing the chest, but, like all good things, liable to abuse. Indeed, at the present day the athletics are, if anything, too prominent in the scheme of education ; and to be in the first eleven at a public school is a higher honour than position in the classes. That there are imperfectly instructed athletes may no more be denied than that there are youths who study too closely for the good of their body. But the most acid critic cannot say that attention to physical development is either forgotten, or under-estimated in boys' schools. The athlete is rarely a youth of impure thought or vicious practices ; that all recognize—parent, preceptor, and physician alike ; while the moody youth, solitary and sedentary, is too often steeped in unclean thought. Of the value of bodily exercise in keeping the mind pure in youths all are convinced ; but the value of exercise for girls from the same point of view is comparatively overlooked. Yet, perhaps, it is really even more necessary. The writer is not one of those who regard a young girl's mind as pretty much a moral sewer, or look upon a girl about to leave school as steeped in mental impurity ; but at the same time he does not and cannot ignore what is told him by others quite as competent to observe as himself. Some, for whose opinion he has the highest regard, have told him stories (he would fain think were unfounded) about what actually has come under

their own notices. Nor can one feel surprised that some young females give way to practices far from desirable, often simply because their minds are not occupied. It has pleased Providence to implant certain appetites in all—though not equally or to the same extent; and if in some these be inordinately strong, can we condemn them without allowing extenuating circumstances? What is there we cannot suppress. But what we can do is to point out to these unlucky persons the misfortune under which they labour; and to recognize the imperative necessity of helping them to struggle against temptation. We can point out how the gratification of these appetites degrades the mind, and impairs the health. If such a dark, unspeakable veil did not exist upon this matter, it might not be difficult to speak to the adolescent of both sexes on the subject. Some parents do address their children on this topic; others deplore their inability to do so. A girl is too often left alone to her own dark imaginings until a habit is formed which deteriorates her bodily health, while sapping her mind and robbing her of self-respect. It is a pity that our regard for the chastity of our Anglo-Saxon women—for which they are world-renowned—should have as its natural drawback a reticence which often leaves much evil untouched. There is no one in Protestant countries upon whom the duty can well devolve of addressing young girls upon the subject of their passions, and reasoning with them on the matter—pointing out the evils entailed by secret practices. In Roman Catholic countries the priest affects this office; but it may be questioned if this lies strictly in the way of his duty. The matter may not go the length of bodily disease; but certainly it involves some mental disorder and a concentration of the thoughts upon undesirable objects. There is no dismissing one set of thoughts except by instituting other thoughts in their place. The only method of diverting a girl's thoughts from her bodily sensations is, not by denouncing her as a monster; but by giving her something else to think about. It is a rule that works well with boys; while many think it succeeds with girls. The misfortune is that it is a subject upon which it is difficult to get some persons to reason. One thing is certain, and it is this: where the body is not exercised, the passions have more sway; where neither body nor mind are exercised, then the lust of the flesh rules. Nor can we wonder thereat. What sayeth Dr. Watts?

For Satan finds some mischief still for idle hands to do.' Certainly, too, idle brains offer him an opportunity : and many a girl 'walks arm-in-arm with the flesh and the devil,' who little suspects that she is treading one of 'the primrose paths that lead to the everlasting bonfire.' Still more would she be surprised if she knew that her secret ways are betrayed to the eye by outward signs—of which she has no suspicion.

Assuming, then, the soundness of the position that bodily exercise diminishes the force of certain appetites, it becomes possible to plead one more argument for more exercise for young girls. We know that a loaded condition of the bowels has an injurious effect upon the contents of the pelvis, which tends to force them upon the attention. The inference, then, is that if more bodily exercise were a part of the educational plan of girls' schools, it would be well in every way. Were a growing girl to have more physical exercise than is permitted at the present time, she would profit thereby in mind and body. Nor can it be truthfully asserted that this fact has escaped the attention of those who have done much for the higher education of women. Girls' schools have no playgrounds—more's the pity ; but the gymnasium is now to be found in many of the advanced schools, and will and must be found ere long in all girls' schools. It is not equal to the games of boys' schools ; but it is a great advance upon the 'crocodile,' and many girls are accomplished gymnasts, with advantage to their health. Indeed, the fashion of the present day is much superior to that of the past as regards bodily exercise for girls. First came croquet—a mild game, giving more fresh air than exercise. Then came the skating-rink, which gave excellent exercise ; but with the drawback of being carried on under a roof and in a covered building. Then came lawn-tennis. That the exertion of tennis gives rise to sprained ankles, and elbows, in sundry persons may not be denied ; but, averaging it out, it has been a great boon. It should not be played to the extent of overtaxing the powers, of course, just like indulgence to excess in anything is bad ; but, played in reason, tennis is capital exercise.

And at this point something may be said about the life of a school-girl during the holidays. That any attending school shall voluntarily work during holiday time involves a thirst for

knowledge for its own sake, which but rarely exists ; and when it is found is merely that 'exception which proves the rule.' Holidays are holidays, and are to be made the most of. Certainly ; and when girls get home and accompany their brothers on long walks, or boating excursions, or to lawn-tennis, or to the archery club, or out on horseback, the physiologist can only applaud. The medical man may shake his head at a 'tennis-elbow ;' but then that is after all but an incident telling that the tissues of one person will not bear a strain which in most cases is harmless ; and calling for no more than care and the inculcation of caution in the individual. It would be as rational to inveigh against horseback exercise, because now and then someone gets pitched, and is injured. In such case we advise a more trustworthy steed ; and speak not of the dangers of equestrianism, but of inexperienced riders and tricky horses, and suggest that the two be not found together. When a girl finds her elbow going wrong, she should be encouraged to cultivate some other form of exercise till the weak joint recovers ; and then to resume her tennis with the care taught by a painful experience. With holidays well utilised, and the swing and gymnastic exercise at school, the growing girl could cultivate her physique as well as her mind. How far she is in danger of becoming that horror of the starched dames who so highly over-estimate deportment, a healthy hoyden, is a matter which cannot be discussed here. What can be said is, that with more attention to the physique girls would have better health and purer minds ; and would be far less likely before they are well out of their 'teens to make the acquaintance of the gynæcologist than has been the case. For a more rational scheme of female education we must look to the lessons of the physiologist. If the time now given at many schools to Hallam's works—the most unsuitable of all histories for girls, however attractive for bearded men—were devoted to systematic exercise as 'blindman's buff' or to skipping-matches, it would be much better spent ; even if the deportment suffered for the time being. So says the physiologist ; but perhaps some, of more experience in controlling young girls, may have private information which may cause them to have some reserve about taking his advice. If so, again more's the pity.

CHAPTER III.

FINISHED !

WHEN a young lady has taken her last farewell of the finishing school, and the lady-superintendent becomes a friend and no longer a preceptress, she has her own opinions. One of the first outcomes of the new independence is commonly to give up all her studies, except her music practice and her drawing ; both entailing much bodily quietude. That her geography-teaching might fit her for understanding the newspapers, especially the foreign telegrams, and so make her a companionable associate for her father and brothers, is perhaps too much to expect from the bulk of girls. That her history-lessons might enable her to comprehend some allusion made in a leader, or some report of a lecture, seems almost Utopian. She acquires the feminine habit of running her eye over the births, marriages, and deaths ; the middle matter most interesting her as she looks to see if any young lady of her acquaintance has undergone the matrimonial ceremony ; and probably talks flippantly of the 'hatched, matched, and despatched.' But, after this and a glance at the Court news, her interest in the newspaper is exhausted ; unless there be some report of a bazaar, a ball, a horticultural show, or an archery meeting, in which she is personally interested. She has lost her old routine of school-life ; and has not formed new habits of study, or discovered new means of occupying herself usefully. If the incumbent can lay hold of her he converts her into a district visitor ; then she is not only occupied, but sees a good deal of actual life which enlarges her experience. But without some such motive 'to exert herself,' as her mother euphemistically puts it, she generally subsides into a life of fine-ladyism and fiction. She remembers how she hankered after some yellow-backed novel,

which her schoolmistress forbade ; and determines to take advantage of her new liberty to explore a certain quantity of fiction. So she sets to work in earnest ; joins a circulating library, and consumes novel after novel—like an intellectual glutton. She likes a stirring novel crowded with incident, and the more love-scenes the better ; and reads to see how it will end. She is without any aim at studying character : any analysis of character she probably regards as 'tiresome.' She is not critical as to whether the sensational incidents come within the range of probability or not ; and, 'if not actually true, might at least have occurred.' She has no views about novel-reading as an educational course ; and does not expect to be much wiser for her reading. Indeed, she prefers a novel which falls in with her own ideas—so far as she has any—and finds plenty in the ephemeral fiction which pours out over the land from the circulating library in such a ceaseless stream. Indeed, the young misses who constitute the main prop of the circulating library are exercising a most pernicious and injurious influence upon present fiction ; as both authors and publishers know well. Indeed, the young miss who likes something 'fast,' if not even worse, is at present too much the representative of public opinion as regards novels ; and the cause of the quantity of trash now printed. One authoress excuses her novels for not being what even she herself would like on this ground—'but then nothing else will sell' !

While thus engaged in the reading of the romantic episodes in the lives of her heroes and heroines, she contrasts with them her own eventless and colourless existence ; and not unfrequently sets a-going little affairs in order to give some of the desired roseate colour to her life : while at the same time she leads too commonly an indolent existence. If she belongs to the comparatively wealthy classes, she may enter a set who play tennis regularly : but there are thousands of girls and young ladies for whom such healthful amusement is simply out of the question. They live in towns with scarcely a backyard among the list of their acquaintances, much less a tennis-lawn ; and if they go out for a walk it is along streets, with the object only of a call or some shopping. One of two things happens usually under these circumstances—the girl either gets up a love affair of her own, and gives her family

a world of trouble, just as did her favourite heroines, or she lapses into a study of her own inward sensations. Lounging in an easy-chair, or even on the sofa, with a lewd novel for her companion for hours, the girl lives on from day to day; becoming more painfully conscious of certain ungratified physiological aspirations as the time passes along. So situated, she falls into evil practices (if she have not already learned them at an earlier date), which produce further mental enfeeblement, with the consequence that she sinks into a sensuous state of being. Her friends exhort her to exert herself; and bewail her lack of energy, with more or less of suspicion as to the actual state of affairs. Months roll on into years, and Miss Blank is accepted by her circle of acquaintances as a person of whom little must be expected. Perhaps an occasional ball will rouse her out of her slothful lethargy; and she suddenly exhibits an energy contrasting with her wonted indifference to what is going on. She probably exerts herself to be agreeable, and make a conquest; but a pleasant partner in the dance does not necessarily involve a potential husband, or a capable helpmeet. The rising hopes are damped; no suitor comes to woo: and she falls back into her habitual lethargy—soured and disappointed. Probably by this time she has become the subject of a female complaint—either some womb trouble, or some ovarian disorder. Beyond local painful sensations she has more or fewer of the following symptoms:—Dull pain and weight at the crown of the head, general sense of depression, with a tendency to lose her self-control and burst into tears. She is liable to attacks of palpitation at times; and has pain at her heart, or in her side. She has often a sense of nausea, and sometimes vomits; at other times the symptoms are mainly gastric, and the vomiting is so persistent that her relatives feel much alarm about her. She has a sense of weight and bearing down in the pelvis; and frequently has much hyperæsthesia about the bladder, so that the call to empty it is both frequent and imperative. She has uncomfortable feelings in her seat at times; and usually experiences pain either when at stool, or passing water. Few or more of these symptoms are present; and in addition to these there is usually a moist palm, which takes the colour out of her gloves. Often, too, she has cold feet. By this time her condition is one of great discomfort; and she fears to go to stool on account of the pain ex-

perienced ~~when the~~ bowels move. So she leaves her bowels to become loaded, and this aggravates the condition of the pelvic viscera. She feels ill, too; and is truly an object for commiseration. Probably her relatives become alarmed, and insist upon a medical man being summoned; who may, or perhaps may not, take in the whole of the situation. Possibly one or more of the friends try to give him their impression of the case—which will certainly not tell the whole tale. If he is familiar with such cases, he will insist upon appropriate measures, and give some bromide of potassium with sulphate of magnesia in camphor mixture, enough to get the bowels regularly, and even freely open; while putting a blister over her tender ovary. Warm astringent injections are indicated for the leucorrhœa; which should be used: albeit Anglo-Saxon women of all classes and ranks will abandon them if not sharply looked after; no matter how much relief they may derive from them. A little time is requisite for a cure; and the patient must co-operate loyally with the doctor in order to obtain one. If some modification be brought about in the patient's surroundings, a change may come over the spirit of her dream; and, a year or two later, the rather unhopeful spinster is a joyous, bustling matron.

Where the symptoms are mainly gastric, very often the sufferer is confined to bed by the weakness which results from the incessant vomiting; and her condition gives rise to a feeling of grave anxiety. Her friends are certain there is some mischief in the stomach, and even the medical man may mistake the case and call it 'gastritis.' The measures are directed to the stomach, and fail to give relief; because the seat of the mischief is not there, but elsewhere. The stomach is at one end of a nervous chain, and the offending organ at the other; just as pain in the knee is often found in disease of the hip-joint. The irritation is not experienced where the nerve-current commences; but is felt where it runs out in both instances, and so is misleading. The amiable young lady is going to die, all fear; and the doctor is nearly worried out of his life. A year or two later, on inquiry, it is found that the whilom invalid is in good health and spirits; her stomach is all right—and she is engaged to be married.

Now, while admitting that such a linked condition is due primarily to ovarian irritation, with its far-reaching consequences

after the manner above described, it would be grossly uncharitable, and unfair to womankind, to suppose that such are always the causal relations of the many-faced malady. It may have other sources of origin : but still it is commonly the outcome of the lazy life which has been described in the preceding pages ; and is one of its ordinary consequences.

The modern fashion of active exercise for girls is leading to rosier faces, sturdier figures, a more erect carriage and a more elastic step, healthier minds in robuster bodies among the young girls of to-day ; despite the neglect of hygienic measures at the boarding-school. Tennis was a great improvement upon croquet ; and the tricycle has found an eloquent advocate in Dr. B. W. Richardson. Starting off by saying that the pedal extremities do not appear to advantage, as a rule, on a tricycle, this scarcely constitutes a drawback which can weigh against the many advantages it possesses. Those who can afford a horse do not require a tricycle ; but for the thousands for whom the horse is as out of the question as a slice of the moon, the tricycle is a distinct acquisition. It can be obtained at a reasonable outlay ; is kept in good order at trifling cost ; and is never skittish, nor liable to take cold. It is a steed which is not apt either to cast a shoe, or break its knees ; and never runs away, except from carelessness on the part of its proprietor. It may be left by the door of the wayside inn unfed, without detriment to its energies ; and has never been known to kick a curious child. Mounted on it, a young lady can take an airing even when the roads are muddy ; and when she reaches a point from which a good view can be obtained, she can dismount and leave her steed with the best prospect of finding it there on her return, and that it has not strayed. Or, if she wishes to botanise, she can leave it to its own devices without misgivings. Such are its advantages ; and so far no warning voice has been lifted up against the tricycle as liable to lead to any bodily troubles. It affords capital exercise without militating against 'deportment,' and so deserves its meed of praise from a medical point of view.

Then, again, there is the boat and the oar—another pleasant exercise for those who can accomplish it. Unfortunately, only comparatively few places command boating facilities. A light boat, so as not to require too heavy a pull, carries with it no valid

objection; but too severe efforts might produce some displacement of the uterus.

Carriage exercise is still less within the reach of the many than horseback exercise; and is scarcely exercise except for the invalid who is unable to walk. Carriage exercise is included in a sedentary life, and is little more than an airing. When a lady can command a steed, then she has an admirable form of exercise at her disposal. Lord Palmerston was quite right when he stated that 'the best thing for the inside of a man is the outside of a horse;' and 'man' here includes woman. There are certain objections to be raised to equestrianism for ladies; but they affect a limited section only of the sex.

Then there is 'shanks' pony,' the individual legs of the owner. English women are great walkers, and get their reward. The proportion of female troubles in England as compared to the United States, is probably in inverse proportion to the extent of walking exercise taken by the females of the two countries. In America the ladies walk little, and uterine troubles are excessively common there; while in England the appeal to the gynæcologist is much less common, especially among women who are much on their legs out of doors. Indolence or inability to take exercise, from whatever cause, is one great source of female troubles. Consequently plenty of out-door exercise is a prophylactic measure of the highest value. It may no more be denied that a severe effort may displace a uterus from time to time, than that in walking over rough ground an ankle may become sprained occasionally.

A good long walk, the distance to be proportioned to the powers, ought to be a daily exercise with all young women who can possibly spare the time; or some equivalent exercise should be taken as an hygienic measure, to say nothing of the pleasure involved therein. By such a measure the bowels will be kept in order with a minimum of resort to laxatives; and this of course averts all the consequences of constipation. The effect upon the lower limbs is to strengthen them, and to develop the intra-pelvic muscles, whose relaxed condition is a common cause of the uterus falling out of its place. When these intra-pelvic muscles are round and full there is little risk of uterine displacement. Indeed, plenty of walking exercise is a great protection

against female troubles. There are cases where walking is rendered impossible in consequence of the pain it occasions, and then the aid of the gynaecologist should be sought; and after appropriate treatment by which the organs are restored to their normal condition, the patient can once more take walking exercise like her peers without discomfort.

Much has been said lately about swimming for ladies. It is a capital exercise, in which the lower and upper limbs are equally thrown into action; with the resultant good effects just described. The cold water is a bracing tonic to the pelvic viscera, and as such does good. It is a matter for question how far many girls and women should bathe either in fresh or salt water before breakfast; and probably even in July and August many would do well to postpone their dip till eleven o'clock. Certainly the morning dip should not be taken on a perfectly empty stomach; and a tumbler of milk, either alone, or warm with some of the many malt-foods now in the market mixed therewith, should always be drunk before setting out for the bathing-machine. (No alcoholic stimulant should be taken before entering the cold water, though some may be indicated afterwards if the reaction be feeble, and the resultant glow slow to make its appearance.) As to the use of the cold hip-bath and the douche, they are of the greatest value to those who perforce must lead a sedentary life—whether they like it, or not.

Nor would it be just to suppose that young women always lead sedentary lives of their own free-will. Many a one does so for an excellent praiseworthy object, viz., to solace the weary hours of an invalid sister, or brother; to wait upon an aged parent; or as companion to an indolent lady for home and salary. Others again spend hours at the chess-table, the card-table, or other indoor game, when they would infinitely prefer to be leading an active out-door life. Women are given to self-sacrifice—the nobler of them; just as the ignobler are given to self-indulgence: and both suffer for it. Clifford Allbutt, M.D., F.R.S., has drawn such an exquisite picture of the selfish 'hysteric' and the unselfish 'neurotic' (who are frequently and most unjustly mixed up together), that it is worthy of quotation. He writes ('Visceral Neuroses'):

'Take an hysterical person, man or woman, in its common and,

so far, proper sense; take it to mean a person of feeble purpose, of limited reasons, of foolish impulse, of wanton humours, of irregular or depraved appetites, of indefinite and inconsistent complaints, seeing things as they are not, often fat and lazy, always selfish; or, to take it in a less degree, one capricious, listless, wilful, attractive perhaps, yet having always the chief notes of hysteria—selfishness and feebleness of purpose; and if such persons complain of globus, of palpitation, which is never perceived by the stethoscope, of sleeplessness, of which the nurse has no record, of dyspepsia which does not lessen the labour of the cook, of pains which never flush the cheek; and if such persons have or have had anæsthesia, unreal epilepsy, unreal syncope, unreal palsy, unreal cramps, then set down such a person as hysterical; but forget not nevertheless to cure her mind and body. Such a patient is, no doubt, a member—a degenerate member—of the neurotic family; but it is almost with indignation that I repudiate the application of the adjective to the nervous sufferer whom we may call the neuralgic member of that group. Why, gentlemen, my neurotic patients, if I may indicate them by a name, are almost the best people in this wicked world! Rarely endowed with the capacity, endurance, and profounder imagination of the greatest, they form a large number of those in the second rank, who are the salt of society.' Having drawn a beautiful life-like picture of a neurotic man, he goes on:—'The limbs are small, but often very sinewy; such persons are as active as birds, and the absence of fat in their muscles often gives to these, in states of health, the quality of hardness under the hand. Their conversation, again, is lively and voluble, often keen and brilliant, but impressionable rather than imaginative; you may generally notice in them, too, some little blinking, twitching, or tattooing trick which quickens as thoughts and words flow faster. Usually, such a patient does not readily come to you; he is brought, half reluctant, by his wife or friends; he says apologetically, he is an old dyspeptic, and you can do him no good. He has visited all the springs, and half the doctors in Europe; and he lays a bundle of old prescriptions upon your desk. Once agate, however, his story will be a long and minute one; but never maundering, wandering, or whining. His companions will tell you that he is subject to great fluctuations of the animal spirits—

gay, even fascinating in society; brisk, orderly, and thorough in business, but at home dejected or fretful. He is a small eater, a light sleeper, and a worn worker. These persons are the heirs of every true neurosis, from insanity to toothache; and on the whole, when we consider the infinite perturbations of inter-marriage, it is surprising how true they run, or how clearly you may detect the neurotic strain in mixed descendants. Of their visceral neuroses I shall have to speak beneath; and would only say now, that in both sexes of them migraine, stomach-ache, and windy colic are frequent and eminent, and receive the name of dyspepsia; and in the women are added to these uterine and ovarian neuralgias and hyperæsthesias. To call these suffering women of the neurotic type hysterical is to confuse all due acceptance of names, and, what is worse still, is to confuse the real relations of things. The neurotic woman is sensitive, zealous, managing, self-forgetful, wearing herself out for others; the hysteric, whether languid or impulsive, is purposeless, introspective, and selfish. In the one is defect of endurance; but in the other defect of the higher gifts and dominion of mind.' —(Gulstonian Lectures, delivered before the Royal College of Physicians, of London, 1884).

The selfish hysteric is lazy, and to her imaginary maladies adds all the real consequences of an indolent life. The unselfish neurotic may become the subject of some uterine disease, for the relief of which rest is essential; and then, too, she leads a sedentary life; or it may be, as Dr. Allbutt goes on to relate very eloquently, she is believed to have some uterine trouble, which is made the centre-point of her malady, and treated as the cause of all her trouble until she has 'uterus on the brain.' He delivers himself as follows on these persons:—'These are they who form a great part of the women who are caged up in London back drawing-rooms, and visited almost daily for uterine disease, their brave and active spirits broken under a false belief in the presence of a secret and overmastering local malady, and the best years of their lives honoured only by a distressful victory over pain.' On this matter I have preferred to use Dr. Allbutt's own words rather than make statements of my own. That there is unreal, as well as real uterine disease must be admitted; and many a woman is the victim of a diagnosis which is like an

inverted pyramid; and where the womb trouble—such as there actually is of it—is regarded as the cause of the general condition instead of the result of it: and also an identical treatment, which takes the womb first and subordinates all else to it; instead of improving the general health, in which the uterus shares, and by which it profits. Of course, what is the real condition of affairs in each case is, proves a matter for the patient's medical advisers; but certain it is there are numerous women condemned to a sedentary life, who suffer therefrom—whether their uterine disease is real or unreal. Many a woman, too, leads a sedentary life from self-denial; and of course the resultant consequences follow, just as much as in the case of the selfish hysteric. Disease knows nothing about motives; and Nature is deaf to moral arguments, and knows nothing of extenuating circumstances in her actions.

In many instances a young woman is ill—because her mind rather than her body is morbid. Many a young woman in a morbid mental state is cured by a monetary reverse; she recovers her health on losing her fortune, and in the struggle for existence becomes well and strong. A great deal of illness is a sort of halo worked up around a monotonous existence; this leads to a life of mental and bodily idleness—where the bodily trouble is linked with the state of the bowels, while the mind fixes itself upon the womb.

PART II.

Adult Life.

CHAPTER IV.

THE CLERK.

So far we have been but little concerned with troubles resulting from a sedentary life in the male. The schoolboy is as restless as a panther in its cage, when he is confined to the house by bad weather. The stronger he is, the more he throws himself into athletic pursuits, and the greater is his ambition to distinguish himself therein. At all public schools for boys bodily exercise is made a primary consideration; while, at the Universities, to row in the 'Varsity eight is a greater honour than to be a Wrangler. But there are many young men for whom bodily exercise is largely impossible; they must earn their bread, and to do so must enter an office. The enormous commerce and manufacture of England involve houses of business, where myriads of clerks are cooped up all day conducting the necessary correspondence. About ten every week-day morning armies of clerks pour into the business parts of London, and other large towns, in a steady, unbroken stream. That morning walk is their best bit of exercise. Many of the more indolent take the 'bus, or the train. These last are unwittingly getting themselves ready for the acquaintance of a medical man. Then, again, in the evening they quit the office and go—where? Some take a prudent view of the matter, and walk home; but others have other and different ruling motives. One has to meet a 'chum,' and the pair adjourn to a restaurant, where they dine; and then retire to the smoking-room, or go to the theatre. Here, again, they meet the same bodily quietude

and befouled air in which they spent their working day. After the theatre comes some supper ; after which they hurry home, usually preferring some conveyance to their legs. Or the young clerk is musical, and he gets home to have an evening with a musical set. [Now, having no taste for music, the writer may be prejudiced somewhat against musical evenings ; deriving no gratification from the sweet sounds, he sees the subject in its hygienic aspect solely. But of musical evenings more anon.] Or he is wounded by one of Cupid's arrows, and is desirous (very naturally) of enjoying the society of his charmer ; so he hurries away to get his tea, and then to visit her at an hour in the evening when it is not becoming for young ladies to be out of doors—at least, for a great portion of the year. (Here the so-called lower classes enjoy a distinct advantage over those socially above them.) He spends a quiet evening, and his conduct is very praiseworthy in all its aspects but the physiological one. Or he enjoys chess, or a hand at whist, and also spends a quiet evening ; but he may play at more gambling games, which equally keep him out of his bed breathing an impure atmosphere. Or he may be fond of billiards ; and though here he gets exercise, the air is distinctly objectionable. He gets enough and to spare of a sedentary existence in the day ; he does not want more of it in the evening and early night. In all these cases he would be much more likely to enjoy life in its best sense if he went to bed early, and had so many more hours of his cool bedroom.

The married clerk, as a rule, leads a much more sanitary life than his bachelor brother. His salary is not great ; and he and his spouse have scruples about wasting money, in gas and coal, by sitting up unduly long. In fine weather, probably, his wife, pleading that she has seen nothing of him in the day, wishes him to accompany her for a stroll or to make a call ; and so he gets some little extra out-of-door exercise. On Saturday half-holidays he usually wheels the perambulator, and so gets some exercise which is very good for him.

The clerk is very often not a very strong youth, unfit for hard work ; very frequently there is a history of consumption in his family. The light work of an office is about all he is physically equal to in life ; so he spends hours of every day in an imperfectly ventilated office, terribly afraid of draughts. He has little exercise,

whether he works hard or slack at his vocation. Of course, he becomes constipated, and very often bilious as well. Then he becomes dyspeptic, and does not feel equal to any exertion; so that he positively has no invigorating exercise, unless it be a quiet stroll on a Sunday. But his religious convictions will sometimes interfere with such a practice, and he attends church with much regularity. If he be a narrow-chested young fellow, he is almost certain to escort the ladies to church; which is much more to his mind than a country walk. He attends worship again in the evening. The ladies look upon him as an exemplary young man; the physiologist thinks he is fitter for the next world than this. He is a good young man—no one calls that fact in question; but he is forgetting his body and its claims upon him too often. If he got up early and had a good walk before attending church, he would be all the better for it; and a good quantity of stored-up oxygen in his tissues would come in well to eke out the indifferent air of the church.

And this it is which all persons whose lives are largely spent indoors should fully realise. When out of doors oxygen is stored up in the body for the time of need. Look at the agricultural labourer, and compare him with the town artisan or the mill-hand. Look at his stature, his thews and sinews, as he follows the plough; or at the lusty reaper bending over the waving corn. Contrast him with the dwarfed Sheffield grinder, or the stunted denizen of Whitechapel. See the difference! They all live about equally well as regards their food; they are housed pretty much alike. Their food is limited; and their bedroom cubic space is, in each case, far below what is desirable. But the one spends the day in the open fields, storing up oxygen; the other spends the day in ill-ventilated rooms—and, if ventilators were provided, would probably stop up every one of them for fear of a draught—and so never can take in any spare oxygen. This is the lesson for the office-clerk. He has small opportunities for taking in oxygen, and ought to make the most of them. He is living under circumstances unfavourable to his health, and ought to take precautions accordingly. He ought to see that in the hours at his disposal he stores up as much oxygen as he can for his needs when in an atmosphere where the rebreathed air is short of ozone (active oxygen). Just as he spends his holiday in the country and feels

all the better for it; so he should make the most of his outdoor time to store up oxygen for his indoor hours.

This is a matter of far more moment than has been hitherto thought before the day (not far off) when Voit made the discovery of the fact that we can, under favourable circumstances, absorb oxygen, and store it in the tissues for use when we are placed where the supply of oxygen is defective. A man devotes time to his meals—he ought also to devote time to storing up oxygen; and so he will, when he knows that such storage is feasible. As it is, he is in utter ignorance of the fact, and only takes exercise because he believes it is ‘good for him;’ but has no more defined views on the subject. If he really understood the subject, he would sedulously cultivate the air in every way, and at every opportunity.

Ignorance often leads man (and woman too) into ill-health. Just as the young clerk does not know about ‘spare oxygen,’ so does he know nothing about the importance of eating fat. He knows he does not like fat; and cuts off every bit from his meat as scrupulously as if he were performing a religious duty. He does not conjecture that he is doing himself any harm thereby. He knows he does not like it. He has probably heard fat spoken of disrespectfully; even the cat turns from fat with disgust. What he does not know is that fat is essential to healthy tissues; until he is threatened with consumption and is ordered to take cod-liver oil. There is nothing magical about cod-liver oil; it is merely the most easily digested form of fat. Nothing more! Nevertheless it has rescued many a life when threatened by pulmonary phthisis. When the oil is taken, enough of fat is furnished for healthy tissues; and so the lungs benefit, and the spread of the disease is arrested. Fat, in some form or other, is essential for the building up and repair of the structures of the body; and when fat is carefully eschewed for a long period of time, there is a liability to the formation of tubercle—greatly increased if there be a family history of consumption. But young people know nothing of the requirements of the tissues, and follow their own devices. Like enough they feel no inclination to eat fat, possibly loathe it; and if they do eat it in the shape of a piece of meat-fat, their stomachs are upset thereby. Very possibly; but, all the same, fat is unavoidable—in some form—if the system is to con-

sist of healthy tissues. If he cannot eat fat in bulk, let him try it in some (to him) less objectionable form. Can he eat butter, especially if spread thin on thin slices of bread? Often butter can so be taken, when it is loathed when spread thick on a hunch of bread. Then when thoroughly mixed with farina, it is readily taken, as in well-buttered mashed potatoes; or in the tins of 'baked beans' from New England, where the fat of bacon is mixed so finely with the farina of the bean that it is invisible to the eye and imperceptible to the palate. Or, again, can he take milk or the attractive *Cremor Hordeatus Loefflundi*, the most exquisite food; or, if this be beyond his means, he may try the more economical *Oleobyne* about an hour after a meal. In all these cases the fat is so finely divided as to be readily digestible. Or he should learn to like a milk-pudding, and mix some butter with it on his plate. This last is an excellent measure. However he solves the difficulty, fat he must take; if he wish to escape the fate before him.

The office-dweller must have some opportunity of storing up oxygen at some time in the twenty-four hours. How and when he has to get it is his business; and, fortunately, not mine. He must make the opportunity. It is for me to point out, and insist upon the fact. In the same way about the urgency for fat in some form; only there special knowledge must point out to him the directions in which he must go.

From this point of view the clerk is a man who is specially liable to become the subject of pulmonary phthisis; partly by some inherited tendencies—which may, or may not exist, but which do commonly exist—partly from the life he leads. Over the first he can exercise no control obviously; but his family history can, and ought to put him on his guard. Where such tendency exists, it becomes doubly necessary to take every precaution. But over his individual life he can exercise a great deal of control. If he takes pains every morning to take in a store of oxygen, to help him through his office hours; and on leaving the office again seeks more oxygen, he will be a healthier and a happier man. If he also learns to take fat in some form, he will ward off much pulmonary phthisis—to which he would probably otherwise succumb.

CHAPTER V.

THE MACHINIST.

THE seamstress, or needlewoman of the past has, since the introduction of the sewing-machine, given way to the machinist, when we speak of the class of women who are specially connected with the making of our raiment. This class of women includes the maker of underclothing, the tailoress, and even the women who sew the uppers of boots. They are a large class ; and on the whole a needy class, inhabiting ill-ventilated rooms, and living poorly. They also are liable to the maladies linked with a sedentary life ; that is, derangements of the bowels as a persisting trouble, and pulmonary phthisis as a danger to life.

The machinist works hard, for her wages are small. Late and early must she be at her machine. If she works in some factory, then at least there is the morning and evening walk to and fro, betwixt her home and her factory. Where the work is done at home, then there is little prospect of any walk, and time is too precious to be spent out of doors ; unless it be bringing and carrying the work-material. Her work entails a more or less cramped position, which is unfavourable to the abdominal, and even still more the pelvic viscera. The bowels almost invariably are allowed to become constipated, and flatulence is commonly present. This load in the bowels tends to force the womb down, and to produce leucorrhœa. This last is the bane of all working-women who live indoors. The cook, inhabiting a warm area, is liable thereto, and still more the laundress who works in an atmosphere at once hot and damp. The machinist, with her sewing-machine, is specially subject to it, as part of a condition set up by working the treadles of her machine—a fact which is well recognised, and on account of which many girls give up machining ; though others do not

much object to it. From the action involved (especially by the double-treadle machines) these women are liable to local excitement, which leads to a congested state of the genitalia, with recurrent discharges; and in time to a persistent leucorrhœa as well. Then comes a certain amount of irritability of the bladder, which makes the call to void its contents sharp and imperative; while one or other ovary becomes congested.

There is a condition in many respects similar in its symptoms to that described at p. 20, and requiring the same line of treatment; but with the addition of abandoning the occupation for a time. Many who know these facts would fain give up the machining, if that were possible; but they cannot exchange their treadle for a hand-machine—as do ladies who discover the drawbacks of the treadle-machine. The poor machinist must work on, and meet the disadvantages of her position as best she may. But the effects upon her health are very serious, and she has both bad health and a prospect of a not far-distant grave. Only those familiar with the facts of the life of the machinist know of the severe physical drawback to that otherwise excellent invention, the sewing-machine. The amount of work that can be done by a double-treadle machine is such that it must be retained. A hand-machine is without this drawback; but then its use would entail starvation. When purchasers exult over the cheapness of sundry clothing, and wonder ‘How ever it is done at the price!’ they do not realise at what cost to the poor machinist this cheapness is attained. The seamstress was at least exempt from this trouble, if not free from the other maladies which overhang a sedentary life.

And now as to another matter, viz., pulmonary phthisis, once more. A sedentary life is a means of inviting phthisis. Many a life is lost through a confined existence which would have been preserved if the individual could have lived under other circumstances. I remember well a hale, robust man, now in middle age, who some eighteen years ago was threatened with consumption. He had not exactly a bad family history, but there was a certain amount of phthisical taint in it. He went up to London, where he got an appointment as teacher in a Blind Asylum. He gave his mind to his work, and after a while he broke down with lung-symptoms, and was sent home to Westmoreland. With plenty of

fresh air and milk he soon threw off his troubles ; and as both he and the authorities at the Blind Asylum were desirous that he should return there, the attempt was made. In a short time the symptoms returned with unmistakable aggravation of the condition of the lung ; once more he was sent home, but this time to stay permanently. Again he soon became robust, stout, and strong, and, finding an outdoor occupation, the improvement continued ; and now he seems as if much more likely to die some day of apoplexy than of phthisis. It is no isolated opinion that in certain families those who migrate to London will die of consumption, while those members who remain in the country escape.

The town-dweller not only loses the fresh air of the country when cooped up indoors, but the befouled air he, or she breathes is laden with mechanical irritants. Particles of wool or cotton are constantly floating about in the air, and are taken into the lungs at each inspiration. The stone-dust of the needle-grinder, of the mason who does fine hewing, of the biscuit ware of the potter, the dust of the feather-dresser, or of the miller, are some of the well-known causes of pulmonary disease, set up by fine particles taken into the lungs with the breath. The tiny mote, which can be readily detected if a ray of sunlight be allowed to penetrate some chink in the window of a darkened room, is drawn into the air-tubes and irritates them. If there be a good constitution, this irritation produces little or no effect ; but if the lungs are by inheritance delicate, then little by little, bit by bit, the irritant sets up local inflammation ; and this goes on until a large portion of the lungs is implicated in this broncho-pneumonia, or inflammation of the lung-tissue around the fine air-tubes. There are already in action many factors which go to foster a general condition favourable to phthisis ; and then, in addition, comes the mechanical irritant. When a phthisical patient is sent away to the seaside or other health resort, among other advantages he or she breathes an air not only fresh and pure chemically, but also free from mechanical irritants.

Of course there are, too, chemical irritants which make many occupations unsuitable for persons liable to phthisis, and these may co-exist in the air in many workrooms, or rather rooms in which work is done. In the tenements of the poor indoor worker there exists an atmosphere which can be tasted, and smelt as well

as seen (in its floating particles in a sunbeam), and which is distinctly injurious to those who work and sleep in it. There are all the drawbacks of the sedentary life as well. In certain trades and occupations the duration of life is notoriously short in consequence of disease of the respiratory organs set up by fine particles drawn in with the breath.

In woman especially are all these evils seen aggregated, while she has pelvic viscera which render her peculiarly liable to disorders associated with a sitting posture. She sits, too, on either a wooden or a padded seat, and there is room for hope that the introduction of perforated wooden seats will do some good in allowing of more ventilation than is permitted by the solid seat. In all cases where the sitting posture has to be maintained for long hours together, the perforated seat seems likely to lessen some troubles, especially with women. Then, again, there is no possibility of her adopting any of those local measures which brace up the pelvic organs that are spoken of at p. 21. Even if her scanty earnings could procure the requisites, there is no privacy for her in which she could carry them out.* The machinist must toil away, bearing as best she can the heavy burden of her lot, and not only that, but submit to further sources of weakness which are entirely unavoidable; only there exists for her no practical road out of her dilemma.

* As a hospital physician, this matter is rather a burning one with me. At least half my phthisical patients suffer from leucorrhoea, but there exists no room whither the patient can retire to carry out the requisite measures. Nor have I been able to hear of any hospital in London, or out of it, which has such a retreat.

CHAPTER VI.

THE GOVERNESS.

AGAIN we see a form of sedentary life on the woman's side. Woman may be 'the empress of the domestic hearth,' and even George Eliot has said, 'Woman's sphere is confined to the four walls of her house—she should only be in electric communication with the world outside through her husband.' This is all very well; but woman needs exercise just as much as man; and in the decay of the Roman empire the physique was maintained by the care taken of the health of their women. In America we can trace much of the lack of endurance—which Allbutt says is the weakness of the neurotic (see p. 26)—manifested by the present town-bred men, to the indolent habits of the past generation of American women. In all classes of life it is the same: for there was a strong wave of opinion passing over the Western Continent during the early part of the present century that women should not work; and men worked for them. But exercise is needful—and healthful it has been found.

The lot of the governess is not so hard as that of the machinist; but then against this can be set the fact that the governess has some education, and her feelings have not been blunted by persistent contact with squalor. It is part of the Divine scheme that human sensibilities can be deadened by their surroundings; it is a merciful provision! How could persons allow themselves to sink into squalid surroundings if they retained their pristine sensitiveness? It would be impossible. But as the senses deaden, so the mind blunts; and the person who has seen better days often drops into poverty and its belongings, growing callous to what was once intolerable. For those who have not known better days the conditions under

which they have been brought up do not seem unbearable; and the lot is not so harsh to them as it seems to others reared differently. If their surroundings become utterly distasteful to them, they struggle out of them into conditions less disagreeable. Such are the conditions under which there is a constant moving up and down in the social strata; some falling, some rising. The governess, if a lady—by which is meant that she has been reared among the amenities of life—finds herself too frequently in an environment which is anything but healthful for her. Perhaps she has not contemplated being a governess, and has not thrown herself into her school-work with energy; and consequently, being but a second-class teaching-article, has to take a second-class position among the workers in life. She has had a painful experience of the value of her accomplishments, and the difficulty of finding a situation; and, having secured one, she exhibits a limpet-like attachment to it, with all its hardships. She will not face the difficulties of seeking a new engagement, come what may.

Her weakness is noted by the lady of the house, whose instincts may be commercial, and who believes in getting all she can for her money; so she keeps the governess in a state of perpetual employment—it being a mercy if she includes in this sending her out with messages, however distasteful this may be mentally. The poor girl is kept uninterruptedly hearing various lessons, doing geography-lessons, practising for music-lessons, superintending sewing, etc., from morning to night. Staid and decorous she takes the young ladies out for a formal walk, when their 'deportment' must be considered, and the young ladies taught to walk properly—neither to show a vulgar curiosity in staring at anything, nor to splash themselves with mud. The worn governess with her charges is nearly as sad a sight as the 'crocodile' itself! Then, instead of a walk by herself in the afternoon when her pupils are being taken somewhere, she is asked by the lady of the house to mend some lace for her. Still in her chair, no healthful exercise for her, she struggles on. Then, when left to herself at bedtime, she sits up writing her own letters; or may be preparing next day's lessons on a subject with which she is not particularly familiar. So she pores on, and begins to find herself troubled with severe headaches in the

evening, almost disabling her. She does not like to complain for fear the lady of the house might think her delicate. Mending that lace has so tried her eyes! She applies furtively to the family medical attendant, and well for her if he is cognizant of what is wrong with her, and says, 'You must have your eyes looked to, my dear.' Then she begins to realise that her headaches have certain relations to things that 'try' her eyes. She goes to a competent oculist, who probably tells her something of this kind: 'You have two eyes, miss; but they are not quite a pair. You are constantly straining your right eye—it is the right side of which you complain—to make it see with the left; and the strain to get the accommodation requisite is the cause of your headaches. You must wear glasses: glasses with different lenses so as to make the eyes a pair, and then you will be free from your headaches.' The idea of 'specs' is not especially attractive to a rather plain governess, whose prospects of relief from drudgery by matrimony are not very brilliant; but she gets the glasses, and finds that she can use her eyes without the old headaches, and is thankful accordingly.

People who have to work for a living cannot afford to be ill. As the wild animals thrust out from among them the wounded and the sick, so humanity builds refuges for the maimed and the incurable, and puts them out of sight. Even the sight of their helpless misery is unpleasant; they must be hidden away like the family skeleton in the cupboard, or maybe in the lunatic asylum. So the governess realizes that she cannot afford to be ill; and when feeling keenly the need for rest, has to put on a smiling face and read to Miss Blanche, who is in bed with a sharp sickness, the result of over-indulgence of the palate at an entertainment the evening before.

Not only does the governess experience all the outcomes of a sedentary life in its effects upon her health, but she has troubles which are peculiar to herself as one of the class of teachers. In a very clever essay, 'The Question for Rest for Women during Menstruation,' by Dr. Mary Putnam Jacobi, this learned lady says, 'It is very noticeable in women, that, as their characteristic bodily deficiency is lack of muscular strength, so their characteristic mental deficiency, taken as a whole, should be lack of power of attention. The very highest degrees of sustained attention have

rarely been attempted by women, while the lower degrees, necessitated by the exigencies of every-day life are frequently followed by a collapse of nervous energy that seems perfectly unaccountable when we consider only the amount of work accomplished, its severity, or its difficulty. (If, however, we should consider *absolutely* the amount of work requiring sustained attention that is performed by women, we should find it to be immense.) From whatever point of view we look, we find indeed the *difficulty* of the work bears no kind of proportion to its effects upon the health of women. But they are much more dependent than men upon their degree of interest in their work, for the reason that in proportion as the work is interesting does effort become involuntary, and requires less deliberate exercise of volition. Very hard work, that thoroughly excites the sympathies, may be accomplished with ease. This is of course true both of men and of women. But it is very much more true of the latter, that simple, continuous work, which is either indifferent or repellant, will, if pursued for a long time, be followed by a "breaking down" in health.'

By the light of this woman's opinion about woman, how does the governess's position look? What interest has she in half that she has to do? When herself feeling that urgent need for rest at certain periods, which Dr. Jacobi* says is essential for many women, the governess has to read to the sick child; is there not here the 'deliberate exercise of volition' in action? Is it any wonder that some of these harassed women tell in the consulting room at times stories of the most harrowing character? Their sufferings can only be breathed to another alone, and to one who is entirely sympathetic; they could never be expressed to an unsympathetic employer, who could see in them nothing more than pleas for lessened work—and who would turn to them a deaf or, even worse, an unbelieving ear. The load of bodily suffering which governesses bear unspoken is only known to those who are privileged to enter into the arcana of a woman's

* Her final sentence runs as follows: 'It remains true that in our existing social conditions forty-six per cent. of women suffer more or less on menstruation; and for a large number of these, when engaged in industrial pursuits or others, under the command of an employer, humanity dictates that rest from work during the period of pain be afforded wherever practicable.'

mind. The very culture which enables her to take a governess's post but increases her susceptibility to such mental suffering as well as bodily pain. Her refinement aggravates her misery, and, unless she can blunt down, no wonder if sometimes she finds herself in Bedlam, or gets out of her troubles by suicide; or if of another mould, she tries to escape her lot by marriage with any man that can furnish her a home, however humble; and if spoken of disrespectfully as indiscriminate in her choice, can we wonder that she is not fastidious? Let us try to realise her position, and then see how life would look to us! 'Marriage is but an episode in the life of man; it is the whole life of woman.' When a woman links herself to a man, she has to share his lot. Her life is what he makes it. She rises with him; she falls with him. It is at times a desperate choice. Do women not know this? But at times a woman with her eyes open takes the desperate resolve. Why?—because her lot is so intolerable, so utterly beyond her powers of endurance, that in despair she will risk anything. Her bodily health is 'breaking down,' she feels it: her resolve is undermined and sapped; she is worn out in mind and body alike. She has become reckless. God help her! But cannot man, and more still woman, do something for one thus overwhelmed by the dark waters?

CHAPTER VII.

THE INVALID AND HER COMPANION.

THESE are two linked creatures, usually widely different, whose mode of life may now detain us a little while. They are both objects of sympathy from a hygienic point of view. If at times one or both are rather repulsive, allowance must be made for them. The life they lead is scarcely one to bring out the Christian virtues; or rather it is—and also the lack of them! The one is the invalid lady; the other is her hired companion. The latter often may thank her stars if she does not also become an invalid. At other times the lady herself is rather the object of our sympathies. Frequently they are unequally yoked. It is not always the one from whom one would expect it which shows, or gives out sympathy. (An educated nurse once strangely interested me in her account of how widely different were the respective attitudes of nurse and patient in different cases. Some patients, though in much suffering, did not take in, so much as give out sympathy; while others, not nearly in so much suffering, absorbed sympathy. The stock she acquired from one patient was absorbed by the next.) The two spend their days together, and in mind and body in time they approach each other. The invalid may have a companion, either because she herself desires an associate, or because her friends deem it undesirable that she be left alone, and so provide her with a companion. Their mutual position will largely depend upon circumstances. (Sometimes the invalid and her companion are friends, and the latter devotes herself to the former. In the present consideration this last association will not be reviewed. To take it at present would hamper the treatment of the subject by complicating it. What is desired is to throw up in distinct outline the sedentary life enforced on one woman by the

state of her health; and to contrast this with the effects of a sedentary life upon the health of the other.)

A lady becomes an invalid, perhaps, because of her lungs, or her heart, or her stomach—possibly from her liver, or more commonly her uterus. She is incapable of taking much exercise, and not having relatives, or these being unwilling or unsuitable, or she does not care for any of them to reside with her, a companion is secured. We will assume that this companion takes the position because it is convenient pecuniarily for her to do so; it provides her a home and also a salary. Of course the two are thrown much and intimately together. They do not see much company for obvious reasons, so that they neither go out nor entertain much. What is the probable result? It is that the lady's malady becomes the centre of their thoughts, and possibly the subject of their conversation. The maladies of the one are impressed upon the other. Probably the range of their thoughts is limited, and introspection is unavoidable. The mind of the companion takes an attitude of some kind towards the troubles of the invalid; it is either sympathetic, or unsympathetic. Upon the attitude taken much depends. If the attitude be sympathetic, then there is a danger of the sustained attention leading to some like condition in the companion. Possibly some non-medical reader thinks this a sensational statement, so it may be well to see what one of our greatest authorities has to say upon the subject. Dr. W. B. Carpenter, F.R.S., in his well-known work, 'Principles of Human Physiology,' writes: 'It seems certain that the simple *direction of the consciousness* to a part, independently of emotional excitement, but with the *expectation* that some change will take place in its organic activity, is often sufficient to induce such an alteration; and would probably always do so if the concentration of the attention were sufficient.' Suppose that the invalid suffered from excessive losses at her menstrual periods; and was credited with a fibroid tumour of the uterus, and certainly had a full heavy womb—lying low on the floor of her pelvis. What is the probability of a similar train of symptoms being sooner or later developed in her companion, if of a sympathetic nature? Very strong indeed, some medical men tell me. The two have few external matters to occupy their attention and divert it from the great object of objects. Whether the com-

panion become affected. Similarly or not, certain it is that concentration of the individual's attention upon her malady will tend to keep it up, and aggravate it. Let me be quite clear here. I do not advance the hypothesis that sympathy on the one hand, and persistent direction of the attention on the other, will inaugurate and develop a uterine fibroid. What I do put forward is—that such a combination is calculated to produce symptoms of uterine congestion, with a sense of weight and fulness and bearing down, and excessive catamenial losses. And the adoption of a sedentary life by the companion, to accommodate herself to the invalid, will produce that sluggishness of the bowels leading to a loaded condition, which has been pointed out before as pressing upon the contents of the pelvis, and interfering with their functional activity. It would quite fall in with one's experience to find the companion ere long developing that concatenation of symptoms described at p. 20; in which ovarian irritation and a congested uterus play an important part.

Or say that the lady is an invalid from biliary disturbance and enfeebled assimilation; how long time may elapse before a like condition may manifest itself in the companion? Not very long. The attention persistently directed to a viscus will lead to actual disorder therein, and especially is this true of the uterus and the liver. For two women to be thrown together, and into each other's society almost to the exclusion of all other, is hygienically about the worst possible conjunction of circumstances; and all the more if they be confined indoors. Not only will both be invalids; but they will get the particular malady 'on the brain' to boot. They may divert their attention by reading; but this, while attaining that coveted end, is scarcely a cure for a sedentary life. They may occupy their time by indoor avocations; but these will not be good from a hygienic point of view. What is to be done? That is a question it is more easy to ask than to answer; and the answer must depend upon the particular circumstances of each individual case. Much, of course, will depend upon how far it will be possible to take both out of themselves.

Of course, if an uncomfortable sensation be established in a person, and especially in a woman of neurotic tendencies, she must, and will have her own thoughts and own opinions about what she feels. Some time ago a lady of this description began

to think that she was the victim of cancer of the womb. Her relatives tried to argue her out of it—a by no means unique case in that respect. But no amount of argument could conjure away the feelings, and the sufferer insisted upon seeing a London consultant. On being asked about the matter, my unhesitating answer was, 'Certainly, by all means. As long as she has uncomfortable feelings, so long will she put her own construction upon them. Remove the sensations, and her thoughts will no longer be drawn to her uterus.' She did see a consultant; her discomfort was removed, and her thoughts ceased to direct themselves to her uterus. Now, suppose in the case of a companion of this diathesis such a condition should develop itself on a basis of uncomfortable sensations; and suppose that the lady invalid had actually disease, as an uterine fibroid, and she and her companion kept their matters to themselves—or only entrusted their confidence to some of the less scrupulous practitioners who link themselves with gynæcology; and what sort of a skeleton would each carry in her bosom? This is no imaginary picture. Given two women of neurosal diathesis and a certain medical opinion, and how much avoidable misery may be added to the sum-total of unhappiness in this imperfect world?

The union of bilious troubles with menorrhagia, and not uncommonly piles, is a common one, in my experience, in women who lead a sedentary life as companions, nurses, etc. Nor can we feel any surprise at such being the case. It may not be easy always to say what was the first departure from health; but possibly enough the liver-disturbance led the van, and then came venous congestion as a result thereof. Behind the liver lies the whole network of the portal venous system, with its myriads of venules, many of which inosculate with the branches belonging to the internal iliac vein. The uterine arteries are tortuous, and share in that capacity for adaptation for change of form, involving elongation, which is requisite for uterine growth in pregnancy. The arteries then are tortuous, while the vascular supply is, as a whole, large. The veins, too, are tortuous, and inosculate with each other freely. Consequently any interference with the blood-flow through the liver would react backwards upon the whole vascular network of the pelvis—including alike the uterine plexuses and the hæmorrhoidal veins. From this would follow

congestion of the whole area alike of the uterus, and the mucous lining of the bowel. The swollen veins of the mucous lining of the reproductive organs and the engorged uterine sinuses would set up both the excessive flow at the menstrual period, and the leucorrhœa found during the interval. The venous turgescence of the rectal lining membrane would give either hæmorrhoids, or a relaxed state of the rectal wall; which would either lead to prolapsus, or produce folds of relaxed mucous membrane requiring removal by the knife. The addition of loaded bowels to this interrupted flow of venous blood would aggravate the condition. Such consideration will enable us to conceive the condition of affairs in women who lead a life of bodily idleness. Maybe we could therefrom all the better understand how vascular fulness in organs consisting largely of erectile tissues, and linked with certain special sensations, may give an undesirable direction to the thoughts; and that in time this lends a sensuous colouring to them. The whole congeries of facts—the physical condition, the narrow range of interests, the absence of other outflows for the energies—indicates this outcome. And if such facts exist, why should we shut our eyes to them? It is all very well to insist upon moral purity and cleanly thoughts; but how is any living creature to thrust aside sensations forced upon its attention by abnormal physical conditions? Such a state of affairs is very likely to occur in 'the selfish hysteric'; and if it underlies her physical condition, it would be well to deal with it first. *Mens sana in corpore sano!*

In the case of the invalid lady whose relatives think it well that she should have a companion, these matters acquire a grave importance. Evil communications corrupt good morals: and if a lady who lacks self-control, who gives way to whims and fancies, who is lazy and self-indulgent; indeed in whom (in physiological language) the lower centres are not properly subordinated to the higher ruling centres, is provided with a companion; unless that companion be a woman of exceptional mental vigour and moral purity, what kind of an association is likely to be developed? The whole subject is one upon which it is necessary to have some formed opinions and convictions—not only in the medical profession, but the laity too. Some subjects are difficult of discussion by reason of their nature, whether by

speech, or by writing; and the present is one of the most difficult in the whole range of medicine. But it is no use to shut our eyes to patent facts; nor is it wise to thrust a matter out of sight because it happens to be displeasing. 'I have yet to learn that the disagreeableness of a fact can be regarded in any way as disproof of it,' said one of our modern philosophers. The intimate association of two women, in one of whom exists an unhealthy state of mind, is likely to lead to the corruption of the other: and when both become corrupt, what healthiness of mind or body remains? The subject is one which many readers, medical and lay, might wish did not exist; but we live in a real, not an ideal, world. It is not a subject to be lightly dismissed; and the reader who finds it displeasing had better move on to something else. Propriety is one thing, and prudery another: and if it happens that Providence has seen fit to lay down certain anatomical arrangements, and ordained that they shall serve certain physiological purposes; it is not for us to traverse the arrangement. That for the purpose of reproduction Nature, often sparing, has been somewhat profuse; is a fact running through all animated nature. That those feelings which are bound up with reproduction are strong and deeply planted is equally Nature's arrangement; and that these feelings may at times run riot and seek both natural and abnormal vent, either from physical or moral disturbance, is a matter on which it is not well to close our eyes and fold our hands. All the more is it necessary to grapple with the unclean thing at a time when brains are active, and the development of instincts early and often premature. Medical men, clergymen, and mothers have written to me and spoken to me on the subject, in consequence of the publication of a pamphlet on 'Adolescence' (by the present publishers), until I feel assured that in writing as above I have not given vent to thoughts purely mine own; but have merely given expression to what is passing through many a thoughtful mind. The lower the nervous organisation, the more the mere animal factors will predominate; and every superintendent of an asylum, whether for the young or for adults, can testify to the difficulties they have to encounter in relation to the proclivities of imbeciles and idiots. When a girl or young woman manifests mental perversions with erotic tendencies, she is much better

under the control of a skilled medical man, than cooped up with a companion of her own sex and age in a life of seclusion and idleness;—to say nothing of the danger to the companion. Here, indeed, we see all the disadvantages of a sedentary life aggregated in their completeness; and consequently this chapter could not possibly be omitted from a consideration of the diseases of sedentary life;—however much some readers may wish it had not appeared, and especially the latter half of it.

No reader, medical or lay, ought to confound the two totally different relationships of the invalid and her companion briefly sketched in this chapter. The true invalid, bodily crippled, is often a lady of high intellectual power and moral purity; and has no relationship whatever to the erotic hysteric. They both suffer—each in their own way—from congestion of their pelvic viscera, partly due to the life led; but beyond this they have nothing in common.

CHAPTER VIII.

SEDENTARY OCCUPATIONS.

THERE are several occupations, or industrial pursuits, which are notorious for carrying with them sundry maladies. Amongst men the shoemaker and the tailor are well-known examples; while the seamstress and the dressmaker are equally well-recognised instances among women. There are many other indoor occupations, which also carry with them a tendency to bodily ailments, which are not distinctly sedentary. Thus long standing, as with the engine-driver and the laundress, tends to set up a varicose condition of the veins of the legs; leaning in certain directions bows the legs of the turner. The shop-assistant suffers from backache, and often from uterine troubles, for which a seat is suggested as a prophylactic agent. But it is unnecessary to enumerate a list of industrial pursuits where the position is one of fixture, the arms only being busy,—they are legion; but the four above mentioned will suffice for our purpose.

It is said 'the tailor rests when he runs,' so great is his relief when his cramped position is abandoned. The shoemaker, too, suffers from too much sitting. 'For of sitting, as of all carnal vanities, cometh satiety at the last,' as Charles Kingsley makes his monk plead in 'Hypatia.' Of old such handicraftsmen got a welcome and a healthful change at haytime and harvest. Now they constitute our rural postmen, and the letter-carriers of small towns with few deliveries in the day; and such blending of an active life with a sedentary occupation is most excellent. The seamstress usually works at home, and suffers from all the troubles of such an existence. The dressmaker who sleeps at her home and goes to her work at various houses, gets a walk every night and morning. The dressmaker in towns is worse off, for she lives

near her workroom, and gets little or no exercise. So do hundreds more of her sex. The evils of a sedentary existence and of vascular fulness of the pelvic organs have been described in a recent chapter. The compression of the abdominal viscera in interfering with their function involves the alimentary canal, and produces indigestion and constipation—commonly found together. The effects of compression of the stomach in the production of indigestion is well seen in the dyspepsia so frequently complained of by the robust shoemaker, who, when sewing the uppers of boots presses the clamps (the cleft instrument which holds the leather) against his stomach. He constantly suffers from indigestion thus mechanically induced, even though a strong man.

It may now be well to consider the subject of indigestion; and as this work is intended for lay as well as medical readers, it may be best to assume entire ignorance of the subject on the part of the reader; and those who know something of the subject will, please, not feel insulted.

INDIGESTION.

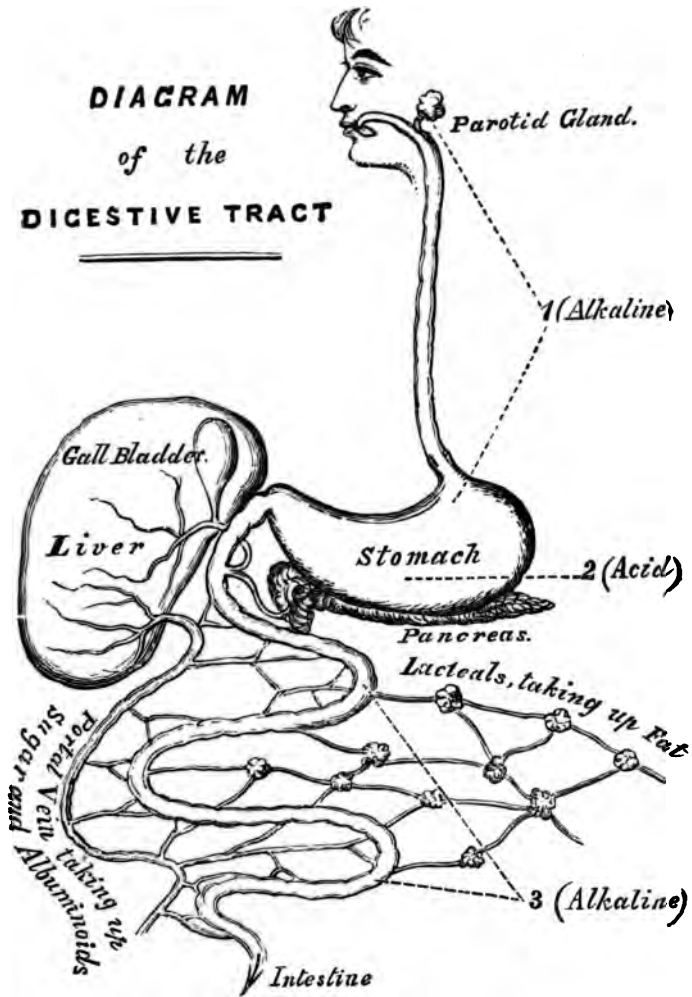
For a proper comprehension of this subject some knowledge of the digestive organs is essential. At p. 51 will be found a diagrammatic sketch of the digestive canals. By following the drawing while perusing the text, the reader will be all the better able to grasp the subject.

(1.) Food, when taken into the mouth, is masticated by the teeth, during which process it is mixed with the saliva furnished by the parotid glands. Saliva moistens the mass, and acts upon the starchy, or farinaceous, or amyloid matters (according as we choose to use an English, a Latin, or a Greek word) and renders them soluble; so that they can pass through the walls of the stomach into the blood. That is the first action of the digestive process. The saliva has an alkaline reaction.

(2.) When the food reaches the stomach it is rolled about in that muscular bag for a distinct period of time. During this time the gastric juice is being poured into, and mixed with the contents of the stomach. The gastric juice is acid, and contains a ferment—pepsin—which acts upon albuminoids. By this rolling about and solvent action of the gastric juice, the fibres of the flesh of animals are further disintegrated and dissolved. The

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DIAGRAM
of the
DIGESTIVE TRACT



1. Salivary Digestion of Starch.
2. Gastric Digestion of Albuminoids.
3. Pancreatic Digestion of Starch, Albuminoids, and Fat.

glutenous framework of bread is dissolved, so that the remaining starch-granules are freed from their prison ; while the albuminous capsules of the fat-cells of animal fat are also dissolved, and the fat left free. The gastric juice only acts upon the albuminoid constituents of our food ; the rest of the function of the stomach is the disintegration of the food already broken up by the act of mastication. (Hence the indigestion which follows upon imperfect chewing from bad teeth.) Disintegration precedes solution ; and digestion is the solution of our food—so that it may pass from the alimentary canal into the blood. If, from any cause, the movements of the stomach cannot bring about disintegration, and the gastric juice fails in securing solution, we get dyspepsia—or pain in the stomach with sense of distension.

(3.) When the contents of the stomach are sufficiently prepared, the pylorus—a muscular ring at the bowel end of the stomach—opens, and the 'chyme' (as this pulraceous product of gastric action is termed) passes into the intestine. In a healthy condition the acidity of the stomach becomes exhausted by the digestive act, so that little of the acid remains when the contents of the stomach begin to pass into the duodenum. (This muscular ring does not appear in the sketch, but the artist has marked a narrowing at its seat.) Very soon the fluids from the liver and pancreas are poured into the chyme, from a duct common to both, as seen in the diagram, in which the ducts of both these organs are united, shortly before piercing the wall of the bowel. The action of the bile (the liver-fluid) is to render the chyme alkaline, and to emulsify the fat in it. The fluid of the pancreas is inoperative in an acid medium ; consequently excessive acidity is a cause of dyspepsia and malnutrition. The pancreatic secretion acts (1) upon starch, digesting what has been set free in the stomach ; (2) by its principle—trypsin—it dissolves albuminoids (in an alkaline medium), while (3) it emulsifies fats. Digestion, then, is most active in the upper intestines below the duct.

In digestion, then, starch is made soluble as maltose, or 'grape sugar' (the chemical substance formed) ; albuminoids—proteids—are dissolved into 'peptones,' which pass readily through animal membranes ; and fat is minutely subdivided, so as to be readily taken up by the lacteals of the bowels. The insoluble portions of the food are passed along the bowels, and cast out as the dejecta.

From this consideration it is obvious that 'dyspepsia,' or indigestion, may manifest itself in several forms.

When the saliva is impaired in power the starch of the food is not dissolved out, and this undissolved starch impedes the action of the gastric juice. This is indigestion from excess of unchanged starch in the stomach. It is met by substituting for starch, food in which the starch has already been acted upon and made readily soluble. In cereals the seed has in it a ferment identical with that of the human saliva, called 'diastase,' which converts the stored starch into sugar as the germinating plantlet needs it for its food. The chemist prepares from barley a 'malt-extract,' which possesses the power of digesting starch. By adding such artificial diastase to farinaceous material before being eaten, it is predigested, and requires little or no saliva to complete its digestion. The malster, in malting barley, produces a rapid germination of the grain, and a conversion of the starch into a soluble substance, 'dextrin'; which the brewer (by the action of the diastase remaining in the malt) converts into maltose, or grape-sugar. Malted foods require little or no digestion; and constitute admirable foods for invalids, for dyspeptics, and for persons acutely and severely ill, as well as babies—indeed for all persons of every age whose digestion is feeble.* By such means we not only feed the patient, but we relieve the stomach from the presence of starch—so that it can get on with its own proper duties.

Then there is dyspepsia, due to food which is hard of digestion in any stomach; and dyspepsia, due to gastric inefficiency. The first matter involves all food difficult of disintegration. Muscular fibre is all the more readily digested by the act of cooking it, which loosens the muscular fibrillæ. Meats like pork and veal are indigestible by virtue of their hard fibre. Pastry and cheese are indigestible because they are not thoroughly masticated to a pulp, and in lumps the stomach cannot deal with them. The

* The feeder of cattle has made a like discovery. He has found that by cooking the farinaceous foods of his beasts, and so making them require little of the digestive act, the cattle will the more readily fatten. The effect of frost upon mangel wurzel is to change the starch into sugar, a matter the feeder has discovered empirically: before frost, mangels are comparatively valueless as food.

same holds good of pieces of potato and other vegetables. These all produce indigestion, because they are not reduced to a state of fine subdivision, and are not in a fit condition for the stomach to act upon them.

Then the stomach may be at fault, being either too feeble (as a muscular sac) to roll the contents about efficiently; or it may not secrete a sufficiency of gastric juice. In the first case there is flatulency, in the latter there is pain; sometimes one only exists, sometimes both. For the first we prescribe a nervine tonic, like strychnia. For the muscular feebleness, indeed, there is no better remedy. To increase the flow of gastric juice, nothing is better than ipecacuanha. Where there is both pain and flatulence, the combination of the two is indicated. According to the state of the bowels there may be added thereto a laxative. Such a compound pill is excellent in indigestion.

Then another plan to increase the secretion of pepsin in the stomach is to give, before a meal, a little dextrine with an albuminoid, a combination which is called a 'Peptogen' (from *pepto*, to digest, and *gennao*, to beget—that is, a compound which begets a peptone-producing agent—pepsin). To give a pill containing a 'peptic persuader,' like ipecacuanha, some little time before sitting down to dinner (say half an hour) and a 'peptogen' just before sitting down, the stomach will be stimulated to do its own digestion.

When either by reason of the indigestible character of the food, or its own powerlessness, the stomach cannot digest its contents, we fall back upon artificial pepsin. This is variously prepared, but perhaps the most convenient of all forms is that of pills. One or more of these may be taken after a meal. This is really helping a lame dog over a stile!

Then the stomach may be offended by fat floating about in it. Many persons cannot take fat on this account. The fat liberated from its capsule floats about in the stomach, deranging it; and not unfrequently some of the fat is broken up into a fatty acid, which gives rise to heartburn. Looking at food from a purely scientific point of view, and putting aside for the nonce its 'palate aspect,' fat should not be taken until the time for its proper digestion draws nigh. Then it should be given in an emulsionised form, mixed with carbo-hydrates, so as to mix with the contents of the

stomach when passing into the duodenum. This may be from one and a half to two hours after a digestible meal. Many persons who cannot eat fat take cod-liver oil (best taken at this interval after a meal), and so get the fat requisite for healthy tissues. But an emulsionized fat with carbo-hydrates would be at once more palatable and a more complete food. A fat in such a state of emulsion with malt extract is found in the delicious *Cremor Hordeatus Loefflundi*; and in a cheaper form, but still very palatable, in *Oleobyne*. The fat in an emulsionized form is readily acted upon by the pancreatic secretion.

When the capacity to digest fat is defective, we avoid the natural effort by the administration of an artificial pancreatic secretion as *Liquor Pancreaticus*. The difficulty lies in getting the pancreatine to the food, as any acidity in the stomach would be fatal to the manœuvre. To obviate this we wait until the acidity of the stomach is pretty well exhausted; and, to make sure about it, we give the dose of *Liquor Pancreaticus* with an alkaline guard, which sees it safely through the stomach. The least unpalatable plan is to add a good pinch of light magnesia to a small cupful of milk, mix thoroughly, add the *Liquor Pancreaticus*, stir all up, and swallow. The artificial pancreatine helps out the natural secretion; and between the two the patient is enabled to digest all the constituents of the dietary, including fat.

Another plan is to take ether (best in a capsule), which is a stimulant to the pancreas; and certainly this ought to be done when there is any difficulty in the digestion of cod-liver oil. (Cod-liver oil is merely the most digestible form of unemulsionized fat.) There is nothing magical about it. Emulsionized fat combined with carbo-hydrates would be at once more physiological, and more useful. For if cod-liver oil is the most digestible form of fat, it is not the most desirable for the tissues. If other fats could be emulsionized and combined with carbo-hydrates in such a manner as to keep, and so be a saleable article (as *Oleobyne* is) a great boon would be conferred upon the myriads of people who experience a difficulty in digesting fat; and especially that large class which loathes cod-liver oil on account of its taste.

To look at food from the digestive point of view, the meal ought to consist of (1) a milk pudding made with broken

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Captain's biscuit, or a farinaceous milk pudding, to which ground malt has been added before cooking, or to which, when being served up, some active malt extract has been added; this would give grape sugar, which at once would diffuse through the walls of the stomach; (2) some easily digested albuminoid, as fish or chicken, or sheep's head or tripe, on which the stomach could act without impediment; and (3) when the contents of the stomach were passing into the duodenum, some fat with carbohydrates, on which the pancreatic secretion would act. This would be a physiological way of taking food; but whether it would be either convenient, or even pleasant to the palate, may be questioned! Then any constipation should be relieved. For no plan of dealing with dyspepsia can be successful unless the bowels are kept open.

Such then are the broad principles for dealing with indigestion in its various forms. A sedentary life predisposes to indigestion; especially where the abdomen is pressed upon, as is the case in a sitting posture. Another outcome of this compression is flatulence. The flow of blood in the portal circulation is embarrassed, and there is venous congestion in the mucous lining of the alimentary canal, with the result of the formation of gas, giving flatulence. (In cardiac lesions or weakness, and in emphysema where the right heart is embarrassed, flatulence is very common.) Where there is such a condition carminatives are indicated, as ginger and the various forms of peppers; the essential oils; and the nauseous gums, as galbanum.

In all cases of a sedentary life, no matter of what kind, there is a distinct tendency to indigestion and to constipation—due in great measure to limited activity in the vermicular movement of the intestines, and restricted blood-flow in the portal circulation. Bodily exercise in any form is beneficial, and should be taken scrupulously, whatever else may be done in the way of a regulated dietary, and attention to the bowels. It too frequently happens that the dyspeptic practically hungers in consequence of the pain set up by taking food. The range of food which he can take without suffering is so limited that it is soon loathed, and then the patient is half starved. To provide a sufficient choice of suitable food for dyspeptics is a task for which few have chosen to fit themselves; and an arduous undertaking it is, as anyone will find who essays it.

Indigestion is a great burden. It limits the earning power, while it increases the cost of the food. It certainly does not sweeten the disposition, as Tom Carlyle found. When the power to take food is impaired and only a small meal can be taken at once, it is obvious that a comparatively small interval only should elapse between the different meals, else the dyspeptic will be underfed.* Another point is to be extremely careful about the food when tired or exhausted. Neglect of this has often been followed by an aggravation of the indigestion, lasting for a considerable time afterwards in many cases.

* When small meals only can be taken, it is well to take some food betwixt meals. Some meat broth with cooked farina, or milk with some malted preparation, are suitable foods ; or others may find a glass of milk sufficient. In the afternoon a glass of wine and a biscuit may be acceptable betwixt lunch and dinner.

CHAPTER IX.

OFFICE WORK.

THE clerk is not the only man who suffers from an indoor existence; the person who engages his services is usually equally a sufferer from this mode of life. He, too, spends a great portion of each day in his office, whether merchant, banker, solicitor, or accountant. Of course there are plenty of other occupations involving too much sitting, as well as an indifferent atmosphere. When one thinks of the bank, the insurance-office, the printing-office, the private rooms of principals in the City, and of the air breathed therein, one shudders to think of the lives of the people who dwell in them for a considerable portion of each day. The air has been breathed and rebreathed until it has lost a considerable portion of its active oxygen, and has taken up a distinct proportion of carbonic acid. It has little or no invigorating properties left in it.

No wonder that the City man does not present the ruddy cheeks of the country squire; or that he is pale and sallow, and often feels 'liverish,' as he himself terms it. The whole condition can be readily taken in by an experienced glance. No wonder that many find a readiness to take a beverage at once alcoholic and effervescing about eleven o'clock. After they have read their letters and set things a-going they adjourn, and either have sparkling wine, or a small quantity of spirits and gaseous water. The City air does not inspire them, so they must take in some inspiriting agent like alcohol. Then they return to business till one, by which time they are quite ready for sherry and bitters, especially Peptogen bitters, as a preparation for luncheon. Some toothsome food and some generous wine, and they feel fit to tackle the work of the afternoon. When five

o'clock arrives they are prepared to adjourn to the club, where they get ready for dinner. The meal despatched, they enter the smoking-room, or the billiard-room, or go to the theatre, or a lecture. All this time they have been breathing an impure atmosphere, going from one imperfectly ventilated place to another. At last the day comes to an end, and the jaded man gets home to his bedroom, which is a little better than the rooms in which he spends his day-time. During the day enough of alcohol has been taken to insure a good night's rest. For there can be no question that when the brain has been stimulated by alcohol all day, or a good portion, it goes to sleep pretty effectually when bed-time comes. Such is a picture of the lives of hundreds of hard-working men at the present day. No wonder, then, that we find men talking of feeling in low spirits, 'not up to the mark,' or depressed, or complaining of trying times. Robbed of the health-giving oxygen to a great extent, with imperfectly oxygenized blood (charged, too, with mal-products from the liver) circulating through it, the brain feels deprived of its vigour. Work is got through ; but there is none of the elasticity of the spirits experienced on the cliffs of Margate, for instance. The brain has been driven on by stimulants rather than working from a sense of energy—making work a pleasure.

Granting that a number of hours daily must be spent in an office by men of business—that such existence is unavoidable—how must the business man manage to make the best of existing circumstances ? The necessity for taking in surplus oxygen has been insisted upon before (p. 30), and it is not necessary to repeat here what is written there. The necessity for a store of oxygen for consumption in office-hours is as great for the principal as it is for his clerks ; consequently the business man should sleep in the country. But, how about his wife, his sons and daughters—the ladies especially ? They experience a need for society, and like a little pleasure in the evenings, and the country is so slow ! Even the sons think that, after their work in the day, they ought to have as a reward some amusement. Of course, if health is not the great end of life, paterfamilias must sacrifice his own interests, and consider the members of his household. He, possibly, is rather in favour of a little society, or amusement in the evening himself. Then he need not continue the perusal of this work ;

or, indeed, can please himself, and read on (if so disposed) unheeding. But about the desirability of residing in the country for men who have offices there can be no question in his mind any more than in mine.

Contrasting with the sketch of city life just given is that of the reasonably prudent man. He gets up from a cool, large, well-ventilated bedroom into his dressing-room, the air of which is quite fresh, and in fine weather he throws open the window and enjoys the breeze. His eye roams over the garden, and the fields beyond, while he dresses. Then he has five minutes in the garden before breakfast, taking in oxygen in any quantity. After breakfast comes the walk to the station, previous to the journey up. This is not time wasted—he can be thinking about the work of the day. He goes into his office fresh and vigorous, and has no craving for some light form of alcohol at eleven. When lunch comes he feels ready for a slight meal with a little light wine, and goes back to work with a will; for the spare oxygen he took in in the morning is available. At five o'clock he gets into the train and goes home. He has a walk from the station, and is ready for a six o'clock dinner. After dinner he smokes a cigar round the garden when the days are long, or even in the moonlight (in his greatcoat) when the days are shorter; then he comes in to listen to some music, or to read a book, or take a hand at whist till ten o'clock, and then retires to a cool bedroom. This is the life led by some shrewd men that I know. Of course, much depends upon taste. For a large number of men, such life would probably have no charms; they prefer something a little livelier.

It is, fortunately, not for me to show any man how he individually shall secure such a life as is here described; my duty extends to insisting upon the advantages of such a life; how he shall attain it is a matter for the individual himself. He will be the person benefited thereby—not myself, or any other medical man.

That good villa towns will arise in healthy situations, within a railway ride of all large towns, is only a matter of time. Quiet society would be so secured, with all the advantages of a country life. And the more intelligent of business men will see that such residences would be eminently desirable for their children, rather than being reared in a town. Of course, *materfamilias* would

have some objections to urge; but she would be able to run up to town whenever any shopping would be required. What an admirable villa-town of this kind might be erected on the slope from Pinner Station to Harrow Weald; just as there is a mass of good villa-houses spread over the western slope of Hampstead.

P.S.—I am informed, as these sheets are passing through the press, that the temperature of offices in the City is usually kept up to 70° Fahrenheit, as the occupants feel chilly at a temperature below this; so feeble is their power of heat-production. Such office occupants are truly 'hot-house plants'!

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CHAPTER X.

LITERARY PEOPLE.

A LITERARY life is necessarily and unavoidably a sedentary life. Arrangements have been made to permit the shoemaker to stand up to his work ; but no one suggests that an author should stand to his writing-desk. One must sit at the desk ; at least in my personal experience of authorcraft, which has been no limited one, sitting has prevailed ; nor among all the literary persons I know of, have I ever heard of one standing to write except Victor Hugo. The writer usually sits ; whether it is the author who has made a reputation, or the mere literary hack ; whether it is the old-fashioned quill that is used, or a type-writer. This must be the origin of the word to 'sit upon' a person, when a rebuke has to be administered, or a castigation has to be inflicted ; rather than to literally sit upon him or her. Certainly the law lords sit in judgment ; and so do those self-elected irregular doomsters, the critics. Possibly it is too much sitting, interfering with the proper circulation through the liver, which makes critics bilious, even atrabilious at times ; at least so the suffering author is apt to think. The authors themselves are said to be an irritable race : possibly they may labour under such infirmity from their blood containing too much waste matter from lack of exercise, and deficiency of oxygen.

It is not every writer who can sit, like Dickens at Gad's Hill, with a glorious landscape in front of him, and the balmy breeze blowing in at the open window. Fancy how literature would blossom into an amiable poetical good-natured and kindly occupation, instead of being what it is, if all writing could be carried on under such favourable circumstances. The sedentary life would necessarily remain ; but then how different all else ! Contrast with

the calm of Gad's Hill the houses in town, small, close, commanding no view; but within earshot of the piano next door, the organ in the street, and the tuneful cat on the tiles. Those who carp at authors for being irritable probably have not essayed writing under such circumstances. Just when a complex thought is in the process of being unwound, or unravelled, and carefully laid out on paper, to remain as 'a thing of beauty and a joy for ever'—a crystal of lucid thought, or may be several of such crystals—the front door is violently assaulted, the bell loudly rung by a telegraph boy bringing an urgent message from the printer for more copy. The thought is broken up, and its fragments can never be quite successfully pieced together again. What liver could endure this without perturbation?

Then the life led in a printing-office is even worse—a still smaller room, gaslight in the daytime, printer's devils, messengers, conflicting foreign news, with a vacillating policy in the Ministry, and a distracted editor striving to construct a leader which will give the reader an impression of standing on stable ground. What must be the physical condition of this man's viscera, from his brain downwards, when he has concluded his labours in the small hours of the morning, and 'put the paper to bed'? Those who calmly peruse the leader next morning at breakfast little think, as they admire its clearness of view, its eloquent diction, its judicial character, of the turmoil and distraction under which it was penned. Journalism is the most harassing and exciting of all forms of literature, and involves a life of unrest; as well as an atmosphere about as prejudicial to the health as anything that could well be conceived. The editor's life is trying; but that of the sub-editor, who more commonly 'sees the paper to bed,' is worse. At one time, when wishing to influence public opinion, it was enough 'to tune the pulpits,' as Laud did; but now the important matter is the press. The first involved the leisurely weekly sermon; the latter has the feverish daily leader. The life of the 'pressman' is a very trying one, especially in connection with the daily press. The weekly work is calmer; while monthly magazines do not distract at all, or scarcely. The whole of this journalistic work has to a greater or less extent to be done against time; the steady progress of the minute-hand can never be forgotten. In this it differs from

other literary work—though a hint to make haste is not unknown outside journalism.

The life of the literary man differs from that of others in its peculiar demands. There is the acquisition of knowledge; the digestion of it till it takes its proper form, each part in due proportion; then it must be laid out in good array, and the thoughts clothed in the best language at the writer's command. And how many people who find criticism to involve little cultivation, ever try to see how they themselves could write? Perhaps if they did they would not be so complacent over their criticism. Even if their brain proved equal to the trial, how about their liver before they had been at work very long? Would there be no visceral derangements on foot?

The literary men of the present day are not like 'the grim old rufflers of the tongue and pen,' as Ben Jonson, Sedley, Porson, Savage, or the Scotch bard, Burns; but still they are thrown a good deal amidst dinners, luncheons, conversaziones, etc., where a certain amount of good eating and drinking goes on. That they are a somewhat self-indulgent race may not be vigorously denied. As a rule they are cultured men; and literary society is undoubtedly attractive. They may be said, too, to keep somewhat late hours, especially those connected with the daily press. Consequently, betwixt the good living, the impure air they breathe, and a sedentary life, a large number of literary men suffer from biliousness.

BILIOUSNESS.

This is a term used to signify that the individual is suffering from excess of bile. It is a wide term, and when used by anyone it is well to find out what the speaker precisely means by it; one will apply it to one set of symptoms, another to another. With one there will be frontal headache; another, vertical; but with both there will be depression of spirits. Before proceeding further with the various phenomena exhibited, it will be well to review the functions of the liver. They are:

1. The storage of glycogen, or animal starch, from the grape-sugar furnished to our blood from the farinaceous and saccharine elements of our food. This 'fuel-food' is stored up by the liver after each meal, for the use of the body when fasting.

2. The albuminoids of our food pass from the bowels into the radicles of the portal vein, and from thence into the liver. (See diagram at p. 51, and text pertaining thereto.)

3. The liver secretes, or excretes bile; which is useful in emulsionising the fatty elements of our food. The bile-acids both contain nitrogen, and one contains sulphur. This proves incontestably their derivation from the nitrogenized, or albuminous elements of our food.

Fat is not absorbed by the radicles of the portal vein, but taken up by the lacteals in the villi of the intestine. Fat, then, does not go directly to the liver.

The albuminoid bodies are called 'proteids' in their insoluble forms, which are made soluble in the alimentary canal in order to diffuse through the membrane forming the wall of the alimentary canal. In their soluble form they are called 'peptones.' If they remained in the soluble form of 'peptones,' in which they enter the blood, they would escape out as easily by the kidneys as they found their way into the blood. (Indeed, in the case both of carbo-hydrates and proteids, solution is the act of digestion. As soon as both have found their way into the blood they are turned back again. If this were not so, the organism would starve, as both sugar and albuminoids would find their way out of the body by the kidneys; as in some diseases they do, as we shall see.) As soon as the peptones enter the portal vein the process of transformation into proteids commences. In the liver some of these proteids are elaborated into the serum-albumen of the liquor sanguinis for the nutrition of the body-tissues. The rest, known as the surplusage, or *luxus consumption*, are burnt up by oxidation, and cast out as urea and uric acid, or as bile-acids. But nitrogenized bodies do not oxidize readily. 'Of all the elements of the animal body, nitrogen has the feeblest attraction for oxygen; and what is still more remarkable, it deprives all combustible elements with which it combines, to a greater or less extent, of the power of combining with oxygen, that is, of undergoing oxidation' (Justus von Liebig). The tissues of the body are albuminous, containing nitrogen, and so do not readily burn up; as do the hydrocarbon elements—the body-fuel. The body tissues are like the steam-engine; the framework does not burn by rapid oxidation, as does the fuel it burns in its boiler. Still the iron-

work does perish by a slow oxidation, *i.e.*, by rusting. So in the body the albuminoid tissues 'rust,' but they do not 'burn.' The liver deals with waste albuminoids, which it burns up slowly into urea, if all go well; and some into bile-acids. These are the 'ashes' of the body-combustion.

It is with this metabolism of nitrogenized elements with which biliousness is essentially concerned. The hydrocarbons (fat and the carbo-hydrates) readily oxidize; and it is clear, if an excess of food be taken, these will readily burn first, leaving the albuminous elements to slowly consume—like the ashes of a fire. Sugar and fat are said to make bile; but it is abundantly clear they do not do this directly, but indirectly. If the respired oxygen is met by readily oxidizable hydrocarbons, the less readily oxidizable nitrogenized elements will be left to the last. Consequently, when biliousness is afoot, there is a loss of appetite, and especially a loathing of fat. The liver, by suspending the appetite, works round when laden with an excess of waste albuminoids, and so gets rid of the load. A high temperature melts down the albuminoid tissues, as is seen in fevers; so when there is an excess of waste albuminoids in the liver—'the furnace of the body'—the temperature rises somewhat, and 'Nature holds a bonfire.' To rightly comprehend biliousness, it is necessary to get what has just been written clearly into the mind, so that there shall be no confusion on the subject. It is not excess of hydrocarbons, but of albuminoids which creates biliousness. But an excess of hydrocarbons in the body retards the oxidation of spare, or waste albuminoids. Consequently, with biliousness the most direct line of treatment is to cut down the amount of the albuminoid elements in the food; though this is opposed to pre-existing ideas.

Bile circulating in the blood acts like a toxic agent, and is a direct depressant to the brain; and when a man was very depressed, the old Greeks told him he had melancholy—'black-bile.' From this idea originated the expressions, a 'jaundiced view,' or 'steeped in gall'; and a man whose brain is poisoned with tonic hepatic products, or 'liver stuffs,' is ever despondant, and inclined to look at the dark side of things. Georges Sand, in her '*Histoire de ma Vie*,' wrote, 'Whether it is the bile which has made me melancholy, or the melancholy which has made me

bilious—this would resolve a great metaphysical and physiological problem, which I will not take up—it is certain that sharp pains in the liver produce symptoms, in all those that are subject to them, of profound sadness and a wish to die.’ Dryden was more clear as to cause and effect. He wrote :

‘The yellow gall that in your bosom floats
Engenders all these melancholy thoughts.’

In others, a condition of cholemia produces rather the fear of impending death than the wish to die. The spirits are depressed, the bodily vigour is lowered, and the sufferer is under the influence of a depressant poison—produced within and by the liver. There is a body of testimony being furnished to us that the decomposition of albuminous substances within the body will give resultant products of a tonic character such as have been produced from the decomposition of albuminous bodies outside the body. If the peptones are not turned back into proteids, and find their way into the blood, they constitute a depressant poison (Dr. Lauder Brunton, F.R.S., on ‘Indigestion as a Cause of Nervous Depression’). In these cases ‘an unwonted langour comes over the patient generally about two hours after a meal, and the patient wonders why his limbs feel heavy like lead, and why he should have such a disinclination to exercise, either mental or bodily.’ But, to leave this last matter as one not yet proven, there can be no doubt that the well-known biliousness so common is a state of mental gloom. The whole horizon is deeply stained with Indian ink, and all ‘looks black.’ Not only that, but the individual feels shorn of capacity, mental and bodily: he is like Samson when shorn of his locks. Depression and sense of incapacity are the prominent features of biliousness; leading to despondency and gloom, and not seldom to suicide.

The bodily symptoms are headache, either frontal, vertical, or occipital (arranging them in their order of frequency); the eye-balls feel tense, subjectively or to the touch; there is a yellow shade on the tongue, either when covered with fur, or clean on the surface: the stools are either dark, bilious, and offensive; or clay-coloured; or, when deficient in bile, pale: while the urine is high coloured, and of high specific gravity. There may, or may not be a certain icteric tinge over the skin and mucous surfaces, as the oral cavity or the conjunctiva. Such a condition is

cholæmia, biliousness, or being 'liverish,' according to the choice of words. Not uncommonly it passes away with vomiting and purging; anorexia being present. Such a condition is too frequent and too familiar to all, to need further description.

When such a condition is present, what is to be done?

In the first place, the patient must be put upon a non-nitrogenized dietary. To this probably the objection will be raised that the only food which can be taken is a little lean meat, bread, and tea (without sugar and milk). By such food the condition is maintained; as is obvious if the bile-acids are derived from the albuminous constituents of the food. Tea, slops, gruel, whey, milk, and Vichy or Vals water, should form the dietary. A mercurial in some form, at bedtime, is indicated, followed by some sulphate of soda, in mineral water or any other form, next morning; after which follow copious bilious stools, bringing with them speedy relief. Then, as a more permanent treatment, it is well to combine strychnia (as a nervine tonic) with ipecacuanha (an excellent hepatic stimulant), and euonymin (also a hepatic stimulant) in the form of a pill, to be taken twice daily for some time.

In cold weather the patient should wear a cummerbund, or belt of four thicknesses of flannel, well quilted, about nine inches broad, which keeps the liver and kidneys warm. (The liver is the body-furnace, it must not be forgotten.) When acute hepatic symptoms are present, a large hot poultice will help the liver to unload itself. These measures are the more necessary when, for any reason, the liver extends beyond the line of the ribs; and, instead of occupying its own snug nook, is only covered by the abdominal parietes, and so is liable to be chilled.

Then as to the food. It should largely consist of farinaceous material and fruits. Even if the patient complain that in such dietary he will get weak, this must be insisted upon, and his arguments combated. From the perusal of my work, 'Indigestion and Biliousness,' an American, who complained of 'an ungrateful stomach and an insufficient liver,' cut meat out of his dietary, and therewith rid himself of his bilious headaches. To give food rich in nitrogen—the stimulant food we crave for, and delight in, in a state of health—is only to increase the difficulties of the situation, for the liver cannot deal with them. We 'do not feed the patient; we only feed the disease,' as old-fashioned people ex-

pressed it. The albuminoids are not elaborated into material for the nutrition of the tissues, and are only cast downwards into bile-acids and urine-solids. If the food furnished to the liver give it but little to do, that little may be done properly: but if the embarrassed organ have much labour thrown upon it, it will do none well. So the dietary must be 'levelled down' to the capacities of the liver. Some time ago a young surgeon made my acquaintance to tell me a fact he knew would interest me. He had had a sharp attack of enteric fever in India, and, on convalescence, found his heart weak. As soon as he got within reach of a French cook at Bombay, he began to feed himself up, on all sorts of good food. But the effect was disappointing: he did not improve. On arriving at Aldershot, he found a friend reading my book on 'Indigestion and Biliousness,' who drew his attention to some remarks of mine on the subject. He put himself upon farinaceous food and fish (with which his liver could deal), and reported himself to tell me the (to him) wondrous result. And so it is with others: it is not what we *eat*, but what we *digest* that feeds us—a lesson hard to instil into some persons. Whether the liver-products of mal-assimilation be bile-acids or urine-solids, the material from which they are formed is lost to the tissues. Under more favourable circumstances, they might have gone to feed the tissues. But their prospects have been blighted by the disordered state of the liver. 'They stand in the same relation to the tissues that a still-born child bears to an estate it would have inherited, had it been born living and viable.' The aborted tissue-material is only a source of trouble to the system. To increase the amount of food, and especially the lean of meat, is obviously to add to the embarrassment of the liver, and increase the amount of these waste matters, or mal-products. By the adoption of a suitable regimen, and appropriate medical measures, a beneficial change can usually be brought about in a little time.

Then in addition to the persisting condition, there exists 'liver-indigestion,' *i.e.*, mal-assimilation by the liver. This does not produce local symptoms like primary or gastric indigestion, but is felt mainly in the head. The patient is languid, depressed, and irritable, in consequence of the effects of hepatic poisons, or liver mal-products, circulating in the blood flowing through the brain. This comes on, not directly after a meal, but from two to three

hours after; that is, at the time when the digested food is passing from the alimentary canal into the portal vein, and along it to the liver. A marked instance of this was furnished some time ago in the case of a well-known authoress. She was bilious, and her furred tongue was stained with bile; but, in addition to this, she had periods of liver-indigestion. After a good meal, for a time she would feel well, as she did when in her ordinary health; but after a while she began to feel acutely miserable. This feeling lasted some time, and then disappeared. Its presence corresponded with the time when the liver stuffs were passing into her blood. The same occurs with many other bilious persons. According to James Henry Bennett, in many cases the urine is charged with white urates at the time of this liver-indigestion; and he recommends ('Nutrition in Health and Disease') that samples of urine passed at different times should be allowed to stand, and a note made of what occurs with each. This is not an agreeable study, but it is often useful; for if urates be found in any quantity in the water passed three or four hours after a meal, it is clear that the liver cannot deal properly with the albuminoids supplied to it by the alimentary canal; and therefore the bulk of them should be diminished.

There is a strong impression on the part of those who have paid attention to this subject practically, that some albuminoids are less digestible than others. The lean of the larger animals is less assimilable than is the breast of a chicken or white fish. Caseine, whether animal or vegetable, is less given to produce urates than are other forms of albuminoids. On the other hand, milk is 'bilious' (as many know), and caseine is rather apt to form bile-acids. Consequently, when bilious, meat broths with farinaceous matter are indicated; while if lithiasis (or the uric acid formation) is present, it is well to resort to milk, with or without alkaline waters.

Such then is a bird's-eye view of biliousness, and the principles here laid down should be followed for the relief of this condition when established. It is quite clear that the malady is one of 'sub-oxidation,' as the late Bence Jones termed it; just as much as lithiasis, or gout—in its widest sense. (This subject will be taken up a little later.) Consequently it is fostered by an atmosphere deficient in active oxygen. The moral of this is that persons who are bilious should spend a certain portion at least of

each day in a good air. If they must work in ill-ventilated rooms, they should sleep under favourable circumstances. They must store up oxygen some time during the twenty-four hours—or suffer for the want of it! One matter there is about biliousness, and that is the habitat. The plains of Bengal are favourable to the production of biliousness, and a sojourn on the hills relieves that condition when set up. So it is here in England: and all bilious persons are worse when residing in the lower parts of the Thames Valley, and are better up the slopes, whether of the northern heights or the Surrey hills. Persons ill at Earl's Court and Brixton, improve at Hampstead or the Crystal Palace. And so it is elsewhere than in the Thames Valley.

The good effects of exercise, and especially of horseback exercise, in conditions of biliousness, or sluggish liver, are well known and widely recognised. If the bilious literary man, or office-worker, could sleep on the loftier outskirts of London, and have a ride on horseback every morning before breakfast, he might go to his sedentary work, and imperfect ventilation, with comparative impunity. If he cannot do that, he ought to do his nearest feasible approach to it.

As to his dietary, he would be wise to approach vegetarianism; or, at least, he should shun the flesh of the larger animals. As to his drink, probably all malt liquors are a poison to him; and he should take a little light red wine, French, Italian, or Australian, or a little good spirit in a mineral water. And probably he will find with biliousness, as with gout, 'there is no nice way of having it; and, what is worse, there is no agreeable way of avoiding it'!

It frequently happens, that as bilious persons advance in years, they gradually cease to be bilious, and become gouty. In both instances the liver is at fault: at first it makes bile-acids in excess; later on it acquires the vicious practice of forming urates instead—both the outcome of the albuminoid elements of food. In both conditions there are those spots of pain in the back, near the shoulder-blades, which are so characteristic of nitrogenized waste in the blood in excess—no matter what its form. In both there are mental symptoms in which cholera and gall are prominent, the result of the brain being supplied with blood charged with toxic matters formed in the liver. Temper, indeed, is certainly linked with the liver in all cases.

CHAPTER XI.

SCHOOL MASTERS AND MISTRESSES.

IF school-boys are safe against the troubles which result from lack of exercise, it is more than can be said about schoolmasters as a rule. While the master is young and a subordinate, he can join in the games of the boys without detriment to his position; but when he advances in years such exercise must be abandoned. Propriety and decorum begin to weigh heavily upon him; he has to adopt a staid and grave demeanour, and a measured step; and then quietude lays its finger upon his viscera. His duties compel him to sit for hours; his tastes probably confine him to his chair out of school-hours; and then a lethargy steals over his organic life. Possibly his appetite keeps up, and his palate is unaffected, so that he takes a considerable quantity of food; but what becomes of it? With the last chapter before our eyes, there is room for fear that there are to be found present some of the results of *luxus consumption*; more or fewer in each case.

Yet with the effects of bile-acids upon the brain just described, it is eminently undesirable that a schoolmaster, who is a judge and a ruler, should have anything circulating through his brain which affects his temper. The more real the causes for mental perturbation, the more absolutely necessary it becomes to avoid all and everything which may act injuriously upon the judgment. I can well remember an old head-master who was liable to fits of gout, and his pupils were all sorry when the attack was on. So it is with other masters. If they are liable to constipation, as they commonly are; if they are bilious, which they not unfrequently are; if they are gouty, which occurs sometimes: they are so far unsuited for the position they hold. Consequently it behoves them to guard against such bodily conditions as militate against

their fitness for their posts. Of course their pupils do not see them from the standpoint of a physician's consulting-room, else they might make allowances for them. As it is, they can only judge by what they observe, and feel that something is wrong with their preceptor; and that they are involved in the manifold results which flow therefrom.

The same, too, can be said of schoolmistresses; with the addition that by virtue of their sex they have other troubles which are aggravated by a sedentary life. If the 'crocodile' is a sad sight, the spectacle of the schoolmistress poring over the exercises of her pupils when she ought to be out for a brisk walk, is scarcely more enlivening. She is sacrificing her health to her conscientiousness—with or without suspicions that such is the case. On looking over my case-book I find a number of schoolmistresses, and, on going over the notes, find one with constipation and biliousness; while another is plagued with hæmorrhoids; and a third has menorrhagia. Indeed, being human, they are liable to the infirmities to which humanity is subject. Hard-working, earnest, and conscientious, they study their duty to their pupils too frequently to the neglect of their own bodily interests. On remonstrance as to their life, they plead, genuinely enough, How are they to help it? Certainly there are difficulties in the way; but fortunately it is not for the physician to solve these difficulties, it is his duty to point out that the difficulty ought to be overcome in some manner or other.

Unfortunately with schoolmistresses the decorum they instil into their pupils often presses heavily upon themselves. Suppose the superintendent of a high school for girls was seen romping, or otherwise indulging in active exercise (as needful and as healthful for her as any other human being), what would her scholars say? Yes; it would be serious no doubt! But surely it could be safely indulged in out of sight.

Of course the heads of schools, male and female, are usually persons of intelligence, and commonly of judgment; but the difficulties of their position are almost insuperable. But the more responsible the position they hold, the more imperative it is upon them that they remember the *mens sana in corpore sano*. Each morning there should be a bath with a good scrubbing in the act of towelling. This is the very least that can be done;

the very smallest recognition that the body has some claims upon them. If a brisk but short walk could be taken before breakfast, it would be a capital hygienic measure ; and keep off that congestive sluggishness of the abdominal and pelvic viscera, which is the bane of their lives with many of them. Whether anything more than a walk with her girls in the one case—that staid decorous slow walk—or a like walk alone in the other, is possible daily, or feasible, will depend upon circumstances ; but some more active exercise is very desirable. On Saturday afternoon a long walk ought to be made a duty—indeed such is a duty to the body ! Sabbath-breaking is scarcely likely to be the sin of school-superintendents, but it would be well to repeat the walk upon that day. Unfortunately there is the matter of example which really presses hardly upon teachers. They have to set the example of attendance at divine worship, nor is it possible to see how they could well avoid doing so ; but still, somehow or other, they should get some healthful exercise. To insist that they should attend to their bowels is scarcely necessary ; they know the importance of doing so. But does knowledge always inspire conduct ? Is King David the only individual who has fallen beneath what he knew was desirable, and repented himself of what he had done—when the unpleasant consequences came home to him ?

CHAPTER XII.

BODILY INFIRMITIES.

THERE are many persons constrained to lead a sedentary life, often sorely against their will, because of bodily infirmities which prevent their taking exercise, or following any occupation requiring active effort. Perhaps of these none are more important than diseases within the thorax. If persons are partially disabled by reason of the loss or deformity of a limb, or by paralysis, the fact is obvious and patent. But extensive disease may exist within the chest and yet comparatively little evidence be furnished thereof to the unskilled eye.

INJURIES TO THE HEART.

Injuries to the heart leave behind them persistent life-long consequences—varying according to the extent of the injury—and among others, involve a life of quiescence. As there exists much confusion in many minds about diseases of the heart, it may be well—especially for the benefit of the lay reader—to try to make the subject a little more clear. The heart is a hollow muscle, which pumps the blood from the veins into the arteries; pump-like, it has valves to prevent the blood regurgitating backwards when driven out of the muscular chamber—by the contraction of the latter. There may exist a condition of weakness in the muscle itself, of a temporary character, as in conditions of general debility, or after fevers or wasting disorders, as diarrhœa, or from mal-assimilation. All these may occur at any age, and may be taken, or mistaken, for more grave disease. But true disease of the muscular wall of the heart is essentially a malady of advanced life. On the other hand, mischief in the valves, and especially the mitral valve, is unfortunately quite common in

youth. ~~If Then, too, then~~ heart swings in a complex nerve-balance—nerves which make it go slower, nerves which make it go faster—and by virtue of these is liable to a series of nervous affections. These latter are often misinterpreted, and nervous disorders assumed to be conditions of disease. Especially is this the case, since a nervous disorder of the heart is most apt to force itself upon the patient's attention, and thus to fix the thoughts upon the heart. When a patient comes to the physician complaining of the heart, and suspecting it to be the seat of some disease, in the very large majority of cases the trouble is a nervous disorder. When some organic change is actually set on foot the complaint is rather of some outcome thereof—such as shortness of breath upon effort—for which the doctor is consulted; who, upon examination of the chest, finds some mischief in the heart. The nervous affections of the heart scarcely demand much consideration here—as they are not aggravated by effort, and do not therefore entail a sedentary existence.

It may be well to take valvular affections first, in our present consideration. The lowliest form of heart is a mere pulsatile muscular sac, which contracts when it becomes full; driving some of the contained blood forward (the desired direction) and some of it backwards (the undesirable direction). Then valves appear, which prevent the backward flow of the blood, and so prevent waste of power in the muscular pump. (For if some of the blood goes backwards, another stroke of the pump will be necessitated to drive it forwards.) No great activity is seen till valves appear in the hearts of animals. (Nor must the fly and flea resent this statement.) It is not indeed till the vertebrata are reached, that valves are found. At first the heart consists of a sac called the auricle (whose walls are comparatively thin), which pumps the blood into another sac, the ventricle (whose walls are comparatively thick), which in turn, contracting with greater vigour, sends the blood forward into the arteries. Valves prevent the blood flowing back from the ventricle into the auricle, when the ventricle contracts; other valves in front of the ventricle prevent the blood flowing back into the said ventricle, when once thrown into the arterial system. The human heart has this arrangement on two sides; the right throwing the blood from the veins into the lungs, the left taking the oxygenized blood coming

in from the lungs, and throwing it into the arteries for the use of the body generally. The right side of the heart is linked with the pulmonic, or lesser circulation ; the left side, with the greater, or systemic circulation. It is this latter which interests us here.

When the arterial blood flows from the lungs into the left heart, it first fills the auricle, and then flows into the ventricle ; then the auricle contracts, and this contraction runs on into the ventricle, whose own contraction follows. When the ventricle contracts the valves betwixt it and the auricle (the mitral valves) close, and so the blood is prevented from flowing back into the auricle. When the ventricle contracts the blood is thrown into the great artery, the aorta ; and its regurgitation is prevented by valves at the aortic root—known as the aortic valves. In early youth the aortic valves are comparatively rarely affected ; while the mitral valves are frequently the seat of disease. In rheumatic fever the mitral valve is very apt to be the seat of an inflammation, which results in some change of form in the valve-curtains. Either they shrivel, and so become incompetent, not completely preventing the backward flow of the blood in the contraction of the ventricle ; or their free edges are glued or fused together, and this constriction of the ostium leads to a damming of the blood at the mitral valve. In either case there is congestion of the vascular system in the lungs, and the patient is scant of breath on exertion. The injury done may be small, considerable, or extensive. If it be small, probably the injury will make itself felt only on severe exertion ; if considerable, it will be felt on any exertion ; while if extensive, it is felt even when quiet is maintained. It is then in every way a matter of the highest moment, whether the injury done be small, or great. If small, a fair amount of exertion can be taken without discomfort ; if large, the patient is sorely crippled. In order to limit the resultant injury, it behoves us to keep the patient at perfect rest ; not only until the actual inflammation has passed away, but while the process of consequential deformity is still going on. When the injury is done and over (be it great or small), then—and not till then—may we proceed to administer heart-tonics to build up the muscular wall. If we attempt to give tone to the heart before the mischief has passed through its active stages, we do harm ; and aggravate the resultant distortion and mutilation. However

much we may wish to rouse the patient, and restore him to active life, we must hold our hand and practise a masterly inactivity—as reason tells us; until the cell-growth set up by the inflammation has come to an end. When the injury is done and over, the sufferer is crippled in direct proportion to the extent of the valve-mutilation. Just as we saw activity develop in proportion to the development of valves in the heart; so in turn is it limited by any injury to these valves. The person with valvular disease of the heart is lowered (as to the capacity to sustain exertion) in accordance with the extent of the injury. A large lesion makes itself readily felt; while a small one is not incompatible with a fairly active life. It is not then merely the presence of valvular disease which must be made out; its extent also must be calculated. Speaking broadly, the larger the injury inflicted, the shorter the span of life remaining; the smaller the lesion, the longer the injured person will live. If the valve-lesion is progressive, then the injury waxes more and more; and the limits of existence are more quickly reached. Much more commonly the mischief comes to a complete standstill; leaving the patient more, or less crippled, as the case may be. The look-out, or prospects of the case turn largely on the question—Is the mischief static or progressive? The patient with a small static lesion has very good prospects of life; but that life must be a quiet one. So long as bodily quiet is maintained, the mischief is not felt. Desk-work is quite compatible with a certain amount of injury to the valves of the heart. A literary life is in the patient's favour. A number of persons, well known in literature, are, to the writer's personal knowledge, the subjects of some injury to their mitral valves. Before speaking further in this matter as to the regimen to be pursued in such cases, it may be well to say a few words on debility of the muscular walls of the heart.

The heart is a hollow muscle; and, as a muscle, its nutrition varies according to certain bodily conditions. The body wastes in fevers, and the muscles are felt to be small and flabby. So is the heart. The muscles generally are ill-fed (and consequently weak) after an exhausting illness, as diarrhœa. The heart shares in the general muscular debility. The body is ill-fed from mal-assimilation, and the muscles lack tone. So does the heart: only as its labour is unceasing, it is worse fed than the rest of the

muscles are; and, consequently, its debility is more pronounced. In most instances, such a condition passes away, and the heart regains its power, and its tone completely. In other cases, the result is less fortunate. Where the cause of the bodily weakness is in action for some time, the condition of the heart becomes permanent; and then the person is said to have a 'weak' heart. This is a heart which is unequal to effort, and which palpitates on any exertion. It is commonly found in women; and very often is linked with excessive monthly losses and with imperfect digestion. Women are more liable to asthenic conditions than men, and this depends on (1) less perfect digestion; and (2) draining discharges, weakening the organism. The condition of heart may linger, and remain after the causal condition which brought it about is relieved, or cured.

Whether it is 'valvular' mischief or a 'weak' heart, the owner of the damaged organ is constrained to lead a sedentary life. If a youth, he must abandon his athletic pursuits—a matter often felt very keenly. He must learn to substitute mental delights for bodily pleasures. He must adopt a calm reptilian existence, and 'level down' to his degraded heart. If he can be induced to adopt a quiet life, all will go well with him; and he must take his place among the brain-workers in life. If a girl, she must be largely a 'house bird,' and find in quiet occupations her pleasure in life. If she can draw, let her cultivate her powers; her heart will not prevent her becoming an artist. Music involves more exertion, and therefore must be cultivated in moderation. If she can wield a pen, she may see in it a livelihood. If she must teach, she must cultivate decorum, and be still and staid. Many young women contrive to get a considerable amount of satisfaction out of life even with crippled hearts. The danger lies in too great exertion, coupled with excitement, when the heart is so degraded. It may collapse suddenly: and this occurs at times (usually for perfectly intelligible reasons), though but rarely. It is only when the muscular structure of the heart becomes decayed that sudden death becomes probable. But 'fatty degeneration,' or rottenness of the heart-wall (as this change is called), is a disease which must be considered later on, when the diseases of more advanced life and senile changes come to be considered.

Young persons with impaired hearts pretty much carry their lives in their hands. If they lead a suitable life, they survive; if they lead an unsuitable life, it tells ere long. In both cases, much may be done by improving the condition of the heart-wall. In some valvular affections the heart-wall hypertrophies in order to compensate a valvular defect; and this 'compensatory hypertrophy' carries with it much power and energy. Niemeyer tells of a huntsman of the Greifswald, who, with extensive valvular (aortic) mischief and large muscular hypertrophy, went through the war of 1866 with impunity; being equal to any effort made by his comrades, whose hearts were sound. Of course, to build up such muscular growth in the 'weak' heart is to practically cure the patient. To do this involves (1) for a period of time complete rest, as a lessening of demand upon the heart; then moderate exertion, as the heart grows stronger. (2) The increasing of the energy of the heart-wall, which may be attained by administering general tonics, like strychnine; or the cardiac tonics, as digitalis, lily of the valley, or squill, or casca. (3) To increase the nutrition by a liberal dietary, and the administration of a blood-tonic, like iron. In order to secure improved nutrition, it is necessary to keep the assimilative organs in good working order. The value of fat in procuring healthy tissue has been insisted upon before, p. 31.

While all this is being done, we must not forget that any weakness of the heart is accompanied by loss of activity in the circulation; and especially venous congestion of the viscera. The portal circulation is sluggish, and therefore there is a tendency to disorder of the liver, to inactivity in the bowels; and, in women, to congestion in the reproductive organs. All of which has to be borne in mind, and allowed for in the medical treatment, and regimen enjoined. While the impaired heart is fairly well, these last matters may alone demand our attention; but when, from passing causes, the heart's energy has become temporarily further impaired, the other measures mentioned above become necessary. Many a patient comes into hospital with all the symptoms of cardiac failure, yet without any actual disease of the heart. In many a case, a heart has broken down under a severe spell of nursing; especially when the nurse has not had sleep for some time, or very little. Here, under rest and appro-

appropriate measures, the heart usually quite recovers its tone. This is well seen in a nurse well known to me. If she has had a hard case, she presents herself with a heart obviously dilated. After a rest the heart is all right. (This has occurred again and again during the last fifteen years; and the rapidity with which the heart recovers is somewhat surprising. If this be true of an uninjured heart, it is still more true of an injured heart. A patient with an old-standing mitral lesion is admitted into hospital with dropsy, and other outcomes of cardiac failure. There is no recent change in the valvular condition—no movement there from bad to worse; but the muscular wall has been enfeebled. The cause of this may be an attack of diarrhœa, or indigestion, or some want of food, or a bout of drinking, or over-demand upon the heart. Here, rest in bed, with a sufficiency of food, will often, without medicine, enable the heart to recover. Sometimes, indeed, active treatment is followed by disastrous consequences. Before asking a system to make an effort, it is well to see how far it is equal to it. If the organism can but barely exist, any demand upon it will be likely to depress it fatally. Rest in bed is sometimes all that is possible; and I have seen the administration of a cathartic sink a dropsical patient beyond a rally. When the strength is equal to it, then to purge sharply gives great relief, and is followed by a subsidence of the dropsy.

When there is a weak dilated heart, a long course of chalybeates may be essential to recovery. Fuller speaks of as long a period as four years elapsing before the desired result was finally achieved. Ferruginous and vegetable tonics steadily persisted in will often give excellent results, especially if resorted to at an early stage. If the state of dilatation is allowed to exist for some time before treatment is adopted, a reduction of the heart to its normal size is almost out of the question; and the patient remains an invalid, to a certain extent, for life. If the means are forthcoming for a quiet existence, then life may be prolonged indefinitely; but if such crippled person has to toil for a livelihood, then length of days must not be looked for. On the whole, however, the prospects of persons with 'injured' hearts, or 'weak' hearts, are much brighter than they were assumed to be not long ago. By further acquaintance with these maladies more can be done for the patient than of yore. Certain it is that persons with heart-trouble

do not die so easily as is generally supposed. Whether a person with a valvular lesion or a weak heart should marry is a matter for special consideration in each case. In many instances no ill-effect has resulted from marriage. Persons with heart-troubles are not specially anxious to get married ; while with the consumptive, the opposite is the case.

CONSUMPTION.

My experience as Physician to a Chest Hospital enables me to say that consumption is an eminently curable disease. While, on the other hand, it is a very common occurrence to find a consumptive person die. How is this apparent contradiction to be explained ? By the fact that the number of persons who die of consumption is small compared to the sum-total of persons who have, or have had, disease in their lungs. It is no uncommon thing when examining the lungs of a hale person of middle-age, to come upon traces of old by-past mischief in the lungs ; and on inquiring, to find that the individual had a severe illness in early days, and was held to be 'threatened with consumption.' It is said that one-third of all persons whose bodies are examined after death bear evidences of old, or of recent mischief in the lungs.

Remembering that this work is for lay as well as medical readers, some little account of pulmonary phthisis may not be out of place here. First comes consolidation of a portion of the lung by a growth of lowly tissue—how brought about it is not always possible to say ; but certainly some families are more liable to this than others. In some cases the new growth is so degraded, that it dies forthwith, carrying the body with it (acute, or galloping consumption). In other cases portions break down and are expectorated, leaving a cavity. In others the tissue merely renders a piece of the lung solid, and so useless ; doing no further damage. What the consolidated piece of lung will do, depends very much upon the family tendencies of the patient. In many cases the very existence of such mischief is unsuspected, and it is only discovered on examination of the chest. In others the trouble soon makes itself felt. Upon recognition the first thing to be done is to attend to the general health, and improve the nutrition in order to improve, or raise the lowly tissue as much as possible, and prevent its breaking down ; or, if there is softening

going on in the new growth, to enable the system to ride out the storm of hectic fever ahead of it. Sometimes under judicious treatment the softening areas dry up; and in after-years the patient expectorates a cretaceous mass, the earthy remains of a whilom tubercular growth. When the softening in the new growth progresses, the ulcerative process at its periphery eats its way into an air-tube; and by this means, when sufficiently broken-down, the softened matter is expectorated. Fortunately a different change goes on in the bloodvessels implicated in the new growth; their sides are glued together by adhesive inflammation, and the vessel is reduced to the condition of a cord, so that hæmorrhage is, really, a somewhat rare accident in phthisis. Under what circumstances it does occur need not detain us. (It may be said, however, that hæmoptysis often relieves the congested lung; while that form which is fatal does not usually occur twice.) While this softening and ulcerative process is on foot, there is sharp hectic fever, and the patient is in considerable danger very often, and frequently dies. When it is completed a cavity is left behind, and this may either (1) disappear by the walls coming together; or (2) may remain and develop a lining so as to be no source of further trouble; or (3) it may remain a ragged affair with offensive walls (swarming with bacteria), giving rise to a stinking sputum; or (4) further softening may go on in the neighbouring, and surrounding tissues with accompanying hectic. In the last two cases, 3 and 4 (which may, or may not occur together), the patient is an invalid, compelled to lead a sedentary life.

The consumptive differs from all others who are doomed to a sedentary life in a very important matter. In the consumptive the danger which especially overhangs life is failure of the nutrition. The patient has to be well fed above all things; and so long as the nutrition can be maintained, so long is the patient practically safe. The essential matter is the question of assimilation; and particularly the assimilation of fat for the formation of healthy tissue. At the risk of being rebuked for not attaching due importance to the bacillus of tubercle, I must insist upon this fact which has been borne in upon me by experience, viz., that when the first stage of lung-consolidation is established, what course the new tissue will take depends very largely upon

whether the patient is eating, and can eat fat ; or whether fat has been banished from the dietary. If fat is being taken the tissue does not break down, even if it be not absorbed. Indeed, when a patient so threatened with consumption is put upon an appropriate dietary (plus suitable treatment), including fat, the new growth not uncommonly begins to disappear ; and 'the lung clears up,'—the usual expression employed in such cases. If, however, as too commonly happens, all taste for fat has disappeared, the neoplasm sooner, or later breaks down ; and the patient becomes actually phthisical, or consumptive. Usually it is only when the lung is breaking down that the disease is spoken of as phthisis, or consumption. Hence the misconception which prevails. It is only when an advanced condition is reached that the morbid process is commonly recognised. A soldier is a soldier before he goes under fire. The mortality of soldiers under fire is widely different from the mortality of soldiers taken as a whole. The consumptive with softening tubercle is like a soldier under fire. Again, too, the simile holds good, for many a soldier comes out of battle unhurt, as does the consumptive when the walls of the cavity close up ; or he comes out slightly wounded, equivalent to a clean-walled cavity ; or badly hurt—a suppurating cavity ; or dies in time of his wounds, the equivalent of secondary softening in the walls of the cavity. The consumptives, as a class, are like the army, only a certain number are actually engaged in fighting at one time. Many a soldier never smells gunpowder : many a consumptive never reaches a stage of softening. Just as the soldier does, or does not receive orders to go to the front, so under favourable circumstances many a patch of lung never breaks down, which would inevitably go to the bad if the nutrition became impaired, or the digestion fails, or some demand is made upon the system, as over-exertion, or by a drain set up like diarrhœa ; or in women discharges connected with the reproductive organs.

When consumption is developed, then the tubercular individual is compelled to lead a more, or less sedentary life. Effort involves the risk of strain upon the circulation in the lung, which might break a weakened bloodvessel. Effort, too, is exhausting. Comparative rest is necessary to repair. Then it is incumbent to arrest all body-outgoings to the utmost. 'There is poverty from

waste as well as poverty from want.' Let there be no waste then! By such diminution of the demands upon the system we reduce the body-expenditure to a practicable minimum. If the outgoings be not stopped, feeding the patient is like pouring milk into a sieve. Diarrhoea, night-sweats, all discharges must be rigorously looked after. Then, and after then only, it may be possible to successfully increase the body-weight. The patient must be fed on the most nutritious food; and as failure of the digestion is a common occurrence in phthisis, the food must be of the most easily assimilable character. Milk, farinaceous food, fish, fat in all forms that can be borne by the stomach, form far more suitable food than pounded raw beef, the prepared peptones, bullock's blood, and the other nauseous foods which have been, and are still offered to the consumptive. Whatever the medicinal measures employed, from serpent's dung (advocated by one well-known but odd physician in the witness-box as well as in his consulting-room, upwards) the patient's nutrition must be kept up.

Sometimes there will occur but one development of tubercle, which will soften and be expectorated, the patient in the meantime having hectic fever and night-sweats, losing flesh rapidly, and being veritably in 'the valley of the shadow of death;' indeed not rarely succumbing to the strain on the system. But after the storm is over, and the symptoms have abated, the appetite returns, the patient gathers strength, indeed gets quite well; and marries in time, becoming the father, or the mother of a large family, according to the sex; no phthisical symptoms ever again showing themselves. This may occur with one member of a family, while another runs a longer course of softening, never well, never ill, for years; till at last a more severe trial than common comes, under which the strength is exhausted.

It is under this latter circumstance that the invalid may be compelled to lead a sedentary life. Care is essential to existence. There are no doubt a few of whom T. King Chambers writes, 'They have gone on with their professions, or business, or work; they have not "laid a knife to their throat," but have eaten and drunk like other people, and have enjoyed the gratification of their appetites. A patient of mine, over fifty, with copious pyoptysis,* and condensed lungs (of probably a tubercular nature)

* Pyoptysis, spitting of pus.—*Dunghiser.*

from his youth, has kept hounds, broken his bones like other Nimrods, contested county elections, sat in Parliament, enjoyed his champagne and other good things, but *never allows any doctoring of his chest.* That was all very well for him ; but he was the exception, and not the rule ! It is by no means either necessary, or desirable for the patient to be shut up in a room at a temperature of 60° Fahr., watching a thermometer till the dread summons comes. That is the other extreme. It is desirable, however, to seek a favourable locality, as gravel or a chalk down, and leave a low-lying, damp locality, especially if also the ground be clay ; but it is not necessary to go abroad to be fleeced and humbugged by a foreign doctor, who looks upon the English consumptive patients as so many geese laying golden eggs ; despite the amount of sunshine to be found in the high-lying valleys of the Alps, or the Tyrol. This may seem rather strong language to use ; but it is rather weak than otherwise as compared to the facts. There are many places at home, especially on the south coast, where English home-comforts, and an English doctor can be set against so many hours of sunshine. As one of our leading physicians puts it : 'The cases that get well at Davos are those which will get well at home under judicious measures.' And one cynical physician has said, 'It is rather an odd fact, that those physicians who are so fond of sending their patients abroad, do so little for them at home.' And it is a suggestive fact,—if the latter part of the statement is well founded.

Then the patient should take as much exercise as is compatible with his powers on the one hand, and his purse on the other. He must keep up his general health, even if at some risk to his lungs. Fashions have changed a great deal. The Dowager Queen Adelaide was sent to the 'sunny south' for her health ; living at a time when 'a mild air for the lungs' was in vogue. Now persons with phthisis are sent to a high-lying valley amidst mountains, in order to brace up the system. According to the different indications of each case, so should be the choice of which is best ; rather than fashion. Much would depend upon whether there was actual softening going on, or not. If softening was on foot, then there would be an *à priori* presumption in favour of a mild non-irritating air ; but no more. If all was static in the lungs, then a more bracing, and invigorating climate would suggest

itself. ~~But the choice would~~ not always be easily made. When exercise could be taken, the case would hardly come under the heading of a sedentary life; but when locomotion is limited, then the case certainly comes under that heading, and is one suitable for consideration here. As said before, the nutrition of the consumptive is so important that the dietary must be liberal; and if any upset of the digestion, or the liver, result therefrom, it must be dealt with on the lines laid down at pp. 68, 69. After that, a vegetable bitter, with an acid, would next be indicated; and when the tongue is clean, some iron after food. The iron might be given after food in a pill, with a little arsenic, with advantage. And on such management, on an English down, the patient will have quite as good, or, perhaps, even a better chance than in the sunshine of Davos with no medicinal management, or at least practically none: and this opinion is shared by patients who have tried both.

It is well to watch the tongue in all cases of phthisis (and some other chronic maladies as well!), and follow its indications. When there is a fur upon the tongue, a bitter tonic and an acid are indicated; while iron should be withheld. When the tongue is red, irritable, and denuded of epithelium, then a bland milk dietary is indicated, with bismuth and an alkali. If there be also some irritability in the bowels, then all meat-broths should be withheld. Of course, iron is contra-indicated when there is any irritability in the alimentary canal, or a foul tongue.

This, of course, is but an outline of the treatment of phthisis. One remark may be added of a negative character, and it is this, viz., give as little opium as possible where the question of nutrition is involved. Opium dulls the appetite, and palsies the liver; and the phthisic drugged with opium in the daytime 'for the cough,' will soon slip into the grave. It may be impossible to do without a little opium to procure sleep; but the cough is preferable to the opiate in the day—unless the patient is anxious to join the majority in the unknown land.

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AN INWARD COMPLAINT.

Many a lady suffers from an 'inward complaint': an expression which arose in the days when our knowledge of abdominal maladies was chaotic compared to what it is at the present time. Whether it was an ovarian tumour, a uterine fibroid, or other womb-trouble, it was spoken of vaguely and indefinitely, as well as mysteriously, as 'an inward complaint.' Certain it is there was some enlargement of the abdomen, with inability to get about. What other matters there might also be are comparatively immaterial, at least, to us here. The lady was restricted to a sedentary life, whether by reason of her incapacity to exert herself, or by the orders of her medical man. What has previously been said about vascular fulness in the abdominal, and pelvic viscera need not be repeated here (see p. 45), with the addition of a body of considerable bulk in the abdominal, or pelvic cavity, which adds to the congestion of the veins.

Any load in the bowels, or any flatulence, adds considerably to the discomfort which is ever present; and, consequently, the greatest attention to the bowels is requisite; and should be conducted on the lines which will be laid down in a subsequent chapter.

There is one point to be noted in connection with any growth in the abdomen, or even more, in the pelvis, which is too often overlooked, and that is a diarrhœa which is not a true diarrhœa, but really is connected with a loaded state of the bowels (pseudo-diarrhœa). It is this. Whenever the lower bowel is obstructed by anything within it, or pressed upon by a growth without it, only fluid motions can pass the obstruction. This is readily grasped. If a mass of hard fœces exist in the lower bowel, then only liquid stools can pass. Some time ago Mr. Allingham, the well-known rectal surgeon, told me a most instructive story. A lady had consulted a very large number of the most eminent physicians in town for diarrhœa. Every form and combination of astringent had been prescribed by one or another of them, but without the desired result being attained. At last, in despair, she consulted Mr. Allingham, thinking that something surgical might be beneficial to her. His first question was, 'Are the stools large, or small?' The answer was, 'All that is passed in a

day would not fill an egg-cup.' His next question was, 'Do you, or do you not, feel relieved after the motion has passed?' The answer was, 'The feeling of a need to go to stool is not relieved.' Then he knew that there was an obstruction in the bowel; and on examination found a hard mass about five inches long, and in shape like a flattened Bologna sausage, in the rectum. It was so hard that it could not be broken up, and had to be removed *en masse*, with the patient under chloroform. After its removal the diarrhoea ceased at once. In another case known to me, there was a tumour pressing on the lower bowel, so that only liquid fæces could pass. The man never, in the later years of his life, passed a solid motion. The fæces would accumulate in the bowel above the seat of the obstruction, and then at intervals a good deal of churning was experienced in the bowels, and the liquid fæces passed away,—causing what the patient called diarrhoea. The same occurs in stricture of the colon. How such a diarrhoea comes about is intelligible to the lay reader. The form in which Mr. Allingham couched his questions lights up a dark subject. When there is any mass pressing on the anal sphincter, a feeling of a desire to go to stool to get rid of it, spoken of medically as 'tenesmus,' is experienced. In our ordinary experience, it is a fæcal motion, and the feeling passes away with the motion when voided. But when the cause of the feeling is not removed, that feeling persists. In dysentery the tenesmus—despite the fact that the sphincter is relaxed, and all command over it is lost—is a great part of the sufferer's agony. A polypus in the rectum will cause the same thing. A retroverted womb obstructing the anus sets up the same phenomenon. A tumour in the pelvis will occasion the same feeling. When the diarrhoea goes on for some time, and yet no sense of relief is afforded by it, there is a presumption that the bowel is obstructed in some way, or other.

It is a great thing then to ascertain in any case of alleged diarrhoea (1) whether the stools are large, or small; and (2) whether relief is experienced by going to stool, or not. Very often such a symptom will put us on our guard as to the existence of a tumour before it is large enough to force itself upon the bearer's attention by its bulk.

On the other hand, constipation without this cleansing diarrhoea

is often set up by something abnormal in the viscera. Especially is this the case where the act of emptying the bowels is accompanied by pain. In painful conditions of the womb and ovary, the act of defæcation aggravates the pain, and so the patient goes to stool as seldom as possible. The bowels become loaded with fæces, and this makes matters worse. In one case, which came under my notice some years ago, there was a tender condition of the lower portion of the liver, and the passage of the contents of the ascending colon caused pain. This led to an accumulation in the bowel below, and this again produced persisting pain, only relieved by sharp purgation. By keeping the bowels freely open the condition was in a little time quite relieved. In all such cases it is well to explain the state of affairs to the patient, so that the pain caused by the curative line of practice may be borne willingly. When such explanation is tendered, then the suffering is borne as a necessary means to an end; otherwise the patient gives up the treatment to his, or her detriment, and to the discredit of the medical adviser.

It has been said above, that the term 'an internal complaint' is an indefinite term, belonging to a by-past time. It was probably used for uterine or ovarian trouble, and in a woman is also spoken of as 'a female complaint'; and chiefly when there was something abnormal to be found, especially some growth or enlargement. But probably it was also applied to other morbid conditions, such as a tubercular enlargement of the glands of the abdomen. This produces 'pot-belly,' or *Tabes mesenterica*. But other organs may be enlarged, and Mason Good, in his whilom famous 'Study of Medicine,' devotes a section of his work to 'Parabysma, Visceral Turgescence.' The liver may be enlarged, as it was in the notorious case of Lady Flora Hastings, one of the Queen's Maids of Honour, who was most cruelly charged with being pregnant; or it may be the spleen, the 'ague-cake' of Hindostan; or the glands, as pot-belly; more rarely the pancreas is diseased; or there may be accumulation in the small bowels of wind and fæces continuing for some time (of which one well-marked case has come under my notice*); or the omentum may be enlarged; or there may be a 'phantom tumour;' or the glands

* The case closely resembled an ovarian tumour until Dr. T. Keith put the patient under chloroform, when it disappeared for the time—to return again.

of the abdomen may be affected by cancer. In all such cases ~~there is what may be called~~ 'an internal complaint,' or abdominal enlargement, other than ovarian or uterine disease.

PARALYSIS.

A limb may be paralysed by something affecting the nerve supplying it; or it may be rendered more, or less useless by disease affecting the bones. When the disease lies in the nervous system, one or more limbs may be affected, as in paraplegia where both legs are paralysed, or in hemiplegia, where one side is affected. Paraplegia may be due to disease of the spinal column causing pressure upon the spinal cord. When the two lower limbs only are affected, the mischief is in the spinal cord: when one side is affected, the disease is in the brain; where the motor centres of the arm and leg lie close together. Sometimes the mouth is drawn awry, but this is not always the case. If the disease be in the spine above the arms, then all four limbs will be affected. Of course, such a condition might occur from disease affecting the brain on both sides, involving the motor centres. But symmetrical bilateral disease of the brain is eminently improbable. The pathological conditions under which cerebral paralysis usually occurs are the pressure of a clot from a ruptured bloodvessel, or a growth of tubercle, or a syphilitic gumma, or a tumour. When any of these press upon a motor centre, then the part to which that motor centre belongs will be more or less completely paralysed, according to the amount of pressure. The pressure is the usual cause of the abolition of function; and if that pressure be relieved, as by the absorption of the blood-clot, or the syphilitic gumma, then the part recovers its functional activity. In the recent famous case, where Dr. A. Hughes Bennett diagnosed the precise seat of a tumour, and its probable size, from the limited paralysis it set up; Mr. Rickman Godlee cut down upon the brain, removing a piece of skull, found the tumour as diagnosed, and extracted it; its removal being at once followed by extinction of the paralysis. That portion of motor area pressed upon by the tumour, when relieved from pressure, once more exercised its wonted sway.

A more serious form of paralysis is produced by softening. When there is disease in, or pressure upon, the cervical portion of

the cord, both extremities on both sides are paralysed; and the patient lives on a couch, being wheeled out upon it for an airing. When one side, or both legs are paralysed, locomotion is greatly impeded. Fortunately there is some movement possible in both hemiplegia and paraplegia. When there is paraplegia, the patient can wheel himself about in a wheeled chair, of which his arms are the motor power. In hemiplegia, a certain amount of recovery must have been attained before the hand can wield a crutch. Usually in hemiplegia the leg begins to improve before the arm; first the upper portion, the thigh, then the more extreme parts. Then the arms begin to improve, also from above downwards; and perhaps the fingers may alone fail to get well,—and tell, by their fixity, of the by-past stroke. Sometimes the arm remains useless; at other times the recovery is complete. All depends upon how far from disuse the motor-nerve tracts degenerate before the centres have recovered; and so are unable to transmit the messages from the brain-centres to the periphery. In cases of incomplete recovery the patient is seen to hobble along, hitching up the shoulder of the affected side, and dragging the toe of the 'bad' side at each step, so that the toe of the shoe or boot is quickly worn away.

In spinal disease the cause may be disease within the cord itself, or pressure upon it by disease in the membranes covering it, or osseous growths. Sometimes there is loss of power=paralysis; sometimes there is loss of co-ordination=locomotor ataxy. This last is a most interesting malady, giving rise to curious symptoms. The feet are jerked out rather than lifted, and the foot is brought down with a slap on the ground. Consequently the ataxic person is often mistaken for being tipsy. The sensation is affected, and, instead of feeling the ground, the patient feels as if walking on wool. Frequently there are sudden pains, sometimes so intense as to bring the patient down to the ground. If the eyes are closed the patient cannot stand; or if he gets up in the dark he is 'lost.' If you ask him to close his eyes and put his foot on a chair, he will lift the foot as high as the table. If, as Dr. Hughlings Jackson has pointed out, you ask him to perform the old Anglo-Saxon greeting (turned into contempt by the conquering Normans), now spoken of as 'taking a sight,' that is putting the thumb to the nose and extending

the fingers out, he will be found to be very clumsy, and perform the act with a certain amount of eccentricity. For long the malady is not sufficiently advanced to interfere with locomotion or exercise; but in time it interferes with the patient's getting about. Recently a case came under my notice in a country squire, who is reduced to two sticks in walking, yet he hunts by means of some attachment to his saddle. In reply to an inquiry, 'How do your stirrups feel?' he answered, 'I don't feel them.' Certainly here it could not be said that the patient led a sedentary life; but most men would give up hunting before they reached the point of not being able to feel their stirrups.

Wherever the locomotion is interfered with, then the visceral troubles which follow in the wake of lack of exercise begin to show themselves, and require attention. It is a matter of comparative indifference whether the patient cannot get about from want of breath, or lack of power of motion. In either case bodily inactivity is entailed; but where the breath is short, either from disease in the lungs, or in the heart, there is a greater tendency to venous fulness. Carriage exercise is alone possible, and where there do not exist the means to procure this, the patient is largely confined to the house.

BLINDNESS.

That the blind can get about is a matter of everyday experience. The late Postmaster-General, Mr. Fawcett, after being blinded incurably, could ride, row, fish, and skate, as before his accident. But then he was a phenomenal person. When it occurs in youth, the blind person learns to get about, the other senses becoming (as in the bat) more acute, to compensate the loss of the important sense—sight. But when the sight fails to the point of partial or complete blindness, which no spectacles can relieve, all the more if the person be up in years, then a condition of helplessness is set up, which greatly interferes with exercise. The other senses do not accommodate themselves as in youth; and the older persons are less self-reliant as the consciousness of failing power settles upon them. It is all very well to have young eyes to see for them, and a blessing it is when these are available; but the sense of helplessness is unpleasantly sharp all the same. When the power to get about is so limited, then troubles in the digestive viscera, as constipation and flatu-

lence, begin to manifest themselves. When a man has led a very active life, as in travel, and suddenly settles down to a sedentary life, as writing out his notes and compiling an account of his travels, he finds that the change of life has a marked effect upon him, deranging his internal arrangements. And so it is with anyone else who has to exchange a life of activity for one of inactivity. When waxing blindness is the cause of such change, the attention is so taken up with matters connected with the waning sight, that the condition of the bowels is apt to be overlooked; and, consequently, is not attended to as it ought to be.

Indeed, in all cases where some condition elsewhere is the central point of attention, the bowels are apt to be forgotten until the condition of them becomes such as to compel attention to them. But it is very much better to take the matter in time, before piles are developed, or the anal lining membrane is fissured, or there is prolapsus recti; or, in women, uterine disturbance is set up—than to wait until such complication is added to the constipation. The relation of the brain to the bowels is such that active peristalsis has an excellent effect upon the brain, and so is good in apoplectic effusion; while free purgation in any trouble affecting the lower portion of the spinal cord is of decided service. Where any obstruction in the bowel exists, it is well to liquify the *faeces*, in order to admit of their ready escape. In conditions of cardiac weakness, all straining at stool is fraught with danger—the amount depending upon the condition of the muscular wall. While, in all restricted motion, the state of the bowels is a great matter as regards the comfort of the individual.

A SEA-VOYAGE.

It is now quite common to hear of a sea-voyage being advised for sundry sick persons; or being taken upon the individual's own responsibility. This is largely due to the increased accommodation afforded in modern vessels; but still more to the introduction of steam, which enables the length of time to be measured with considerable exactitude. With sailing-vessels an approximation to the duration of the voyage could be struck as an average; but this did not forbid much eccentricity as regards the duration of any individual voyage. Contrary winds would upset any

calculation, and Eolus is an uncertain deity. Now, however, except at rare intervals, the huge steamers of the various lines keep their time nearly as well as express trains, and offer the greatest facilities for a sea-voyage. And of these facilities many persons now freely avail themselves.

It is especially with diseases of the chest, and most of all pulmonary phthisis, that a sea-voyage is associated. The effects of climate in the treatment of diseases of the chest have long been known. In certain lung conditions, especially that of softening tubercle, a mild balmy air is very soothing. The old East Indiaman was a fine roomy sailing-ship, keeping very fair time—as we would say in speaking of a coach or a train—in consequence of the trade-winds. It afforded easy opportunity for a voyage to Madeira or the Cape, and many consumptives took advantage of this route. But since the opening of the Suez Canal these places have been comparatively neglected; though the air of the Cape bears an excellent reputation in phthisical cases. Then, as our communications with Australia became more frequent, it became fashionable to send persons whose lungs were affected out there for a time; usually with excellent effects. Many indeed owe their restoration to health to the fine air of that country. Now a voyage into the Mediterranean, to Gibraltar and back, or to the Cape, or South America, is a common prescription in cases of overwork, or in the convalescence from acute disease; indeed, whenever a rest and a change of air are indicated. Longer voyages are recommended in cases of more protracted overwork.

The advantages of a voyage in cases of overwork are obvious. There are no telegraphs in mid-ocean, and postal interchanges are fitful and irregular; so that no communication is practically possible with business and correspondents. The jaded man is in his right place on the deck of an ocean-going steamer. So also is the consumptive—provided that he can keep the deck; but if confined to his berth, then he has missed his way on the road to health. It is this risk which has to be encountered that has to be taken into consideration in every case which is at all advanced. If the patient can keep the deck for hours, breathing an air ideally perfect, blowing over the salt sea, and so taking in ample stores of oxygen, then the voyage will be most restorative. But if the health yields, and the invalid is confined to a very

limited berth, then the aspect of the case is far different. The air is far from invigorating, the appetite is feeble, the life is dull and monotonous; all circumstances acting prejudicially upon a phthisical person. In such case it is matter for regret that the voyage was ever undertaken. If the health become seriously impaired, and the patient be permanently confined to his bunk, then the absence of home-comforts is acutely felt. It has not yet become fashionable to send persons with injured hearts to sea, nor is the good to be derived from change of air so palpable as in chest-mischief involving the lungs; but the same risk of being confined to the berth overhangs them both. And this risk is a matter to be carefully calculated in every case where a sea-voyage is contemplated.

There is another matter connected with a sea-voyage which brings it within the range of a sedentary life; and that is the constipation it so commonly induces. The exercise is necessarily limited to the routine walk; which can be kept up indefinitely if the voyager be so willed, and the weather permits. But the capacity to take such exercise may be limited by the patient's powers, and a seat may be acceptable. The sea air is there, and that is a good thing; but too much sitting produces its wonted effects in inducing a sluggish state of the bowels. Whenever the weather is unfavourable, a sedentary life is imposed of a very severe character. It is impossible, simply, to get about, while the culinary arrangements keep up to their wonted high standard. The meals are the events of the day; and a liberal dietary added to enforced bodily idleness leads to further loading of the bowels, with derangments of the liver.

Consequently a sea-voyage is a matter which involves several points of moment, and deserving of thoughtful consideration. If the weather could be guaranteed—the one matter which has so far baffled the indomitable Anglo-Saxon—then it would become possible to decide the question of the advantages to be gained from a sea-voyage; and to calculate the benefit which would probably be derived from it. But as matters meteorological are but yet in their infancy—as a science at least—and it is impossible to forecast the weather, a large element of uncertainty overhangs—not the question of the desirability of a sea-voyage—but its probable effects upon the health.

CHAPTER XIII.

SEDEBTARY AMUSEMENTS.

THERE are, too, indoor amusements which can be carried to a length prejudicial to health ; and such is not uncommonly the fact. In a recent chapter the subject considered was inactivity due to some bodily cause ; now the subject is a life of too great bodily quiet from spontaneous choice. The first of these is the extensive, and wide-spread devotion of women to stay-at-home diversions ; especially young unmarried women. They may eschew the novel, and occupy their time in other, and, as they think, useful employment. They devote their spare time to working slippers (said to be a common way of paying court to clerical gentlemen), or to other needlework ; or lace-making, or embroidery, or anything else which keeps the hands employed : pretty much on Dr. Watts's theory, 'that Satan finds some mischief still for idle hands to do.' But busy hands are not incompatible with idle brains, and it is there the father of all evil is wont to perch. To be industrious looks well ; that must be admitted. But personally I am inclined to have but a poor opinion of the young woman who is never to be found without a piece of work in her hand. Some years ago the writer was one of a party from Ryde to Alum Bay by steamer. It was a lovely day in later August ; the scenery was exquisite either by land or water ; the scene was historical from the time when the Jutes settled in the Isle of Wight—indeed, since Roman times, from the Roman remains found in the island ; the people on board were a study for any one with an eye for character : but all went for nothing with a very proper young woman, who industriously plied her needle on some small feminine frippery the whole of the voyage. Possibly her spinster aunt held a very different estimate of her merits

from mine. The young person who cannot rise above needle-work is scarcely likely to make an excellent housewife ; while the red tip to her nose is significant that her bowels are neglected. This may be a harsh judgment, if made too sweeping ; but it is near the truth too frequently. There is something subordinate in her composition ; and ill-health will dog her all her life from neglect of hygienic, and sanitary precautions.

Then there is a person of higher intellectual grade who is engaged in drawing and painting. This is an admirable means of killing time ; and, what is more, if a certain aptitude can be attained—the occupation can be made a source of income—often very acceptable. Where the lady is an artist, she will probably find a considerable amount of exercise in getting about ; whether she goes to some picture-gallery, or takes her pencil and sketch-book afield. It is rather when the pencil, or brush is taken up at home, in order to fill up the interval betwixt meals, that the pictorial art is apt to exercise a pernicious influence over the health. Standing at the easel is less injurious than the sitting position, but both entail much bodily quietude. What has been said before about the clerk and men in offices applies here, as to the laying up a store of oxygen in the tissues at some time in the twenty-four hours. Where the art-life is intense, the more necessary is it to set aside a certain portion of the day for the purpose of taking in oxygen ; and for that exercise which is so good for the viscera. (The bold assertion of a nomadic American lady-doctor that active exercise is injurious, and creates a liability to uterine disease, is as false as it is impudent in its mendacity.) It is the more necessary to insist upon this, in the writer's experience at least, because their devotion to their art is such, in many cases, as to carry them away from such other considerations as their health, and what is due to the body.

Sedentary amusements in the evening are less injurious than are those which involve the day. Chess, backgammon, draughts, cards, the time-honoured games of indoor life, have been supplemented by many modern games for exercising the intellect in an entertaining manner, and amusing the young. For this latter end, and for the entertainment of invalids, many self-sacrificing women have endured all the discomfort of a life lacking in bodily exercise ; and they claim our sympathy. Like much more self-

denial in life, it is admirable and commendable from every point of view—but that of hygiene.' Frequently and commonly the reason for consulting a physician is one worthy of all honour. But Nature knows nothing of extenuating circumstances. 'The expansive energy of steam will slay not only the wicked engineer who has neglected his boiler, but also the innocent children peacefully playing on the deck overhead.'

'Streams will not curb their pride,
The just man not to entomb,
Nor lightnings go aside
To leave his virtues room.'

So it is with the bodily health. The motive which inspires the conduct has no influence over the physical results which flow therefrom. The lady who, from self-sacrifice, incurs the penalties attaching to a sedentary life, suffers as much bodily therefrom as the other lady who lies on a sofa defiling her mind with impure novels.

Very frequently these evening amusements indicate rather intellectual poverty than anything else. 'They keep the young people at home,' pleads a mother whose intelligence is hen-like. She is keeping her boys from the wiles of designing young women; she has her girls under her watchful eye, and if suitors seek them they must come under her sagacious inspection. Very likely! But after all the stamp of mediocrity is on it. A narrow intellect, a cramped mind, a shallow foresight, govern it all. Such intellectual coddling will never develop a robust mind. Certain positive physical drawbacks attach to this scheme of doubtful psychical advantages; and broken bodily health is not compensated by a strong intellect. I have no wish to be offensive to a class of persons who themselves have no desire to offend. The motive ruling all is excellent; but the whole thing is rather feeble, and injurious to bodily health.

Then there are musical families, and musical evenings. This is very delicate ground on which to tread; and censure has been meted out to the writer for his criticisms upon musical tastes before, rather unsparingly. His offence then was a statement to the effect that excessive devotion to music interfered with the cultivation of the mind in other directions; a self-obvious truism. If music be indulged in in moderation, there can be no possible

objection to it; unless it be a carping criticism that music tends to a subjective state of self-approval, which finds its acme in the man who sings tenor in a chapel choir. But when some hours a day are devoted to musical practice, these must be given to it to the exclusion of other studies; while the amusement entails the music-stool, and thereby an absence of exercise. When such portion of the day devoted to sitting is followed by a musical evening (for which the practice is but the preparation), then the want of exercise involved therein must in time affect the general health. There are, too, some associations of music with the emotions and passions which also tend to derange the health; and of which something appears from time to time in the medical journals, which make it desirable that musical people should take a distinct amount of exercise, in order to maintain the health; and that this is especially true of the female sex.

In all that is written here, there is no intention to gird at conventional occupations; or to hold up to derision a large class of persons who are socially inoffensive. When the preacher tells his well-dressed congregation that they are 'miserable sinners,' he has no wish to be offensive personally to a well-to-do assembly not specially conscious of a sense of sin. But according to the Christian verities it is his bounden duty to address them as such, and he speaks accordingly. So here, sedentary amusements and the people who adopt them, are viewed from a strictly hygienic standpoint. The preacher is not critical as to his flock, he is merely speaking as a Christian preacher, without reference to the personality of any individual present, when he speaks of their carnal desires, their sins of omission and commission for which they seek forgiveness formally. If any one of them took what is said in the Liturgy to himself or herself, and felt a sense of personal injury from the words of Archbishop Cranmer, probably the preacher would not hold himself personally responsible for the offence given—or at least taken. Nor would others hold him blameworthy. So in the present case, the writer is not stabbing with his pen a number of amiable persons; he is merely pointing out that from a hygienic point of view their amusements are antagonistic to their bodily health; and that position he is prepared to maintain if assaulted. He is merely a 'physiological preacher.'

CHAPTER XIV.

KEEPING A CARRIAGE.

A CARRIAGE is often a doctor's true friend. Not exactly when he starts one himself to let people know that he is getting on in the world ; but when people who have got on start a carriage to acquaint other folks with their success. This last it is which often helps the medical man to keep his carriage in turn.

It is scarcely fair to speak disrespectfully of a vehicle which carries with it so much satisfaction to the proprietor, and such prospects for his family medical attendant ; but a carriage is often a very unwholesome addition to a man's properties. It may be that increasing engagements, and the necessity to economize time, compel a man, other than medical, to start a carriage. It may, indeed, be essential to do so ; but if this leads to neglect of bodily exercise, it is detrimental to the health. More frequently a carriage is set up to gratify the vanity of the rich man's better half, in which she can drive about, the envy of her less wealthy neighbours—until she gets her liver into a bad condition. It is no doubt a gratification to drive about indifferent to the condition of the streets and roads ; and most women feel a sense of fitness for occupying a corner of a carriage. That must be admitted. There is, too, a sense of dignity in halting at the linen-draper's, and leaving the carriage waiting while the lady inspects the linen she is proposing to purchase for a complete new household outfit ; or gracefully reclining in her equipage, the stationer waits upon her obsequiously, and brings out his varied wares for her inspection. This is no doubt excellent from a social point of view ; but is hardly so satisfactory from a hygienic standpoint. To a lesser extent this vehicle is injurious to the junior members of the family, who ride when often they should walk. But it is

the lady of the house who suffers most, and pays dearest for the gratification of her vanity. She gets the air, doubtless, and the storage of oxygen is a creditable and excellent act. But even this could be all the better executed upon 'Shanks's pony'—her own legs.

Then paterfamilias, too, he is impressed with his spouse's argument, 'What is the good of having a carriage if we do not use it?' He is not prepared with any counter-argument, by which he can traverse hers. So he drives about when often he might walk for the good of his health. If the two use their carriage to drive out into the country, and have a walk in the pure healthful air, then, as a means to an end, the carriage would have a solid argument in its favour. But how seldom is this the case, or the carriage turned to any such use; while infinitely more frequently it is taken out in order to go a-shopping, when this could be much more healthfully done on foot. Or when the carriage is used for a fairly legitimate purpose, how often is it the cause of further delay in ill-ventilated rooms, which would be left behind all the sooner if it were necessary to walk home; but because the carriage is waiting, it is possible to tarry in the vitiated air a little longer. No doubt it is human to look with satisfaction upon a handsome equipage, and note how well ordered all is, and, further, to feel it is your own; but it is apt to be a gratification dearly bought in more ways than one.

If when a carriage is started the subject is well considered and weighed in the balance, and it is seen that such lessened exertion should be met by a reduced dietary, much evil would be avoided. But this is a consideration never taken into account. As a part of progressive wealth, it is more likely that a new and more skilled cook is engaged, and more entertainment indulged in. As like as not—or liker! And then betwixt diminished exercise, and a still more liberal dietary, the livers of all become embarrassed; and then another carriage is pretty frequently at the door. Such is the history of hundreds of families where toil and patience have led to the accumulation of wealth. If there be not also that intellectual culture which enables people to make a good use of wealth, what does affluence involve? A better, or a bigger house; more costly food and more expensive drinks; better and dearer clothes; and reduced locomotion from the possession of a

carriage. The new forces in action will sooner, or later lead to disturbances in the assimilative organs; or, if these can sustain the new burden laid upon them, plethora, or the full habit, is set up. As the outcome of this, again, it becomes necessary to visit some health-resort where there is also a mineral spring, and 'take the waters.' So when the days lengthen, all who can get away betake themselves to the heights about Egra, to Marienbad, or Franzenbad, or further into Bohemia to Carlsbad; or perhaps to Barèges, or to Homburg, or Aix-la-Chapelle; and put themselves through a curative course. This gives them the advantage of foreign travel, and adds to their material for conversation; and so is beneficial in several directions. Or the matter of their health becomes so important, that after several family councils, it is decided to abandon their home, and purchase a new one on the slopes of Harrogate, where they can breathe the air of the Yorkshire hills; or to take up their residence at Leamington, or Cheltenham. Having impaired their health by compliance with one social custom, they go in search of it according to the most approved modern fashion. The three directions which disturbance of the health will take, where a redundancy of food is accompanied by an insufficiency of exercise, are biliousness (which has been treated of); gout (which will engage our attention later on); and plethora, or the full habit, which may be advantageously considered at this point.

THE FULL HABIT.

As the farmer fattens his stock by a liberal supply of food, so the first effects of a liberal dietary ordinarily are a well-fed physique, *i.e.*, if the assimilative organs are equal to the demand upon them. With fat stock the butcher's knife is before them as soon as they are fit for it; their fate is soon settled. But with human beings this is not the case. They wish to preserve life. So their overfed condition goes on until some trouble, or other, manifests itself as the outcome thereof. I shall, in illustration of what must be insisted upon, here make several quotations from an authority who paid great attention to this subject; in preference to using my own language—being myself of the full habit, and practising what will be here preached to others. He says: 'The earlier deviations from a healthy state take place so

gradually, and the constitutional effects are so feebly exerted, that for a long time they are nearly unnoticed. Health is observed to be less perfect; there is occasional languor and disinclination to the customary exertions, with irregular distribution of blood, as marked by coldness of the feet and variable countenance; the bowels are irregular, the appetite is capricious or fails, and both flesh and strength decline.' This is one aspect of the subject, viz., where the assimilative organs yield under their burden. The food is no longer properly elaborated in the body, and so the tissues are ill-fed, while the blood is laden with effete matter, which old Sydenham called 'crudities;' and more modern men term 'liver stuffs.' To make another quotation: 'Considerable variations are liable to occur in the quantity and quality of food which any individual consumes, in the assimilating processes by which what is taken into the stomach is animalised and fitted for repairing the waste of the system, and in the several secretions in which the blood is expended. If more food be assimilated than the ordinary waste of the body requires, a state of repletion must be the natural and inevitable result. But repletion may also take place under a moderate and even abstemious use of food when, from sedentary habits, inactive life, or other cause, appropriation of blood by the nutrient and other secretions is languid and insufficient. As repletion, then, may take place under very different circumstances, so is its presence marked by different phenomena. Whenever it arises, one of two consequences is sure to result: either it excites the several functions if sufficiently healthy and vigorous to increased actions, leading to its speedy appropriation and removal; or if these be weakly and unable at the moment to institute and support these increased actions by which the redundant matter is to be appropriated and expelled, then, oppressed by a labour to which they are unequal, they manifest a decline of even their ordinary power, and all the outward phenomena of debility are displayed. To discriminate this state from one of real debility arising from exhaustion of animal power, or from defective nutrition, is a matter of practical importance not inferior to any which medical science may be engaged in illustrating.'

Who of any experience does not recognise the two classes of which shrewd old Dr. Barlow, the Bath physician, here speaks?

First, there are those who seek in voluntary exercise that demand which strikes a balance betwixt the body-needs, and the liberal quantities of food indulged in. One can see the portly dame coming in from a long walk with her ruddy-faced daughters, the types of robust health and strength; while the male members of the family have been proportionately exercising themselves in their own way. Such a family boasts of want of familiarity with a doctor, as paterfamilias will tell you in loud hearty tones. The object in life (or at least an important one) is keeping themselves well, *i.e.*, meeting their meals by severe exercise. I can well remember an old gentleman in the North of England, who loved his food. From early morn till dewy eve he walked about here, there, and everywhere, in order that he could sit down to dinner in the evening, and enjoy the cook's labours to the utmost with impunity. His life centred round his dinner. It was certainly not a noble life—but it was a long one. See the county people assembled at a meet of hounds, with their robust health. They have no need to seek an appetite, as they express it; but by severe exertion they endow themselves with the power of using up the food they eat.

Then take the other picture of those in whom the assimilative organs are unequal to deal with 'the redundant matter which must be appropriated and expelled,' and a state of pseudo-debility is instituted. An instance of this is to be seen at any time of the day at any watering-place, or health-resort. A lady, often somewhat corpulent, leans back in her carriage and seems bemoaning her lot. The carriage is driven slowly, because of her nerves. Her horses are sleek; but the coachman looks as if he was rather worried. Her face is either bloated or pale, and looks as if the skin would run water if scratched with a pin; or as if an attack of erysipelas would be induced by a drive in a cutting wind. Her talk is of her debility, her inability to acquire strength despite all the tonic she swallows, and the labours of her cook. She seeks strength; but does not find it. Her digestive organs 'manifest a decline below even their ordinary power, and all the outward phenomena of debility are displayed.' She is an object of profound sympathy in her own opinion; and often gets the sympathy she craves for. Yet if she had a mercurial pill every other night, and a dose of sulphate of soda every morning, she

would be astonished to find how soon she would pick up strength; especially if she were also at the same time put on a restricted diet of fish and cereals. She would soon find herself largely free from the oppression she complains of so piteously; her palpitation would be found to be less distressing; she would be able to go upstairs without shortness of breath; indeed, she would soon experience a return of sensations to which she has long been a stranger. If after that she would visit a hydropathic establishment and undergo its regimen, she would feel infinitely better; and the expectations of her heirs-at-law, or her legatees will be damped. In fact, in search of strength she has pursued a diametrically wrong line; a line which has made her a confirmed invalid instead of building her up. A short time ago, in an address to a Medical Society, Sir Andrew Clark gave a vivid account of a gentleman in South Wales, who, after indulgence in the pleasures of the palate, became bloated and puffy, and suffered from a distended condition of the chambers of the heart, until life had no pleasures for him; but who quickly lost these uncomfortable symptoms on a restricted regimen. After beginning to feel well again, he would lapse and indulge, with the wonted consequences; and this went on repeatedly, but without experience teaching wisdom.

Now what says Dr. Barlow about the consequences of plethora? 'It may be doubted whether any disease, excepting such as results from a morbid poison, ever takes place suddenly, or without previous derangement of the general health, cognizable by its appropriate manifestations, and capable of being corrected so as to obviate the morbid accession to which it leads. If this can be demonstrated, it is clear that this introductory stage of disease is of the highest importance, as being that to which prophylactic treatment can be most beneficially directed, and also as forming a part of the ensuing disease essential to its complete history, and without a knowledge of which its intimate nature or the series of morbid changes never can be thoroughly understood.' Such a definite expression of opinion appeals to one's own experience. Apoplexy, aneurysm, angina pectoris, sudden death from failure of power in a fatty heart—all are the outcome of a full artery; and a full artery is, in turn, the result of the blood being highly charged with a nitrogenized waste. If the last could have

been removed, all the rest could have been avoided. It is only when some untoward accident happens that medical aid is called in. 'Until this period arrives, medical aid is rarely sought for ;' and when it is called in, it is too late to be of much service. These grave diseases of advanced life are the outcome of a condition readily amenable to treatment—if taken in time.

Some years ago a stout Yorkshireman came to consult me about his health, which had begun to cause him some anxiety. He was a free liver, and had for a year or two past made much use of his carriage, even driving from his residence to his place of business. His arteries were tight, and his heart large and powerful. A complete reversal of his recent life was advised, and acquiesced in ; it being explained to him that he was in danger of apoplexy from his large heart rupturing one of the vessels of the brain. A letter was written to his brother to this effect, fortunately for the writer ; as the patient wrote home in high spirits. He went away resolving to eschew his carriage in future, and walk to business. He walked off across Hyde Park full of good resolutions. Two days later his son came to me for a death-certificate, to my horror and surprise ; knowing something of the family. It turned out that he had eaten a hearty supper of meat, gone to his hotel, had a glass of brandy and water, and retired. Next morning, no reply being returned to the knock to arouse him, it was repeated without result ; the door was broken open, and he was found dead in bed. The doctor who was called in decided upon its being necessary to acquaint the coroner with the case. My certificate was held to be insufficient. A post-mortem examination was made ; the heart was found much enlarged, while there was a large blood-clot in the brain from a ruptured artery. The good resolutions came too late !

Another danger of the full habit is the yielding of the arterial wall, and the formation of an aneurysm. This, however, is most likely to happen when exertion is undertaken. The arterial wall may crack under the influence of a blow, or a shock, as, a fall in the hunting field, or even from severe effort. A case of this last kind came under my notice some years ago in a militia sergeant who was an out-patient at the West London Hospital, at the time when the writer was connected with that institution. He was a man of considerable activity, but still of high complexion and

~~full habit, and when~~ ordered out for the autumn manœuvres made vigorous efforts to keep up with his companions. The result was an aneurysm of the ascending aorta, which placed his life in continual jeopardy. It improved under treatment, and continued in a satisfactory state for several years; but compelling the greatest care on the part of the patient. On leaving the hospital the case was lost sight of, and its further history is unknown.

Then angina pectoris is another danger of the full habit; especially in advancing years, when the heart and arteries are no longer structurally sound. In my early days of practice, an elderly farmer, of heavy build and full habit, was seized with a sharp attack of angina pectoris; which passed off, leaving nothing behind it—but a memory. While the remembrance of the agony remained fresh, he followed out the regimen prescribed for him, and took medicines to keep his blood free from excess of nitrogenized waste. As no second attack appeared, he grew first careless and indifferent, and then incredulous and sceptical. He and his friends had made themselves quite sure that the view taken of his case was erroneous; and were resenting it as an unnecessary scare, when, after a solid dinner, a second attack came on, which laid him lifeless on the floor before a messenger for me could leave the farm-yard. Then, when too late, his friends would have given anything to have followed the advice they had previously spurned.

These cases, and they are but typical instances of many, illustrate what Dr. Barlow said—that until the period of some untoward outcome of the full habit has occurred, medical aid is rarely sought. In each of them, attention to the condition of the blood, which stood in a causal relation to all of these serious states, would have averted the consequential trouble; and this could have easily been done in each case.

In other cases, there is that condition of pseudo-debility, of which something has been said above. Not unfrequently the dusky complexion tells of effete matter in the blood in excess; the lips are blue, the features blurred—like an indifferent photograph; while little arterial twigs can be seen on the cheeks, and nose, suddenly piercing the skin and pervading its surface, their distended condition telling of arterial fulness. Especially are these purple twigs noticeable where there is pallor of the com-

plexion, against which they stand out in bold contrast. The arteries are usually thickened, and sometimes are hard ; while the temporal artery can often be seen tortuous and meandering over the temple. The heart is usually enlarged : there may, or may not be, hypertrophy, but there certainly is dilatation. The bulk of urine is commonly small, while it is of high specific gravity, and laden with urates. Usually, too, the patient gets up at night to make water. Sometimes a condition of large bulk of limpid urine alternates with this condition of scanty urine. In ladies especially there is breathlessness with palpitation in effort.

Such a condition involves two distinct lines of management. One palliative ; and one curative. It is well to give a mercurial at bedtime, with some sulphate of soda and Rochelle salts next morning, about twice a week ; with some lithia, or potash twice a day, well diluted. That will keep the blood fairly clear of accumulations of waste. The other is to diet the patient. Cut down the lean of all butcher's meat to the practical minimum ; allow fish, chicken, or game ; plenty of vegetables of all sorts ; fruits, and fats. Let the patient have a little poor claret, or a small quantity of spirit, with Vichy, Vals, or Marienbad water. No malt liquors. And as soon as the condition begins to improve, let exercise be taken, proportioned to the powers. Where there is some obesity, the heart is probably encumbered by a deposit of fat upon it ; and steady exercise will reduce this, after which the heart will act more freely. Such a line of treatment does not necessarily involve a visit to a German watering-place to take the waters and baths ; though these are useful adjuncts, no doubt. The carriage should be used sparingly, and only when the distance to be traversed is clearly beyond the patient's powers. Of course, when an aneurysm is developed, the utmost quiet is desirable ; while the blood-pressure in the arteries must be kept low by a spare dietary, and vascular depressants.

Where there is a tendency to the full habit, great moderation in food and drink should be practised, involving a great deal of self-denial on the part of the individual ; but the result is worth all the pains involved. The sense of lightness, the capacity to get about, the better spirits which are the outcomes, are a sufficient reward ; while beyond lies the lessened liability to these serious outcomes of the full habit, which have been spoken of

above. The case of Lewis Cornaro is well known, and is a very instructive one. He found himself advancing in years, and becoming unwieldy in bulk, as well as in an unsatisfactory state of health. So he altered his regimen, and took but twelve ounces of food daily, chiefly vegetable, and fourteen ounces of light Italian wine. On this spare dietary he regained his vigour, living fifty-eight years after its adoption, with excellent health ; preserving all his faculties so that he wrote his autobiography when over one hundred years of age. The more nearly the regimen approaches that of Cornaro, the better the prospects of health and longevity.

CHAPTER XV.

A BROKEN LEG.

ANOTHER form of sedentary life which is apt to be suddenly developed is some accident limiting locomotion, of which a broken leg is the type. Of course it may be a sprained ankle, or a bruised foot, or a lamed knee; but in all cases the patient is confined to the house, and, if the limb be broken, to bed. It is a perfect revolution in an active man's life to break a leg and be confined to bed. The shock, the weariness from the pain in an outraged periosteum, at first render rest in bed acceptable enough. But after a few days the pain of the bruising is mitigated, affairs have become arranged, and the mental worry is allayed; and a condition of restlessness supervenes. If the patient be a man in robust health, of active habits, and a good feeder, and his appetite remains fair, then his condition becomes one very irksome to him. A grain of opium at bedtime helps him to secure a good night; but this is apt to lock up his bowels, *plus* the lack of exercise. Of course it is not desirable to open the bowels, as emptying them in the recumbent posture is difficult; and it is desirable that the patient be disturbed as little as possible. (Still more important is this when it is the thigh which is broken.) The dietary must be simple, and non-stimulating. In bed the body-expenditure is reduced to a minimum, and the wants—*i.e.*, the real needs—of the system are very small. A frugal dietary is all that is required. Farinaceous foods, and fruits are about all that is indicated. If there be too great bulk of food, then the bowels will be loaded, and require resort to the bed-pan; and this should be avoided in the interests of the fractured limb. Then the food should not be too stimulant, as that would but add to the restlessness, and the irksomeness of confinement to bed. The patient is far best kept

on a low diet, both for his own sake, and that of all about him. If too much albuminoid materials be furnished to the blood, there will be an accumulation of waste in the blood; the body being unable to burn up the surplus of nitrogenized materials when no exercise can be taken. The patient, indeed, should be put upon half-rations, or even less than that, if he wish to feel fairly comfortable, and not quarrelsome with those around him. Indeed, for their own sakes, the attendants should look to the dietary; for if a man have too much waste in his blood he becomes irritable or waspish; and if he is confined to his room he can only quarrel with those at hand.

This is the medical aspect of a broken leg, and it is a not unimportant one. The surgeon may have his eye upon the fracture and the progress it is making, but the medical aspect of the case is apt to escape his notice; and yet it is a material matter as regards the comfort of all. For if the bodily condition become one of discomfort, then a restlessness is set up which is deleterious to the progress of the reunion of the bones. We all know what it is to feel tired of one position when in bed, and the desire to change it ere long becomes overmastering. Such change of position is to be avoided if possible in the interest of the limb: and in order to avoid restlessness the diet should be non-stimulant; and yet should not consist of such food as will load the bowel unnecessarily.

What is said here applies to any other accident where a robust man is suddenly compelled to keep his bed—and so to undergo a sudden revolution in his life. The change in the mode of life suggests a corresponding change in the dietary.

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CHAPTER XVI.

THE CHANGE OF LIFE.

THE reproductive period of a woman's life extends from about fifteen to forty-five ; but may vary a few years on either side, sometimes commencing earlier : while it may extend to fifty years of age. There is a certain liability to disease at the time of puberty, as pulmonary tuberculosis and anæmia. The latter may extend to chlorosis. So at the end of this reproductive period there is a liability to imperfect nutrition ; and to a like development of the adipose tissue as is seen in the anæmia of post-pubertal life. How, and why there is a tendency to mal-nutrition of the muscular tissue, and a development of fat at the beginning and end of the reproductive period, it is not possible to say ; but there is no question about the fact. It apparently depends upon some hidden law of nutrition not yet revealed to us. As a consequence thereof, females at the change of life, or the menopause, as this change is termed, are often in feeble health. They are not unfrequently stout, with flabby muscles ; the heart, being a muscle, is weak ; and there is incapacity for exertion, with palpitation on effort. The nervous system is often debilitated, and self-control is impaired, and the sufferer becomes pettish or fretful, or irritable or nervous. There may be a good deal of disturbance of the heart's action, and heart-disease be suspected, as was the case with the late Harriet Martineau (who got rid of her heart-symptoms entirely, to die more than twenty years later of a disease utterly unconnected with her heart). The bowels are apt to become irregular, while the appetite becomes capricious. As to the uterine functions, the changes in them take various directions. Sometimes a barren wife becomes a mother, like Sarah of old, when all hope of offspring is dying out. Or a widow or

spinster, who hitherto has led a decorous life, suddenly develops strong erotic tendencies, and either makes a foolish marriage, or forms immoral and disreputable ties at the bidding of a recrudescence of the sexual instinct. 'The records of the Divorce Court, the annals of asylums, the dates on the tombstones in the churchyard, all tell us of the severe strain put upon the system of the woman during the change of life.'—('The Maintenance of Health.') There is, indeed, often much physical and psychical perturbation at this time. Sometimes the flux becomes increased; at other times it is decreased; or it becomes irregular and fitful. Not uncommonly some special disturbance, as sickness and vomiting, may take its place, and recur rhythmically at times which correspond with the menstrual flux; and this sort of echo, or refrain may not uncommonly be detected for some time after the menses have ceased. Indeed, in recurrent troubles at, or about the menopause, it will commonly be found, on close inquiry, that they correspond to the catamenial periods—had these still continued. When the periods manifest an amount of pain exceeding what had been experienced in earlier days, there exists a strong suspicion of latent gout; and the symptom becomes a valuable one often in the diagnosis of latent, or suppressed gout.

The bowels are apt to become irregular, as the muscular fibre of the bowel shares in the mal-nutrition of the muscular tissues. Flatulence is not rarely also present; and then this adds to the disturbance of the heart, and aggravates the condition of nervousness present. Attacks of breathlessness, or palpitation, come on at other times than upon effort. Sometimes they are set up by flatulence; possibly at other times they are set up by latent gout affecting the vaso-motor nerves. Or the patient wakens up, with one or both, out of her sleep, and is gravely alarmed. Especially is this the case when the heart's action is disordered, and the thuds of palpitation are broken by intervals when the heart's action seems to have stopped. 'I don't mind the palpitation so much, for then I know the heart is going; but when it stops, then I think I am going to die,' the lady exclaims, who is familiar with such nocturnal disturbance; and it is easy to sympathise with her in her trouble. Of course all this is very disturbing, especially when the nervous system is disordered; and this complicated condition forms a severe ordeal to many women.

Very often as the time of the change is approached, the health becomes impaired, and the sufferer, concluding her ill-health to be the change coming on, pays little, or no attention to herself. She keeps quiet, and bides her time. This is unfortunate; as the change, when it actually comes on, catches her at a disadvantage, and when she is ill able to bear it. All women, when this time of life draws near, ought, as a duty to themselves and those around them, to take every care of themselves; and any deviation from the health ought to be attended to at once—so as to be in the best possible and attainable state of health when this time of trial arrives. They will be well rewarded for their prudence and foresight; those who do so.

The management of the troubles of this time is that of a regulated regimen, with such exercise as the system is equal to taking. The food should be light, and easily digestible. A generous wine may be indicated; and some stimulant be at hand when attacks of palpitation, etc., come on. It is well to lie down when not feeling well, so as to limit the demand upon the body-powers. Some tonic should be given, as digitalis and strychnia, or the lily of the valley, or belladonna, and be combined with a carminative, or cascarilla, or other aromatic. The bowels should be regulated, and there is a point to be attended to here not unimportant. Pain is badly borne at this time, and therefore all pain that can be avoided is objected to. The pain of twisting bowels is very depressant; and especially so in the condition of a female at the change of life. Consequently all purgation is to be avoided, and the laxatives employed should be combined with carminatives so as not to gripe. Mineral waters are objectionable as being too cold; and should be taken in hot water with a little essence of ginger, or other warm agent, to prevent any griping when taken. If these matters be not attended to, the lady will be very liable to change her medical adviser, until she finds some one who understands her condition, and her requirements.

After the perturbations of the menopause are past and over, woman passes into a period of calm; relieved from those tumults which mark the period of her reproductive life, and continues an almost sexless existence; except in very rare cases, of which the illustrious George Eliot was an unfortunate instance. Any local

malady may, however, rouse into life passions dormant if not dead ; showing how some of our most profound mental states may rest upon an anatomical substratum ; and morals be a matter of health. Anything affecting the terminal endings of the pudic nerve, or even irritation in the rectum, may evoke feelings which may in turn prompt actions inconsistent with the time of life, and the previous conduct.

CHAPTER XVII.

CONSTIPATION.—PILES.

FROM what has been written here, it will be abundantly clear that the bane of a sedentary life is visceral inertia; and one great outcome of this is constipation. Exercise is very essential to that peristaltic action by which the contents of the bowel are passed onwards to their point of extrusion. Lethargy lessens this, and then the bowels become loaded. Such a condition of the bowels tells upon the other viscera lying around them; and adds to any vascular congestion which may exist in them. As we have seen before, any interference with the circulation in the liver works backwards; and tells upon the whole portal circulation, and its tributaries to their peripheral inosculation. Consequently, when the current is sluggish in the portal vein, many local congestions are the result. And the blood-flow in the liver is ever impeded by a load in the bowels, which interferes with the free flow of the blood in the veins. These conditions act, and react upon each other. It has been calculated by Goltz, that the abdominal veins could, at their widest diameter, hold the whole of the blood in the body. And as there are no valves to prevent reflux in the portal vein, venous congestion of the viscera may easily occur; and does frequently take place when exercise is not taken in sufficient amount.

When the activity of the vermicular section of the bowel becomes impaired, a load gathers in the large intestine, or horse-shoe gut. It starts from the right groin, passes up the right side to the height of the stomach; and at, or about the seat of the gall-bladder makes a sharp right-angle curve across the stomach to the left side; where it once more makes a right-angle turn downwards, and passes by the left side into the pelvis, gaining the

mesial line at the anus. It rudely resembles a horse-shoe with the convex surface, or toe uppermost, and a little flattened. Any load in it prevents the movements of the stomach by pressure upon it; and so indigestion can never be successfully treated as long as constipation remains unrelieved. Then a distended transverse colon impedes the descent of the diaphragm, and so embarrasses the respiration: while it also incommodes the heart, from which it is separated only by the thin diaphragm. Any gas in the stomach, or in the transverse colon still further prevents the descent of the diaphragm, and presses upon the heart with its elastic pressure; and gravely disturbs both the respiration and the heart's action. When there is a general flatulence in the bowels the descent of the diaphragm is sorely impeded, and the patient is scant of breath. When wind gets pouched at either right-angle curve of the colon, as is often the case, then sharp colicky pains are set up as the knuckle of bowel contracts to expel it. When wind is fixed at the gall-bladder the pains are often misinterpreted, and attributed to gall-stones. When wind is located in the other angle on the left side, the pains are commonly supposed to belong to the heart; and so often give rise to much needless alarm. (It may be explained here that diseases of the heart are not accompanied by pain; or, in other words, pain is not a symptom of heart-disease.) Such colicky pains often cause considerable discomfort, as a matter of fact; and cause much mental quietude from misapprehension. Where to constipation flatulence is added, the condition is often one of great discomfort; especially if there exist any thoracic trouble which makes the breath short.

Unfortunately it so happens that portal congestion, involving the venous plexuses of the bowel, so alters the mucous membrane lining the bowel, that it is prone to give off gas; and so flatulence is frequent when the flow through the liver is impeded. In some cardiac cases the evolution of gas is something tremendous; and 'heart-wind' (as it is termed) is often productive of much annoyance, as well as discomfort. When the blood-flow in the lung is impeded, as in emphysema, with or without chronic bronchitis, there is venous fulness—just as if the heart were primarily at fault, and the circulation through the liver is checked. The consequence is that flatulence is common with emphysema,

and adds greatly to the existing shortness of breath. And in all prescribing for such cases the flatulent element must be borne in mind.

Any loading of the bowel leads to distension of the intestine ; that is readily perceived. The bowel, indeed, becomes dilated in time. In the wall of the bowel there are muscular fibres, especially circular muscular fibres, whose contractions (acting with that of the longitudinal fibres) constitute the peristaltic action. In such a condition relief is impossible without rousing the muscular fibres into action, and this often produces pain, known as griping. (Griping may be just as much due to ineffectual efforts of the bowels to move, and be cured by a stronger dose of purgative medicine; as it may be due to excessive action of the purgative, and relieved by lesser doses. Whether the dose must be lessened, or increased in such griping depends upon whether the bowels are too freely moved, or are not sufficiently open.) A certain amount of griping is almost inseparable from that greater energy of the muscular wall of the bowel which is essential to any improvement. That is a matter upon which enough of insistence is not usually laid ; and a laxative medicine is abandoned on account of the pain to which it gives rise in many cases, when really rather more of it ought to be taken.

A well-compounded remedy for such a condition as constipation should contain (1) a laxative, (2) a carminative, and (3) a muscular tonic ; if the liver be also sluggish, then (4) an hepatic stimulant should be given, or added to it.

Laxatives.—A laxative is a substance which will act upon the bowels. This it achieves by a combined action. It stimulates peristalsis, and so hurries on the contents of the bowels ; while it increases the secretion from the glands of the intestine, and so liquefies the fæces. Some laxatives are found to act more in one way, others in the other. For the liquefaction of the fæces mineral agents are preferred ; for the stimulation of the intestines vegetable purgatives are to be selected. It is obvious that a combination of the two will often be most desirable. Consequently, it is usual to order a pill of vegetable matter at bedtime, to be followed by a dose of alkaline salts, in some form, next morning. Such a plan involves a minimum of griping.

There is no individual characteristic more prominent in man-

kind than the susceptibility, or insusceptibility of the bowels to laxative agents. A robust man sometimes will only tolerate a dose suitable for a baby. A delicate woman may require a dose far beyond what is common for a heavy man. Then in one person a vegetable aperient will act readily when the tolerance of mineral salts is pronounced. Then one member of the vegetable group will act potently on one person, the tolerance of the other members of the group being considerable. Or a dose which is efficient when the drug is first taken, loses its effect in a short time; and the dose must be increased, or some agent of like action substituted for it. Consequently in confirmed constipation it is often necessary to 'ring the changes' among the different vegetable aperients, or form new combinations. In other cases the energy of the drug increases (as is often the case with aloes), so that smaller doses only are required. What has to be aimed at is a regular daily action of the bowels—and it is not by any means always easy to attain this end. The prescription which once acted like a charm, becomes inert in time. The consequence of all these idiosyncrasies is that it is by no means always an easy task to correct the bowels, and keep them right. Personally it may be asserted that constipation has never been found incurable, though sometimes very intractable; and it has been found necessary to prescribe for one person a pill which would probably be fatal to another person with delicate bowels. It is only a question of dose. In some cases, on the other hand, some whole-meal bread, or some stewed fruit, or a fig, or a prune, will attain the end. Others find a pinch of rhubarb enough. While others require a mild aperient pill; and some, again, a pill almost toxic in its potency as regards ordinary individuals. It is bad practice to open the bowels freely, and then let them lock up again; and when such condition is instituted spontaneously it is often troublesome to deal with. Oddly enough, rhubarb (the great household laxative) first opens the bowels, and then locks them up; and in consequence is about the worst form of laxative for habitual use. It is no uncommon experience to find persons who have taken rhubarb pills for a long period (and have come to regard themselves as constipated, or of 'a costive habit') to get relief when these pills are stopped, and a laxative pill prescribed which does not contain rhubarb; and even soon to require no laxative at all

—Nature becoming able to do her own work. The agents in common use are podophyllin, gamboge, colocynth, senna, scammony, jalap, cascara; castor-oil, and the more potent croton-oil; and finally, last but not least, aloes, a constituent of nearly every laxative compound, because of its action on the lower bowel. It is said to be contra-indicated where there is a tendency to piles; but certainly its pile-producing property is not so marked in my experience, as it is stated to be in some books. Certainly its use in excess will produce such relaxation of the lower bowel as would favour the production of piles. While, on the other hand, its special action upon this portion of the bowel often makes it of much service in piles. Indeed, Dr. Fordyce Barker holds that very often aloes can be given for the cure of piles; and in his experience with pregnant women, very commonly aloes in sufficient doses actually cured hæmorrhoids. He says: 'In my own case, the use of aloes for this purpose was the result of gradually accumulating observation rather than from any reasoning on the subject.' All varieties, and combinations of these laxative agents are to be had; many of them in the form of proprietary medicines whose composition is only known to the maker. Probably, too, there are in circulation privately hundreds of prescriptions for laxative pills, copies from some prescriptions originally given by some eminent medical man; all more, or less valuable. In consequence of the individual requirements as to laxatives (set down before), each person casts about until the desired compound is found. Having fished the seas of proprietary medicines, the baffled searcher tries each, and every private recipe which can be laid hold of. And many curious stories are told of the desired agent being secured at last. Early in my professional career an old lady, over seventy, asked me what she should do for chronic constipation, for which she had tried an infinite variety of remedies—being in a medical circle, she had opportunities of which she had certainly availed herself. My knowledge was not extensive; but I hazarded 'a glass of cold water every morning while dressing.' In a few weeks she returned to offer me her heartfelt thanks. She had found her remedy at last. She formed from this a high, and flattering opinion of my professional ability, regarding me as a youth of promise; and lived twenty years longer in bodily comfort.

Thus it can be seen that water as water may exercise a laxative action. Still more is this the case if it be charged with purgative salts, as Epsom salts (sulphate of magnesia), or Glauber's salts (sulphate of soda). The bitter taste of the sulphate of soda caused the sulphate of magnesia, some years ago, to supersede it for general use ; and as a mere laxative, sulphate of magnesia is to be preferred as less nauseous. But where the liver is involved then sulphate of soda (despite its disagreeable taste) is indicated. It is said that a certain illustrious lady has absolute faith in the efficacy of sulphate of soda as an habitual laxative. One, or both form the basis of the mineral waters in great repute: Pullna, Frederickshall, Hunyadi Janos, Æsculap, Radoczy, Rubinat, and others, all useful in their way. The dose of each is what every individual must ascertain for himself, or herself. Their efficiency and rapidity of action are greatly increased by adding to such water some hot fluid ; and where it is inconvenient to be bothered with the bowels in the day, such addition should always be made to the purgative water. The proper dose is just enough to give a semi-solid stool. Certain salts, of which Carlsbad salts are the best known (though those of Franzenbad are equally good), have an allied composition, and can be taken dissolved in warm water. A small pill, consisting of vegetable laxatives, taken at bedtime the night before, adds greatly to the action of the water in persons of a very constipated habit.

Carminatives.—Carminatives are agents which lessen griping, as well as reduce flatulence. They seem to do this by some action on the mucous lining of the bowels. They embrace the essential aromatic oils ; the peppers, whether of the Piper or the Capsicum families ; and the nauseous gums, as galbanum and assafœtida. They are usually indicated in combination with some laxative ; as is the case with a well-known wind-pill. Then hyoscyamus has a wonderful power of lessening griping ; while another of the Solanaceæ, belladonna, often adds greatly to the efficiency of a laxative. By a judicious combination of laxatives, and carminatives an efficient pill, not giving too much pain, can usually be constructed.

Muscular Tonics.—The agent *par excellence* for acting upon the muscular fibre of the bowel is strychnia. It acts upon all muscular fibres, including those of the intestine ; and is a constituent, or ought to be, of all laxative pills. It is, too, a singularly safe and

reliable drug, and in a most extensive experience of it, only one case where it disagrees has come under my notice. Its effects are a matter of dose ; and the certainty of its action exceeds that of any other member of the Pharmacopeia. It is, too, a good general tonic, acting upon all parts of the nervous system.

Hepatic Stimulants.—The agents which act upon the liver are otherwise known as cholagogues. Those in common use are mercury, sulphate of soda, and chloride of ammonia ; of which the first is the most potent, and only adapted for occasional use, though often invaluable. The sulphate of soda is in common use as an habitual cholagogue ; while chloride of ammonia is used in biliousness. Then there are vegetable hepatic stimulants, as dandelion, ipecacuan, euonymin, iridin, and baptisin, with others less known.

In consequence of their composition and preparation, laxatives can be variously combined with these other agents in the convenient form of pills. A box of pills is easily carried about, without being very noticeable ; a pill when coated can be readily swallowed without outraging the palate ; while medicine in pill form does not act upon the teeth. A compound pill for habitual use would run on these lines :

Strychnia.
Pulv. Ipecacuan.
Pulv. Capsici.
Pil. Al. et Myrrh.
vel Pil. Coloc. Co.

and contain each of the four constituents above enumerated. And if any reader can find a better combination he would do well to publish it to the world. (It is obvious that to add doses of each of the constituents would lead to the wildest confusion amidst the individual peculiarities of the bowels of social units. Any medical man can fill in the appropriate dose in each case.) How long the pill must be continued ; whether it becomes necessary to substitute some agent of allied action as each item seems to lose its potency ; how soon the dose can be diminished ; when the pill can be abandoned altogether—are matters on which no rule can be laid down ; and form subjects for individual judgment in each case.

www.libriol.com/Piles—Hæmorrhoids or Piles.—Piles are divided into two classes, non-bleeding and bleeding piles, or hæmorrhoids. The first admit of little being said here, except attention to the portal circulation and the bowels. Of bleeding piles, however, something may be said. The most practical observations on the matter which have fallen under my notice came from Dr. David Young, of Florence. He starts by asking the reader to observe a horse in the act of defæcation, and note the worm-like mass of rectal lining membrane which becomes visible at the end of the act. It is soon, however, withdrawn within the anal sphincter which closes upon it. It is upon that portion of the rectum which is exposed at this time that hæmorrhoids develop. If any application is to be made to them with any likelihood of success, it must be done while that portion of the bowel is exposed and within reach, *i.e.*, just after the motion has passed. It is not pleasant—it is, indeed, repugnant—but the only effectual plan is to carry the remedial agent into the water-closet. Alum is an excellent astringent, and does not stain the linen. A solution of an ounce to the quart is strong enough. A little basin of warm water with a sponge in it; a little basin of alum-water with another small sponge in it; are the armamentaria. As soon as the motion has passed the gut must be washed free of any fæces adhering to it (else the alum cannot reach the true surface of the bowel); and then the sponge with the alum-water should be dabbed on the piles (and the mucous membrane on which they grow), before they are withdrawn within the anal ring. It is a very bad pile which resists long such well-planned attack as this; and Dr. Young's sound advice has been of infinite service to many persons who otherwise would have gone on from bad to worse, till a surgical operation would have become necessary—to my personal knowledge.

In prolapse of the bowel the same line of attack is indicated; and will usually be followed by the same satisfactory results.

Such, then, are the various measures for dealing with that vascular fulness, and visceral inertia which overhang a sedentary life. They should not, however, be made to take the place of appropriate exercise; but should be used as ancillary thereto. That a great need for laxatives exists is revealed by the myriad of pills, and the varieties of purgative waters offered to the public

in the press of the day. When the bowels are loaded the mood is that of depression ; when the bowels are opened the blood-flow through the brain is accelerated, and the mood brightens. This story of Voltaire is well known. One day an Englishman called upon him, and found him very depressed ; and it was arranged between them to commit suicide together next day. When the Englishman called, according to the agreement, he found the gifted Frenchman unwilling to proceed with his share of the compact. On being reproached for his breach of contract, the philosopher explained that in the meantime his bowels had been relieved, and he was no longer in a suicidal mood. It is a matter well known to alienist physicians that accumulations in the lower bowel produce a melancholic condition ; as indeed Schröder van der Kolk found in his own case.

As to piles, speaking broadly, they are the result of neglect of the bowels.

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CHAPTER XVIII.

RHEUMATISM.

RHEUMATISM is a term applied to a painful condition, when no other more precise name, or term can be applied to it. There is usually nothing to see ; but the patient feels pain in the part. It may be in a joint, or in a muscle. It is usually aggravated by movement ; and consequently rheumatism compels many persons to lead a sedentary life.

Rheumatism is a vague term : and on comparing medical works of to-day with medical works of fifty years ago, a great many troubles then classed as rheumatism, now figure under the head of gout. Of the causation, and the *materies morbi* of gout, we now know much ; as will be seen in a future chapter. But as to rheumatism, we are no nearer a solution than we ever were. We know that rheumatic fever, or acute rheumatism, is certainly associated with lactic acid ; but we can go no further. A man is exposed to a cold rain during a long ride ; and next day he has stiffness and pain, aggravated by movement, in the side which was exposed to the weather. A shoulder becomes uncovered in bed, and next day a dull aching is experienced, with stiffness. In each case we pronounce the trouble 'rheumatism.' But what is the matter with the patient ? Patient and medical man are agreed about the malady ; but what have they agreed on ? A person complains of a severe pain in the knee, a steady aching pain. It is rheumatism. Certainly : no one said it was not. But what is rheumatism ?

The pain of rheumatism is not inflammatory pain ; for there is no heat, redness, and swelling, or constitutional disturbance. It is not neuralgia, for that pain is gusty, with squalls and lulls : while rheumatism is a steady, unvarying pain. Is it periosteal ?

No, for then there is tenderness on pressure; and the pain is distinctly worse at night. Is it an osteal abscess? No doubt many an abscess in the cancellated structure of the ends of bones has been held to be rheumatism—till at length time showed that it was something else. Is movement limited in rheumatism? Commonly so; but not always. Sometimes the muscle is affected, and contraction in it is painful; sometimes the rheumatism is in the joint, and when the limb is moved, pain is produced, or aggravated.

Rheumatism is 'wind betwixt the skin and the rind,' a bucolic will tell one with all confidence, and with all sincerity. But that cannot be accepted as a satisfactory explanation of the pathology of rheumatism. We see an old bargeman bent nearly double, leaning heavily on his stick, or perhaps on two. We ask him what is the matter with him. He will reply, 'The rheumatics'; and explain that his trouble is due to exposure of the loins, especially to rain, when propelling his barge by his pole. There we know there is a good deal of bony growth uniting the dorsal vertebræ, and converting them into a rigid mass. We also know that adhesions form in the shoulder-joint in many cases of rheumatism; and that these must be broken down before any freedom of movement is feasible, or possible. But what makes the periosteum throw out bony, or fibrous matter gluing two periosteal surfaces together? Muscles wither and waste, while the joint becomes ankylosed, and the limb is rendered useless by rheumatism in some cases. Certainly such a case is not uncommon; but what was, or is the first morbid departure? I certainly do not know, and cannot find out; yet I belong to a rheumatic family, have experienced rheumatism myself, and seen it in unlimited amount in my early days in Westmoreland. It has been familiar to me since I climbed up on my grandfather's knee; familiar as a fact, but bringing with it no familiarity as to the cause of the rheumatic symptoms. There is cold rheumatism; and rheumatism which gets worse as the patient gets warm in bed. In the latter case, there is usually some periosteal complication. There is rheumatism worst at night in the shins, where there is a bony thickening; that is, tertiary syphilis: so is rheumatism of the collar-bones and the sternum, where an osteal node may often readily be felt. There are chronic pains due to alcoholism.

Cider-drinkers get rheumatism. Exposure to cold brings with it the rheumatics, as all know who are out much in all weathers. Dwellers on hills—whether northern hills or southern downs, whether at Marlborough in Wilts, or on the Cheviots, are sufferers from rheumatism. We know and recognise the malady; but its essence is, as yet, beyond us.

Whenever pain is experienced of a constant character, and there is nothing to see, 'rheumatism' is diagnosed; and a great variety of pains are passed over as rheumatic, which are nothing of the kind. As I write, an old medical man presents himself with 'rheumatic pericardium,' he says: he certainly has no pericardial friction-sounds; but there can exist no doubt that he has flatus in the colon, where it turns down on the left side; and that his pain is due to some pouched flatus, setting up sharp pain, or colic, as the knuckle of intestine contracts upon the imprisoned wind. Rheumatism of the shoulder is often the 'shoulder-tip' pain—due to the liver. Pains in the back are said to be rheumatic, when they are due to ovarian, or uterine trouble; just as much as when lumbago (which may fairly be held to be of rheumatic origin) is present. Pain in the back is 'rheumatism,' when it may be due to an aneurysm eroding the spinal column. The pains of locomotor ataxy are often called 'flying rheumatic pains,' until the symptoms become sufficiently marked to reveal the real state of affairs. A washerwoman complains of 'rheumatics' in her hands, when there is neuralgic pain in her interossei muscles. Just as another woman will complain of backache, and call it rheumatism, when it is due to muscular fatigue, and is relieved by lying down. Dr. Da Costa, in his well-known work, 'Medical Diagnosis,' recommends his readers to take the trouble to make sure that there is nothing else on foot 'before we conclude that the pain is rheumatic.' A piece of advice it is well to take!

As to the existence of rheumatism there can be no question. There are, too, rheumatic families; and where the parents have rheumatics, and their children have rheumatism in their 'teens, the outlook is clouded. Baths and waters give relief; but where is the cure to be found? One thing is certain, as certain as anything is that cannot be put into figures, and that is the relation of rheumatism to a clay subsoil. Sufferers from rheumatism leave a habitation on a clay soil, and settle down again on gravel; and

know no more of their rheumatism. This is a matter which has come under my personal notice. When such removal in one case was advised by an old experienced medical man, I felt much incredulity ; but the result justified the opinion. Then dampness of climate favours rheumatics, as the dwellers amidst the Lake mountains know well. Flannel is good for the rheumatics ; and a piece of stout Welsh flannel sewn into a coat over a rheumatic shoulder often gives great relief. Warm clothing, warm baths, and liniments of various kinds are in vogue for the treatment of rheumatism. Iodide of potassium, and iodide of iron, are both of service, according as the person is robust, or asthenic. Sulphur is a great medicine ; and some old rheumatic persons have great faith in a piece of sulphur worn in the trousers-pocket. Sulphur-springs are largely resorted to by sufferers from rheumatism. Then there are the brine-baths of Droitwich. Where there is a gouty element present, no doubt alkalies are of service ; and much rheumatism is gout. Many persons will admit that they have 'rheumatism' who resent indignantly the word 'gout' as applied to them. Yet much of what figured as rheumatism in older books is now put under gout. There is, indeed, a constant movement from rheumatism to gout ; yet some forms of rheumatism will never be headed 'gout' in the opinion of most persons.

Then massage, and movement are of great service. If joints stiffened by rheumatism be moved, and the adhesions broken down, and the movement kept up for a time, the patient can not only move the limb at will, but the pain is relieved. But unfortunately this is a very painful cure : and requires great determination on the part of the patient. In one case the cure was not only perfect, as regards both freedom of movement and pain ; but there was no return of the pain for three years. The tears streamed down the old man's face as he cried, 'I will bear it. I will !' but he got his reward for his endurance. In another case, great relief was so afforded to the medical superintendent of one of our largest sick asylums ; but when, feeling the benefit which he had received, he tried the plan upon the inmates, they took their departure in preference to enduring the cure.

Where rheumatism threatens to be chronic, and to settle down upon a man, if he be able to leave the locality, or **change** his occupation, it is worth his while to do so—even at considerable sacrifice.

CHAPTER XIX.

RHEUMATIC GOUT.

THIS is a term used and applied to such varied conditions, that it becomes necessary to be careful about its employment. It is commonly applied to cases where gout has produced considerable deformity in the hands. Why it should be used in such cases it is not easy to see; but when so applied the speaker means to convey the impression that the condition is one of 'gout modified by rheumatism;' and as such it is understood by the person addressed. But all the same this is not rheumatic gout, or *arthritis deformans*. It is really a misapplication of the term.

Rheumatic gout is not a blend, or hybrid of gout and rheumatism, but a disease *per se*. Joint gout, as we shall see, is the presence of urate of soda in the articular cartilages of joints. In rheumatic gout the bone itself is affected. In certain large joints there may be a porcellanous aspect of the bone, or an enamelled surface from condensation of the bone, most common in the shoulder-joint. At other times there is deformity of the joint, with a rim of bone thrown out around the diseased part. This is commonly the case with the hip. The diseased surfaces spread out, and then the bony rim is formed around the diseased area. Such is a not uncommon malady with elderly men.

Why a porcellanous condition should obtain with the joints of the upper extremity, while the other morbid change is found in the hip, is perhaps a question of pressure. In the enamelled surface there is comparatively little deformity. The 'rheumatic hip' comes about in two ways. A man advanced in years has an accident by which his hip is bruised. He is confined to bed for a time from the pain occasioned by movement. On getting up there is still pain and lameness; and it is found that there is some

shortening of the limb from a change in the form of the neck and head of the femur. The consequence is that the patient walks lame ever after.

At other times the disease commences by an acute inflammation in the joint, which gradually subsides into a chronic condition of pain and lameness, the amount varying from time to time; sometimes being a little better, at other times being worse. Such is the condition of many lame men to be found at Buxton, Gilsland, Shap Wells, Moffat, and other sulphurous waters of the north. Whether exposure to weather, and a damp climate, predispose to the 'rheumatic hip,' may not be affirmed—but it is common in the north. These persons improve at the sulphur-springs, and can usually get about much better after a visit to a sulphur-water; but they never throw away their stick entirely. As winter wears on they commonly suffer more or less aggravation of their malady. Such is one form of 'rheumatic gout.'

Then there is 'rheumatic gout' mainly affecting the hands, seen in comparatively young persons; but at times leading to a general crippling of the joints, until the person is helpless, and can only be wheeled about. This is a disease which has no associations with either rheumatism or gout. It is a disease of early years, and is most common with the female sex. There is a growth of lowly bony matter in the epiphyses, especially of the knuckles, with alteration of form as a result. The hand has the fingers leaning away from the thumb, as if some unpleasantness had grown up between the digits and the thumb. This is found in some men, and it is not easy always to be sure how it came about. But with young women we can see it to be a disease of malnutrition. There is usually disturbance of the uterine functions; at other times rapid child-bearing seems the cause. The skin is dry, and there is an increase in the bulk of urine, which is pale, and of low specific gravity. At other times it occurs later in life, and seems to follow a miscarriage, or other cause of impaired health; or it appears with the change of life. As a disease of young women it seems to be comparatively common in the north, especially on the eastern coast, at least in my experience of it; and a change to the south, as the Isle of Wight, for instance, is very beneficial. If treated as a hybrid—half gout, half rheumatism—the malady progresses. Alkalies are useless,

colchicum is worse than useless; salicylic acid gives no good results. It is a disease of mal-nutrition, and needs a liberal dietary of good food, including animal food, and generous wine. It is well to attend to the condition of the liver, and put that organ right; after which iron, arsenic and cod-liver oil form the medicinal measures to be employed. Where motion in a limb causes pain, a splint or other means of limiting motion may be desirable. If pain be considerable, local applications containing opium are of service.

Even where considerable deformity exists, treatment will do much to lessen the condition; and even in very bad cases a great deal can be done at times by suitable measures. Dr. Garrod, who has had great experience in this disease, writes: 'Sometime ago I was inclined to take a very desponding view of the amenability of this disease to treatment; but, year by year, I have become more hopeful, and I have frequently seen patients who, I feel sure, if they had submitted themselves perseveringly to a rational course of steady restorative treatment, instead of being led by the solicitation of injudicious friends and empiricising advisers to give themselves up to every form of quackery, would have been restored to health instead of becoming, as many of them unfortunately do, miserable and incurable cripples.' This is a very outspoken expression of opinion; but it does not do more than meet the facts. It is painful to see a fellow-creature, often a sensitive woman, going on from bad to worse, because she is more, or less in the power of some foolish self-confident persons—who are also self-willed.'

P A R T I I I .

Advanced Life.

CHAPTER XX.

THE DIGESTIVE ORGANS.

SOME change in the plan of the work becomes desirable at this point. In dealing with the changes which set in as advanced life is reached, in the various organs, a distinctly systematic handling of the subject seems indicated—whether for medical, or lay reader. There is no modern treatise dealing with ‘The Diseases of Advanced Life,’ except that of Dr. McLachlan, an excellent work, but now somewhat out of date, and not easily procured; so there seems an opening for a work dealing with the subject, which will embrace much of what Dr. McLachlan stored up in his substantial treatise, as well as original matter. It cannot, however, be made a complete practice of physic; but will embrace a consideration of the leading maladies which overhang the frame as years roll on; especially those of mal-assimilation, and decadence. Dr. McLachlan had exceptional opportunities, as Physician of the Chelsea Hospital, for observing disease in elderly and aged persons; and quotations will be made from his work where his experience has entitled him to be heard: otherwise this work is original, and contains much on which nothing can be found in his treatise.

As age goes on, there is a loss of tone in the various organs of the body; just as much as there is in the cerebro-spinal nervous system, and the muscular system. As locomotion becomes impaired in age, so the functional activity of the various viscera wanes. It is found that the organic nervous system is impaired,

and that there is a development of connective tissue in the nervous centres with an increase of pigment—while the true nervous tissue is deficient. Such being the case, the loss of functional power is readily comprehensible. Indeed development of connective tissue with decrease of normal elements is the change *par excellence* in the viscera in old age. Beyond this there are special changes in the anatomical structures of the intestinal canal which Dr. McLachlan enumerates as follows:—‘Participating in the general wasting of the organs and tissues, the stomach and intestines lose bulk and become thinner in old age. Their glandular apparatus is also atrophied. The wasting of the tissues composing the stomach and intestines is more obvious in the duodenum, jejunum, and ileum. In some cases it is carried to such a degree as to admit of the contents of the intestines being distinctly seen through the attenuated structures. In striking contrast the larger intestines occasionally preserve their natural thickness, chiefly through a compensating hypertrophy of the muscular coat. The mucous membrane is usually paler than in the adult, and generally acquires an ash-grey colour as life advances. In the stomach it is often traversed by enlarged veins, assuming a varicose character, which become more numerous in the lower portions of the intestinal canal, and are particularly conspicuous towards the termination of the colon and rectum.’

Stress has all along been here laid upon venous congestion of the portal circulation; and the above quotation tells that, amidst other senile changes, there is developed a varicose condition of the veins of the alimentary canal as advanced life is reached. No wonder, then (if a degenerate state of the organic nervous system is linked with disappearing muscular fibres in the small bowels; and glandular decay in that portion of the bowels where absorption is most marked; and to these is added a varicose condition of the veins), that the digestion and assimilation of aged persons are enfeebled. Such anatomical consideration throws a flood of light upon the digestive troubles of old persons. The teeth are often decayed, or lost; and mastication is difficult, so that much of the food passes into the stomach without the preliminary chewing which prepares the food for the action of the stomach—itself enfeebled, and scarcely fit for its own work. Consequently, we see that the food should be adapted to the requirements, and

capacities of the aged. Once a man and twice a child,' is true of man. As the digestive powers wane, the condition approaches that of the infant before the teeth are developed. We do not give meat to infants before they have teeth with which to masticate it. So in old age the dietary should approach that of the nursery; and in very advanced life baby-foods are distinctly indicated. Milk with farinaceous foods, or meat soups with farinaceous matters, are suggested. And remembering the physiology of digestion, it is clear that foods in which the starch has been already acted upon, and changed into soluble dextrine and maltose, are clearly to be preferred. Malt is a typical food; and ground malt ought to be added to any farinaceous matter before the milk is poured on for a milk-pudding. And baked starch is preferable to raw starch, as having undergone some change homologous to the digestive act. If baked flour, or broken biscuit, be employed with the malt, then an ideally digestible food is furnished to the enfeebled system. Such a milk-pudding is infinitely better than the ordinary one of raw starch sweetened with cane-sugar; as not only being more digestible, but as being far less liable to go acid in the stomach—a matter of no small importance in feeding elderly persons. Indeed, all food should be such as to tax but little the digestive powers, which gradually fail with advancing age. This is too self-evident to require much insistence. The meals should be small, and consist of porridge (all the better if made with the 'A B C cereals,' or other farinaceous matters which have already been exposed to a high temperature), with a little fish for breakfast, and some sound fruit. Then for lunch some milk and malted food, with a digestive biscuit and butter; and a glass of generous wine, or aromatic non-alcoholic fluid, would be suitable. At five o'clock it might be well to have a cupful of beef-tea, thickened with shredded maize; or an equivalent of meat broth and cooked farina. Dinner should consist of white fish, a sweetbread, or chicken; a pudding of cooked starch, or the malted material just described, with a cheese straw; and some good fruit. A glass, or even two, of sound wine—'the milk of the aged'—would not be out of place. Of course there are hundreds of persons well stricken in years who would have the most unbounded contempt for such a restricted dietary, and who still yield to the temptations of the palate; but the principle of

such dietary is well founded : and such a series of meals form a base-line of what the food ought to be, and a guide as to the direction to be taken in the dietary.

It would be insufficient, one old gourmand might plead. Certainly it might, as to the palate ; but not so as to the actual needs, and requirements of the system. Tissue-change, and tissue-repair are not great with advancing years ; while accumulations of earthy salts, especially in the arterial walls and valves of the heart, are part of the diseases which strike at the waning life of old persons. First and foremost, indeed, comes the nutrition. As the maladies of youth are largely matters of defective nutrition, so in old age the diseases are closely linked with the presence of redundant waste, or effete material in the body. The food should neither be too great in bulk, nor too rich in plastic materials ; but such as is required to maintain the body-temperature, and repair the tissue-waste. The tissue-waste is small, therefore the albuminoid elements of the food should be but sparsely supplied ; the body-heat is apt to be low, so hydrocarbons should be given freely. Milk and carbo-hydrates should form a large portion of the dietary. (Hydrocarbons include fat, and all compounds of carbon and hydrogen, indeed ; while carbo-hydrates is a more restricted term applied to the farinaceous, and saccharine elements of food.)

The matter might be infinitely expanded at this point, and a long chapter on the various kinds of foods be written ; but this does not seem desirable. A great deal would be but repeating what is given in 'Food for the Invalid, the Convalescent, the Dyspeptic, and the Gouty,' by the author, and published by Messrs. Macmillan and Co., to which the reader is referred.

The maladies to which elderly persons are liable from the changes going on in the organic life, and the viscera connected therewith, are anorexia, dyspepsia, flatulence, acidity, or heart-burn, water-brash, colic, and, of course, constipation, with rectal troubles ; of which some account may here be given.

Anorexia.—Anorexia, or loss of appetite, is a common matter with the old. We have seen before (p. 66) that when the liver has more on hand than it can deal with efficiently, the appetite is put in abeyance ; and so the incoming to that viscus checked. Consequently all anorexia is not to be dealt with summarily. If

the tongue be coated, not only is food contra-indicated, but even some laxative acting upon the liver may be desirable. To give bitters and acids, and rouse the digestive organs, and so to further embarrass the liver, is only adding fuel to flame. But such anorexia should be discriminated from loss of appetite telling of flagging power; and on this matter the patient's medical attendant can be the sole judge—and with him must the decision rest.

Dyspepsia.—We cannot be surprised that imperfect digestion is common with old persons, after Dr. McLachlan's account of the alimentary canal in the aged. He writes: 'The preservation of a healthy tone of the digestive organs, always of the first importance, is peculiarly desirable in advancing years, as essentially conducive to the further prolongation of life and the attainment of a cheerful old age. Entailing a host of bodily infirmities, and bringing with it irritability of temper, depression of spirits, sometimes melancholy madness, very often protracted sleeplessness, and unfitting the mind for ordinary employment, dyspepsia robs the old of the best, sometimes the sole source of enjoyment left, and spreads misery among those whose chief happiness consists in ministering to and anticipating the wants and wishes of venerated years.' This is a strong expression of opinion by a man who was in the habit of weighing his words: and the advance made in our knowledge of the physiology of digestion, and the chemistry of food of recent years, is seen in the scientific way in which it is now possible to feed a dyspeptic; as compared to the confused plan there advocated by a pre-scientific empiricism. Not but that the worthy doctor is right so far as he goes—and in the light of his time.

In addition to appropriate food requiring but a minimum of digestion, we can now furnish an artificial digestive agent—pepsin (sold in varied forms, of which, however, the oval pills of Mackesson and Robins, of New York, seem to me to possess the maximum of advantages)—and so help the faltering stomach through its work. It is possible, too, to give tone to the stomach and digestive organs by an agent, or combination of agents, such as that given at p. 123, and so to relieve the dyspeptic state.

Flatulence.—Flatulence is a great source of suffering, and inconvenience to the old. The weakened bowels cannot expel the contained flatus, and colicky pains tell of their more or less in-

~~effectual efforts to disperse~~ the wind. Carminatives of all kinds are adopted with more, or less resultant good effects. Of old it was customary to make up a pill at table of breadcrumb and cayenne pepper ; a means by which the latter was swallowed without discomfort. This is a plan worth re-adoption. Now a tincture, or essence of ginger is in vogue. The old Scotch wife's resort, advocated by the late Sir James Simpson, is to put as much black pepper as will lie on a sixpence in a teacup, and half fill with water as hot as can be drunk ; and taken as often as required. (The coarser ground the pepper, the easier swallowed.) Then the liqueurs, as Chartreuse, Curaçoa, Maraschino, Benedictine, and others, are all good ; and can be taken in small quantities after a meal with advantage. Then tea is notoriously flatulent, and should be avoided. A glass of milk, with some malt food in it, or a cup of cold coffee and cream, or a little cream with a liqueur, or milk with a little brandy in it, can be substituted for tea at the small meal known by that name, with advantage. By such measures, with an appropriate dietary, much discomfort could be avoided.

Acidity, or Heartburn.—This is a condition which often interferes with comfortable digestion in aged people. There may be acidity in the stomach, as an excess of normal acid ; but this is improbable. There is rather the formation of a fatty acid ; from decomposition of some fat in the stomach, as butyric acid, which is offensive and irritant. If the stomach be distended with gas, then the œsophageal orifice is opened ; and, being very sensitive, the acrid fatty acid sets up that condition known as heartburn, or cardialgia. Of old, a favourite cure was sour butter-milk. And as a matter of fact such an acid as lactic, or citric acid, which kills the feeble irritant fatty acid, is better for heartburn than an alkali like soda—which forms with butyric acid a butyrate of soda, scarcely less irritant than the free acid.

Sometimes in gouty dyspepsia it would seem that there is an acid in the stomach acting as an irritant.

Cane-sugar readily undergoing the acetous fermentation in the stomach, should be carefully eschewed ; and probably a cup of tea well sweetened, is about as objectionable an aliment as a person troubled with acidity of the stomach could well take.

Water-brash.—Water-brash, or pyrosis, is the eructation of an

acid fluid from the stomach up the œsophagus. It is to be met by the measures just spoken of for the relief of heartburn.

Colic.—The accumulation of gas in the attenuated small bowels of the aged, gives rise to colicky pains, often very distressing and depressant. As the vermicular action of the bowel passes onward over some pouched gas, a long griping pain is the result. At other times some gas is located in a knuckle of intestine, and then the pains are sharp and continuous. In either case there is the depression of the sickening pain in the bowels. All abdominal pains are of this nauseating sickening kind, and require for their relief an analgesic with a stimulant. Laudanum and brandy internally, with turpentine stupes over the bowels, are the time-honoured measures for the relief of this condition; and are eminently suited to attain the desired end. Sometimes the condition is one of extreme suffering, threatening life. The pain can arrest the action of the heart (and syncope, abolishing consciousness, is Nature's anæsthetic in many instances); and sometimes when the pain is very great, the heart is brought to a standstill in diastole—and the patient dies. The recent discovery of a depressant heart-poison as a resultant product of albuminoid decomposition stands in a suggestive relationship to these cases of sudden death, where nothing can be found on post-mortem examination to account for the result. If such a poison were in operation in addition to severe pain, heart-stoppage can be readily comprehended. By the addition of condiments to the food much flatulence and colic can be avoided; and condiments are as necessary now as they were to the savoury meat the aged Isaac craved for before he died. Well-cooked meat sits easily on an elderly stomach, and the flesh-pots of Egypt are seductive. But masses of imperfectly masticated food will often set up severe colic, ending in a diarrhœa expelling the offending mass—which may gravely endanger life. Such a condition requires knowledge for its comprehension, and thought for its proper management. Some tincture of rhubarb was a favourite measure in the days of old; the rhubarb, as we have seen, first clearing out the bowels, and then locking them up. To this may be added a few drops of laudanum. When colic is followed by diarrhœa in old people, it is well to give an eye to the stools; as sometimes it is well to let the evacuant outpouring go on till all the offending matter is

ejected from the bowel, before interfering with it. And yet of course it is not well to allow a discharge to continue any longer than it is a useful depurative action; and as soon as it ceases to be such, it is highly desirable to arrest it. There are two dangers to be avoided: (1) Not to check the diarrhœa too soon so as to lock up irritant matter in the bowels; and (2) not to let a useful diarrhœa degenerate into an exhausting discharge.

Constipation.—With attenuated muscular fibre, degradation of the nerve system of organic life, and venous varicosity of the intestines, there can be no surprise at constipation being a common condition with elderly persons. There may, or may not be, hypertrophy of the muscular fibre in the great bowel, which when it exists is doubtless useful; but there is waning power in the abdominal walls, and the act of defæcation is difficult, and often unsatisfactory. Old people, too, are petulant often, and are apt to avoid what they dislike. So they only go to stool when the call is urgent, and the effort likely to be crowned with success. So they actually encourage the tendency to constipation, as they find it convenient—from one point of view. Yet constipation is inimical to good assimilation—a matter of importance as years roll on. Nor can it be said that the desire to take medicine grows with age. Neither does the tolerance of griping pains wax with advancing years. Like women at the change of life, elderly persons eschew all medicines which cause them distinct discomfort. Consequently laxatives must be given with aromatic and carminative adjuncts to please old folks. The confection of senna finds favour with them. Sulphate of magnesia with ginger in infusion of cascarilla, or the compound decoction of aloes, are combinations likely to meet with their approbation. All laxative pills must be made with carminatives, and contain some hyoscyamus; if the prescriber would stand well with elderly patients of the costive habit. Discomfort they will not endure—at any cost they will have ease; and often they have the means to gratify—not only every reasonable wish, but every caprice that may suggest itself. Consequently they must be studied; and such study of their case flatters their vanity, and adds to their sense of importance; while apparent indifference to them rouses their wrath. And further there is no reason why

they should not be relieved from unnecessary, and avoidable pain when their power to bear it is becoming diminished.

Constipation may alternate with diarrhœa; and when this combined condition is established, it is apt to be intractable. It can only be satisfactorily met by a sufficient dose of laxative medicine every night, or night and morning; such as will prevent the bowels going more than one day unmoved. It is a matter involving the patience and perseverance of the individual; who cannot be cured by others, but who can be shown how to cure himself—and helped to that end. Such an alternating condition is found whenever the lower bowel is obstructed, either by something within it, or when pressed on from without (p. 88).

Rectal Troubles.—These can only be considered here so far as the physician is concerned; when the domain of surgery is reached, this essay ends. The bowel is liable to various troubles, as advanced life is reached. Prolapsus has been spoken of before, along with piles (p. 124), and admits of treatment at once palliative, and curative—within certain limits. In addition to the measures there mentioned, great relief, and even something more, can be given by the use of suppositories. These are small cones, like the last joint of a lady's little finger, consisting of a firm fat which can readily be inserted into the bowel. They are medicated with opium (which acts both locally and generally), and often give great relief. Or some astringent as tannin is added; and then the suppository becomes very helpful in the treatment of hæmorrhoids, or a relaxed condition of the mucous membrane. They are used chiefly at night, and readily keep their place in the recumbent posture.

Pruritus ani is a malady which often amounts simply to torture. It is sometimes linked with liver-disturbance; and, then, a mercurial purgative acts like a charm very often. When of a more permanent character, local applications become indispensable. If there be seat-worms, then a little mercurial ointment is indicated; for over this mercurial zone no seat-worm can go—any more than a serpent cross the ring of Irish soil a son of Erin had put round his house in Australia. But applications to the anus should not be greasy, as a rule, on account of soiling the linen, and lotions are preferable. These may consist of laudanum with borax, or cucaine may be tried; but a solution of corrosive sublimate will

be found often to give relief when other measures have failed. In ladies, pruritus ani is apt to be coincident with pruritus vulvæ; and if seat-worms travel over the perinæum and find their way into the vagina, they set up the most intolerable itching. A purgative containing aloes, followed by an injection of an infusion of quassia, will often give much relief when a horde of these worms infest the rectum.

Enemata of warm water are often serviceable when there is a load in the large bowel; if the water be made soapy, the injection is more efficient. The French use suppositories of soap in cases of constipation; and in more confirmed cases hardened honey.

In all cases of anal irritation, the ordinary means of cleansing the gut are to be supplemented by washing the seat with warm water by means of a soft sponge. Any fæcal matter remaining will cause an aggravation of the condition, whatever it is.

Cancer.—The alimentary canal is often the seat of cancer; either in the gullet, in the rings of entrance and exit from the stomach, or in the rectum, or anus. When in the gullet there is dysphagia, or difficulty in swallowing, as well as pain in the act of swallowing. Here a dose of opium, or morphia, half an hour before attempting to take food will often enable a quantity of fluid food to be taken; when without it the attempt would be unsuccessful, from the pain set up.

When the stomach is the seat of cancer there are dyspeptic symptoms; of which pain after food is one. The difference betwixt cancer of the stomach and the other maladies of that viscus, is this—in other conditions relief is afforded by emptying the stomach, which at once gets rid of the offending matter, and relieves the stomach of the work of digestion; while in cancer the relief so afforded is but partial. But in the early stages it is simply impossible to be quite sure whether cancer be present, or not. If, however, symptoms of dyspepsia show themselves, and are intractable to suitable treatment, in an elderly person previously untroubled by gastric derangements, then the presumption of cancer is strong. And more especially may cancer be suspected if the complexion alter and become sallow at the same time. The cachexia of cancer is well known; and in some cases an icteric tinge is developed. This matter of cachexia is signi-

ficant, no matter where cancer is located. Even when the symptoms of cancer of the stomach are unmistakable, and a lump can be distinctly felt, it is at times wonderful to see what good a strict dietary can effect. Bland non-irritating articles of food, fluid and semi-fluid, free from lumps, or masses which give offence to the morbid surface, together with opiates and bismuth, will relieve the vomiting, and the pain ; but, of course, only for a time. Still, that is something. In a case seen lately the improvement was such that the friends of the patient began to hope that there was some mistake in the diagnosis. Even when a very advanced stage is reached, and all food is rejected, so that chips of ice in the mouth are the only means of relieving thirst, it is possible to give the ice a food value by using ice-cream. Before such a very advanced condition is reached, small quantities of malt-extract, say a teaspoonful at once, at brief intervals, will sustain life for some time. The desire for a good gulp of fluid is often too strong to be resisted ; with the result, of course, of the stomach resenting the presence of so large a bulk, and promptly rejecting it. Bulk, then, must not be forgotten ; and this applies to medicine as well as to food. A tiny mite of a pill of some morphia with extract of opium gives little, or no offence. And so long as any such analgesic can be borne by the stomach, it is better, from its local effects, than subcutaneous injections. When little food is taken, and that of the most digestible character, there are comparatively no fæces in the bowels, and they may be unmoved for days without injury. Nutritive enemata of pancreatised milk, or dextrine and meat-juice, are often of service.

All that has been said here applies to cancer of the bowel ; especially in the later stages, where defæcation gives rise to much suffering. Cancer is often present in the rectum without giving rise to any symptom for some time. Cancer itself does not give rise to pain ; but if a nerve fibril be caught within its remorseless grip, then the pain is great, and in time agonising. Consequently, if cancer develop in a nerveless area, it is unfeared until it encroaches upon a nerve. A few inches up the bowel there is a comparatively nerveless area ; and cancer on this point may develop to a considerable extent without any suffering ; the first thing to attract the attention of the individual being stools like clay-pipe stems. Persistent flatulence is a symptom of incipient

disease in the bowel rarely wanting. And such flatulence and the peculiar character of the stools may exist for a considerable time before pain is complained of. But pain there is in time; and then opiates become indispensable. In speaking of cancer of the womb Montgomery said: 'There is no temporary relief but in opium; no permanent rest but in the grave.' And so it is of all cancer. Opiates must be pushed with a firm and merciful hand; no stinting; and the amount must be decided by the patient's sensations. Sometimes the amount is almost incredible, where the medical man sees the case in its right light; and can emancipate himself from the thralldom of the posological table in his text-book of *Materia Medica*, and dares to give the patient an efficient dose. In his excellent manual on '*Materia Medica and Therapeutics*,' Dr. Mitchell Bruce says: '*Disease*, especially *pain*, affords great resistant power to the action of opium, which appears to expend its action on the morbid process.' It becomes necessary to increase the dose as the grip on the nerve-fibrils becomes tighter and closer, and the pain greater. Nothing but the actual facts could convince one of the murderous timidity of some practitioners; as a case of rectal cancer seen some time ago in Hants well illustrated. The woman was sinking from sheer agony; while the medical man confined himself to ordinary doses, which had become quite useless and inoperative. A bolder line was taken, with such relief that her children began to believe that some real improvement was on foot; and after sixteen months the general condition is not at the present time worse than it was then, though the cancer has made distinct advances.* And in cancer there is no hope of relief from pain, calling for the withdrawal of the drug; as is the case when it is pushed for the pain of an impacted gall-stone, or calculus lodged in a ureter. In these cases the opium must be stopped the instant the relief occurs; else the patient may be sent to 'a grave never dug for him by Nature.' But in cancer the patient can only die either of the pain, or the opiate,

'And come he slow or come he fast,
It is but Death who comes at last.'

* The boldness with which opium can be used with advantage in diseases of the alimentary tract contrasts with the care requisite about resort to it in thoracic disease.

as ~~Constance de Berkeley~~ Berkeley said when walled up in Holy Island. A pusillanimous timidity, however, prevents some practitioners from taking a course their reason indicates—but from which they shrink through lack of moral courage. Some men seem constitutionally unfit to take upon themselves moral responsibility; and where cancer is involved would let the patient be tortured to death by a disease—as remorseless as the inquisitor of old, rather than venture beyond an ordinary dose of opium to dull the agony. From one point of view it is a merciless selfishness.

In cancer, opium does not produce that palsyng effect upon the appetite, and the liver, which constitutes such a drawback to its use in other morbid conditions; as, for instance, in the cough of phthisis, and, still more, the ‘heart cough’ of congestion of the lungs from valvular disease of the heart: where these untoward effects are readily visible. It seems, indeed, that opium does ‘expend its action upon the morbid process’ in cases of severe pain. The amount of pain unrelieved by opium which exists, is something too terrible for the thought to dwell upon it; and nothing but a knowledge of the actual facts could convince one that such is the case. (Opium first acts on the cerebral hemispheres, but unconsciousness does not involve danger to life. It is only when the centres for the respiration and the circulation are being palsied, that we begin to fear the consequences. Unconsciousness is, as it were, but the outer danger-signals; when the pulse falters, or the respiration becomes embarrassed, then we are passing the inner signals—and must pull up, or there will be a fatal accident.)

When ulceration is established in the bowels, then disinfectant deodorisers become indispensable; for the fœtor of rectal cancer is something almost indescribable by words.

CHAPTER XXI.

THE LIVER.

It cannot be said that all diseases of the liver are specially connected with advanced life ; but certainly they are with a sedentary life, either as cause or effect. The liver is liable to enlargement, due to the development of amyloid material in it in early years, known as lardaceous liver. Also to many maladies where the diet of a temperate zone is indulged in in a tropical climate ; where too much work to do, especially with the assimilation of albuminoids, leads to the congestion of it. Animal food, Indian pale ale, and 'pegs' of brandy and soda, tell upon the liver in a climate, where a near approach to vegetarianism and teetotalism should obtain. Abscesses of the liver frequently follow attacks of dysentery, and compel a sedentary life. A man with a liver, whether congested or crippled by an abscess, cannot take much exercise ; and almost the less food he takes the better—until the liver is in working order again, at least.

Congestion.—But, as years roll on, the liver is liable to suffer mainly as a secondary affair, and causally related to diseases of the lungs or heart. Where there exists a mitral lesion, and the right side of the heart is enlarged, there is a certain amount of venous congestion everywhere. The liver, lying along the veins closely behind the heart, feels this congestion very markedly, and is always more or less enlarged. The valveless portal vein and its branches receive the shock of the right ventricle on each contraction, by the regurgitant current passing through the incompetent tricuspid valve ; and 'leber-pulsation' is a prominent matter with the Germans in connection with regurgitation through the leaking tricuspid, which closes the right ventricle on its systole, when all is normal. The edge of the liver projects

beyond the border of the ribs, and at each stroke of the heart a pulsation is felt in it. When there is any passing obstruction to the circulation through the lungs, there is a temporary enlargement of the liver. 'If accompanied or occasioned by cardiac or pulmonary asthma, the enlargement of the liver is excessive during the paroxysms of difficulty of breathing, and for some time after their cessation. On these occasions, it needs not the tact of a Piorry to detect the variations in the size of the organ, for though nothing approaching the rapid enlargement and diminution of the spleen in agueish attacks, it is sometimes, nevertheless, very remarkable.'—(*McLachlan.*) In diseases of the lungs, where the flow of blood through them is obstructed, such enlargement of the liver is also seen. Where there is emphysema, with or without chronic bronchitis, the diaphragm becomes flattened, so that the viscera on the abdominal side of it are thrust downwards; the displacement of the liver being the most marked. It will be found projecting beyond the border of the ribs, even when not measurably increased in bulk. The liver lies in a very warm nook, and when so displaced and only covered by the thin abdominal wall, is liable to chills—which further embarrass its action. In the East, where the liver is liable to congestion, with resultant enlargement, so that a part of it projects beyond the protection of the ribs and lung, it is common to wear a cummerbund; and this, or other protecting belt of flannel should be worn by all whose livers project beyond the edge of the rib-border.

When there is long-continued congestion of the venous system, especially in impaired conditions of the heart, then there is a development of connective tissue in the different viscera: increasing them in weight and bulk, but impairing their functional activity; because the new material is at once functionally useless, and encroaches upon the normal elements of the viscera. In heart-failure, after death all the viscera are found so hardened and weighted. A large liver is the usual outcome of valvular mischief of the heart, or of failure of its muscular walls. All measures which improve the condition of the heart relieve the liver; that is a principle of practice. All measures which relieve the venous congestion act beneficially upon the heart. Free purgation is an important matter as part of the latter, and gives great relief to the liver as well.

Cirrhosis of the Liver.—When the liver is chronically congested it enlarges, and its surface becomes rough; and this condition is variously termed ‘granular degeneration,’ ‘gin-drinker’s liver,’ ‘nutmeg liver’ (from the liver-lobules looking on section like a section of a nutmeg), or ‘cirrhosis.’ The liver consists of a congeries of lobules with a network of bloodvessels around them, and in them. One of the tributaries to the portal vein, and an important one, is the gastric vein. Matters absorbed into the bloodvessels of the stomach pass at once into the liver. The sugar of our food passes swiftly to the liver, and so does alcohol. Malt liquors may upset the liver and make people bilious; but it is spirits which set up that congestion, or a low inflammation in the liver, with development of a lush growth of connective tissue, as the result of this vascular fulness. This connective tissue, otherwise ‘basement membrane,’ is the packing material of the viscera: its excessive growth first enlarges the bulk of the viscus; but later on contraction follows, till the viscus becomes smaller than natural—and this last state is called atrophy. All lobules do not become affected at the same time, or to the same extent; consequently the surface becomes rough, as some lobules are in the swollen early stages, and some of their neighbours are in the contracted latter stages. As time goes on the whole organ becomes more or less involved, and a distinct shrinking in size is found. How long a process this may be is a matter varying with each individual. In some hard-drinking men it is a matter of a considerable number of years; though publicans, who especially suffer from it, are not, as a rule, a long-lived race. The quickest progress is seen in young females who take to drinking—where it may run its course in a few months. In a case which came into the law courts a few years ago, there was a distinct history of medical examinations, which told that in spring the liver was normal; in summer it was large; in autumn it began to shrink; and in early winter, on post-mortem examination, it was found distinctly atrophied. Here the young lady had been plied with ardent spirits with a murderous intent.

Ascites.—When cirrhosis of the liver sets in in a man advanced in years, it usually runs a somewhat slow course. Frequently there is an accumulation of fluid in the belly, or peritoneal cavity, which is termed ascites. With a man of middle age tapping may be

repeatedly performed, giving great relief for the time. Especially is this the case where the constitution is originally good ; and the man belongs to a race who 'make old bones.' The less heroic measures are cathartic medicines combined with some mercurial given at intervals. Of course much of the rate of progress depends upon the amount of alcohol taken and its state of dilution. If spirits be drunk 'neat,' that is undiluted with water, the effect of the irritant alcohol upon the liver-tissues is most marked. If they are diluted, less irritation is set up ; but in secret drinking concealment is in action, and the smaller the bulk the easier is the toxic agent hidden from sight. For the same end it is gulped down without any dilution ; consequently in young women, who have given way to intemperate habits, we see the most rapidly progressing liver-cirrhosis. With the older man concealment is not in action, and therefore it is quite possible to advise dilution ; for withdrawal entirely is out of the question, practically.

As to the disturbance of function in the liver, the albuminoid elements of our food are the main offenders ; but an old hard drinker rarely craves for much food. Indeed, his law is this— 'As long as a man can eat, he can carry his drink ; but when his appetite fails, then the drink takes hold of him.' And it is a well-founded view to take. When the stomach contains food the absorption of the alcohol is comparatively slow ; and the irritation set up in the liver little. But when drink is taken on an empty stomach, then the liver is greatly irritated. The food should consist of meat-broths, milk-puddings, and such like light matters. If food is loathed, a compromise should be attempted, and an arrangement entered into that the spirits shall be taken in milk. Very often this last is the saving of the patient for a time. It is no practical good to be too strict with a man whose brain has long been soaked in alcohol. The same cirrhosis is at work in the brain as well as the liver ; and to be too exacting would only lead to concealment, and then there can be no limits agreed upon. Compromise, as the late Lord Beaconsfield insisted upon, is sometimes the most prudent course to adopt ; and it certainly is so here.

So much, then, for liver-maladies connected with advancing years. There remains, however, one other matter for consideration connected with the liver, and that is cancer. It may be

primary ; but far more commonly it is secondary to cancer of the stomach, or other viscus. Little particles of cancer are floated away in the blood-current of the gastric vein, and become arrested in the network of the hepatic circulation—for the portal vein subdivides into a fine meshwork of little vessels in the liver, which again gather up into three hepatic veins (constituting the liver a species of filter) ; where they lodge, and become each a nucleus for a new cancerous growth. Such secondary growths may be termed ‘cancer-colonies’ as regards the parent growth. These cancerous growths cause no pain while in the interior of the liver ; but may set up a painful local peritonitis when they reach the serous membrane which envelops that viscus. Of course it is once more a case of resort to opium as to treatment.

Jaundice.—In youth jaundice is a malady of little moment, and rarely threatening life ; but its significance in advanced life is very much graver. It may, indeed, be caused by a temporary obstruction of the bile-duct by a gall-stone ; passing away after the gall-stone has found its way into the bowel : and at times it is caused by catarrh of the gall-duct, when its gravity will depend upon the amount of obstruction caused by the catarrh. Whenever there is obstruction of the ducts, bile, or some elements of it, passes into the blood. In such case it stains the skin, the conjunctiva of the eyes, and the mucous membranes, as those of the throat. It also appears in the urine. There is a suppression of bile, just as there is at times a suppression of urine ; and in both cases fatal coma is apt to ensue. (It is evident that there are toxic agents formed within the body which act like narcotic poisons.) Jaundice is at other times significant that there is disease, as a cancer or tumour, either in the liver itself, or pressing upon the bile-duct. Perhaps it is more seriously significant when it appears slightly and fitfully at intervals, than when one well-marked attack occurs ; except in those cases where the discoloration is intense, and where fatal coma quickly supervenes.

In youth, emetics form the most efficient treatment of jaundice ; but where the tissues are senile, it is not safe to risk the straining inseparable from emesis, in consequence of the danger of rupturing a vessel within the head. Sulphate of soda with nitro-hydrochloric acid forms an effective measure ; and large doses of the first are often requisite to overcome the torpor of the liver. A mercurial

at bedtime may also be of service. Some rapidly acting stimulant as ammonia is good ; or a tonic like strychnia may be added to the mixture to antagonize the depression, which is caused by the action of the bile-products upon the nerve-centres. When there is an absence of bile in the bowels, it is difficult to move them ; a matter to be remembered.

Gall-Stones.—By reference to the diagram at p. 51, it will be seen that the gall-bladder lies on the bile-duct. As years go on, biliary calculi are apt to form in the gall-bladder. They consist of cholesterine, a species of fat, and inspissated bile. They may form singly, or the gall-bladder may contain a number of them ; and when one is passed it is customary to examine it for facets, which tell of others remaining. Sometimes the gall-bladder reminds one of a bag full of marbles. However they come to be formed, they are common in age ; and females seem specially liable to their formation. As long as the gall-stones remain in their habitat, there is little known of, or about them ; or if one escape which does not block the duct, it creates no inconvenience. But when one gets lodged, then very acute pain is set up. 'There is no more severe pain than that produced by the passage of a gall-stone. Men of the strongest nerve and fortitude may then be seen writhing under the excruciating agony, seeking relief in every possible position, their countenances pale and deathlike, the skin covered with a clammy moisture ; and yet with all this the pulse is but little, if at all, accelerated. In the moments of comparative ease, the patient sits half bent, with the body resting on the knees, and the hand applied to the stomach or hypochondrium.'—(*McLachlan.*) The attack may last eight or ten hours ; but at times it lasts much longer, or even proves fatal. At times where the obstruction is small, there may be only some nausea followed by some jaundice ; and this is more liable to occur with very old persons.

For the relief of the agony opium in large doses is imperatively called for. Where there is incessant vomiting, the hypodermic injection of morphia is indicated. But, however administered, it ought to be combined with atropia, or belladonna, for two reasons. In the first place, the pain is depressant, and the opium acts in the same way ; so that there is some danger of lowering the centres of the respiration and the circulation till the limits of

danger are reached; and such lowering would be prevented by the belladonna, while it does not interfere with the analgesic effect of the opium. In the second place, belladonna has a special action upon circular muscular fibre, relaxing it; and therefore it is indicated in all spasm connected therewith, as in hepatic or renal colic, where contraction of circular muscular fibre, gripping the offending object, is in action. Then Prout held large doses of carbonate of soda in hot water to be useful. Then external applications, as hot flannels, are good; and these may be freely sprinkled with laudanum with advantage. If any inflammation of the duct appear, a few leeches might be put on over the seat of pain, as they have been found of signal service in such cases. Sooner or later the pain ceases, and then the opiates must be withdrawn—and speedily too. The toleration of the drug given by the acute pain having now passed away, an awkward accident might follow—if it be not at once and very promptly stopped. The sufferer has a natural wish to see the object which has caused him so much pain; and it is recommended to break up the motions in water, when the stone will be seen floating on the surface. ‘A person that has undergone the torture of passing a gall-stone will not be deterred from adopting any measure that may discover the enemy.’—(*McLachlan.*) Beyond the gratification of the curiosity, there lies a practical matter connected with inspection of the stone, viz., the presence or absence of facets; by which the probability, or not, of another offender may be surmised. Such, then, are the diseases of the liver and its appendages, or rather the most pronounced of them; but their importance is trifling relatively, compared to the great matters of functional disturbances of the viscus—from the frequency of these last.

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CHAPTER XXII.

GLYCOSURIA AND DIABETES.

THE liver is the storehouse of fuel for the body. It is the furnace in which the surplus albuminoids are burnt up. It elaborates the albuminoids brought to it from the alimentary canal, into the serum albumen of the liquor sanguinis, for the nutrition of the tissues. It also forms bile.

Not only is it concerned mainly with biliousness ; but it is the organ at fault in a saccharine condition of urine, and in some forms of albuminuria. The first is spoken of commonly as 'diabetes;' the latter as 'Bright's disease;' both maladies which are closely linked with a fatal issue in time. There is, however, a fallacy in making glycosuria synonymous with diabetes ; and albuminuria with Bright's disease. The terms are not the equivalent of each other, as they are too commonly assumed to be—both in, and out of the medical profession.

Epilepsy may be due to functional disturbance of the motor area of the brain, as much as to a tumour. This is so well known that no one diagnoses a tumour of the brain because a patient has an epileptic fit. So it is with conditions of the urine. A saccharine condition of the urine does not always involve that terrible disease diabetes ; any more than albuminuria always indicates that renal condition known as Bright's disease.

This has been protested by many writers. Dr. Prout wrote fifty years ago : 'A saccharine condition of the urine exists in gouty and dyspeptic individuals much oftener than is supposed ; and hundreds, who are quite unaware of it, pass many years of their lives with this symptom more or less constantly present.' M. Dechambre went so far as to say that sugar constantly occurs in the urine of elderly persons ; and that in nineteen cases out of

twenty ~~in aged women~~ in the Salpêtrière the urine was saccharine, More recently Dr. Lauder Brunton, F.R.S. ('Lettsomian Lectures,' 1885), says: 'I have elsewhere insisted strongly on the distinction to be drawn between glycosuria from the mere presence of sugar in the urine, and the disease diabetes (article on Diabetes, Reynold's 'System of Medicine'). Simple glycosuria may occur in perfectly healthy persons, and is indeed much more frequent than people generally believe.' While the writer has put on record several vigorous protests against the slovenly thought which mixes up these two totally different, and separable conditions; as also the entanglement connected with albuminuria; especially one protest in 'The Physiological Factor in Diagnosis.'

The amylaceous, and saccharine matters of our food pass through the wall of the alimentary canal into the portal vein as soluble grape-sugar. This solubility enables it to pass into the blood; but in this condition it would as easily slip out of the blood again by the kidneys. So it is changed by the liver into glycogen, or animal starch; in which condition it is stored up for the use of the body betwixt meals. By such arrangement it is possible to take food at intervals; and without it life would be one long dreary meal. If sugar be taken in considerable quantity the amount of sugar in the portal vein may exceed the power of the liver to turn it all into glycogen; and so a certain amount may appear in the urine. Surely this is no very desperate state of affairs! Where the digestion is rapid, such show of sugar in the urine is *à priori* probable. Where the assimilation is good, more sugar than is required by the body is eaten, and the excess is put on as fat, as in fattening cattle. Many corpulent people pass sugar in their urine; indeed, if they stored all the redundant sugar as fat, they would become obese; and their condition would be burdensome to them. Glycosuria in well-fed stout persons is not the wasting disease diabetes! It is rather a sort of waste-pipe affair.

Then, again, in such a delicate arrangement of supply and demand temporary derangements may occur at times—indeed, it would be rather a matter of surprise if they did not occur. The effect of mental disturbance upon the liver is well known; from the loss of appetite of an anxious time, to the jaundice produced by a sudden fright. Very commonly some shock, as an accident,

or, even the witnessing of one, will set up such disturbance; and the patient will become acutely ill with diabetic symptoms, *i.e.*, wasting, thirst, muscular weakness and glycosuria. To such state Sir Andrew Clark has applied the happy expression 'a glycosuric storm.' Some persons are liable to these passing tempests. One man has one whenever he is worried in business. An old lady known to me has them apparently as the result of cold. In other cases the trouble is comparatively serious; and fairly may be called diabetes. Dr. McLachlan gives such an excellent illustrative case it is worth quoting: 'A physician in a fashionable watering-place south of the Thames was seriously indisposed, when about fifty years of age, with all the symptoms of the disease. He was fast losing flesh, passed immense quantities of saccharine urine, suffered intensely from icy coldness of the lower limbs, with at times so much weakness that they with difficulty sustained him in getting in or out of his carriage. Things went on this way several months, when the diagnosis he had arrived at was at once confirmed by two physicians of eminence in the metropolis. A man of resolution and firmness, he instantly abandoned a lucrative practice, and retired to Ramsgate, where he commenced a series of salt-water baths, drove an hour or two daily in a shut carriage, attended rigidly to the state of his bowels, abjured all sugary or sugar-making substances, with few almost unavoidable exceptions; took a glass or two of sherry daily, or a little brandy and water; lived principally on eggs, milk, cream, poultry and game, with brown bread or ship-biscuit, and 'plenty of fresh butter.' He took no opiate, and, with the exception of an occasional mild laxative, the only medicine he prescribed for himself was one or two draughts daily of the citrate of ammonia. Under this system the sugar rapidly disappeared, the urine greatly diminished in quantity, he gradually recovered flesh and strength, and in nine months he was able to resume work. A few months after that I saw him an active, robust, ruddy-complexioned gentleman, inclining to corpulency, without, as he affirmed, any but an occasional faint trace of sugar in the urine.' This is a most instructive case. Against it can be set one somewhat different, but equally instructive. An elderly physician, a tall, strong man, began to feel some symptoms of diabetes, and found sugar in his urine. He had an

enormous consulting practice—which he at once abandoned summarily, and betook himself to the south coast. Some eight years after this, on talking the matter over with him, he asked : ‘Where would I have been now if I had stuck to that large practice?’ Tapping the ground with my foot my answer was : ‘Down here.’ He at once relieved himself of the tax upon his mental, and bodily powers ; and therewith his troubles came to a standstill. That conversation took place three years ago. He is at the present time a man wearing well for his years. Talking to Mr. Van Abbott one day, and asking him who were his chief customers, he replied : ‘Grey, worn business-men, looking older than their years.’ And there can be no doubt that worry is a great cause of diabetes—whether a glycosuric storm, or the classical wasting disease. I quite hold the view expressed by Dr. Lauder Brunton, when he says : ‘Most of the cases of diabetes that one meets with in middle-aged persons appear to originate in worry and anxiety.’ The logical outcome of this is—that when diabetic symptoms show themselves, relief from such worry is the first thing to be insisted upon. Had Alderman Nottage taken things easy instead of being Lord Mayor, a very different fate might have been his. He broke down under the tax he imposed upon himself.

Then there is beyond any possibility of dispute that terrible disease ‘classical *diabetes mellitus*,’ to which some writers add ‘senilis,’ where the urine is highly charged with sugar, and voided in large, or even enormous quantities. When sugar is present in the blood in any quantity, it gives rise to intolerable thirst that cannot be quenched ; by which large quantities of water are drunk ; and this washes the sugar out of the blood by the kidneys, and so gets rid of it. The patient is weak and ill-nourished because he is practically starved. It is no use to give him food which will turn to sugar ; that will only aggravate his condition. The aim, then, is to feed him upon food which is not convertible into grape-sugar, *i.e.*, lean meat, cheese, fat in all forms, and vegetables. On such food he can live. This is admirable in theory, and good in practice within certain limits. Where such a dietary is adopted for mere glycosuria, it often does much harm ; and in cases where the accidental discovery of sugar in the water has led to the hypothesis of diabetes (proper), and to

the adoption of this dietary, much inconvenience has arisen : possibly even mischief. The adoption of a dietary too rich in albuminoids is to upset the other function of the liver—the metabolism of albuminoids, and so to load the blood with nitrogenized waste ; which in turn injures the kidneys. Then, again, when the stomach revolts at the dietary, and the palate is in rebellion (for some diabetic foods can only be eaten by those who either go in great dread of death, or have some tremendously strong object to live for), it may be asked what is the objection to some ordinary bread and biscuit as a vehicle for butter ? In very bad cases no doubt this would add to the patient's sufferings ; but in medium cases, would not the benefit outweigh the addition of some more sugar to be washed out ? This is a view which may be taken in many cases ; and its adoption has often worked well. But the matter is one for consideration ; and the decision must rest on, and with the peculiarities of each case. One case was known to me in a medical man, where the accidental discovery of sugar (in large quantities) in the urine, led to the adoption of a rigid non-saccharine dietary ; with the result of such deterioration of the health that in despair the patient took some raspberry jam—with such good effects that he threw the dietary to the winds, and yet lost his glycosuria. Years after he used to tell the tale, and died of angina pectoris ; without any return of his glycosuria. He used to say, 'It was not the diabetes, but the treatment which was killing me !'

How comes it, then, the lay reader may ask, that such confusion exists upon this matter ? Because the medical student has the importance of finding sugar in the urine well drilled into him, in order to make a good appearance at the examination-table ; and one, or more well-marked cases of diabetes are used to make a permanent impression upon him ; and it usually does this, for a typical case of diabetes could not easily be forgotten. In fact, he never escapes from the lesson as a rule ; and in after-years, whenever he discovers sugar in the urine, he jumps to the conclusion that he has diabetes to deal with ; just as he will diagnose Bright's disease when he discovers albumen in the urine. Nothing but after-experience, and reading can correct the impression made by attaching undue, and disproportionate importance to one symptom of a malady, to the neglect or depreciation of others. Why is the

student not taught more correctly? asks the lay reader with some indignation. Because there is not length of time to teach him thoroughly. A diploma is not a maximum test; it is merely a warranty that the owner is in possession of so much knowledge: a medical man is a student all his life. Medicine is not such a lucrative profession that a man can devote ten years to a college career. And then, again, the persons who attend a hospital are either ill, or think themselves so; and cases of mere glycosuria do not present themselves to the student's notice: they are matters of after-experience. Besides, it is well to imbue his mind carefully with the significance of saccharine urine as a leading idea with which to commence practice—whatever that may teach him!

When a person is truly diabetic it is well to cut him off as completely as possible from all amylaceous, and saccharine foods; which is giving the liver rest as regards its glycogenic function, as well as relieving him from the torture of having a quantity of sugar in his blood. Next, to relieve him of work and worry. After that the matter of giving opium and codeia may be considered; as well as attention to the bowels. Encouragement should be given him to take all the exercise that the languid limbs are equal to. The late Dr. Richardson, of Dublin, lived for years an undoubted diabetic; and attributed his respite from death to his inflexible determination to accomplish so much walking every day, despite his weariness and the tax it was upon his will-power. The same measures are indicated while a glycosuric storm is blowing. But the question arises, When may the dietary be relaxed? This is a question much easier to ask than to answer. A number of individuals are known to the writer where sugar has been constantly passed for years without apparent impairment of the powers. In one well-known case sugar was passed freely, with general diabetic symptoms, in 1874 (probably earlier, if known). For years more, or less sugar was always present; but there were no diabetic symptoms. At the present time the urine is normal in amount, sp. gr. 1021, with only a trace of sugar in it. All this time the greatest activity of body and mind has obtained. The patient is gouty. A more, or less modified dietary is observed in each case; one indulging in one forbidden article, another in another. There is, however, a general avoidance of cane-sugar among them. One can eat starch

and dextrine or maltose not only with impunity; but if any great quantity of the latter be eaten the rise in weight is marked; instead of a large output of sugar, as ought to occur on theory. Any indulgence in cane-sugar, however, will raise the whole array of diabetic symptoms, and quickly.

One day, casually meeting Dr. B. W. Richardson, F.R.S., and falling into talk, I asked him: 'When a patient has saccharine urine, how do you decide whether he is glycosuric or diabetic?' He fixed his dark lustrous eyes on me for some time, and then said, gravely, 'I look at him.' Probably the whole subject could not be summed up more tersely. If the man who voids saccharine urine passes a large quantity of it, he is worn, jaded, has an anxious look, and his face tells, too, of wasted muscles, just as much as does his general appearance; while the glycosuric man is often well nourished, his face is natural, and he fills his clothes. The eye generally can settle the question. The diabetic person tells of thirst and leg-weariness; while the glycosuric says little of the first, and nothing of the latter. Where there is a moderate flow of urine under sp. gr. 1030, and the health is good, usually there is nothing to be anxious about. The question does not turn upon the presence of sugar in the urine; but upon the fact of how ill is that person who passes the saccharine urine. He may be going to die, and that, too, in no long time; or his health may not be in the least impaired by it. If he is well nourished he is not dying of a wasting disease—that is certain! It will frighten a glycosuric man to tell him that he has got diabetes, and is a dying man; but it may be questioned if he will be frightened to death. If he does not die, he is apt to bear malice for the unnecessary fright; yes, and to show it, too, the unlucky doctor who turns out to be a false prophet—will find.

There is such a thing as seeing into a thing; and such a thing as seeing through it. All students see into diabetes; but the man who wants to see through glycosuria must go through it, and come in again from the other side. He must start off, doubtless, with the significance of sugar in the urine as one symptom of diabetes; and when he finds glycosuria, to be on the alert as to what it may mean. But later on he must learn to see that there are circumstances other than the classical diabetes mellitus, under which sugar appears in the urine. His first matter is to convince

his examiner that he has a strong conviction about the gravity of sugar in the urine; but he need not stop at that point all his life—and cause avoidable unhappiness and misery by telling a well-fed, rubicund, hearty paterfamilias that his life is in jeopardy, because there is some sugar in his water. His prognosis lacks verification; the man does not get on with his dying; his naturally anxious wife insists upon him seeing a specialist, who puts his mind at rest. Their anxiety is relieved, and their apprehensions are dismissed; but their misgivings are transferred from the patient's health to the intellectual capacity, and professional knowledge of the unlucky medical man, who has so misread the case. And such cases are sadly numerous. The man who is so lazy, or so slovenly in his work as to make his diagnosis turn on the behaviour of the contents of a test-tube, is only served right—if such a mishap does overtake him.

Glycosuria is not always diabetes; and calling it diabetes will not make it so. And it would be just as well if the student were taught this; but then, if this were taught, he might (such is poor human nature) forget to remember that a saccharine urine is one symptom of a very grave disease!

What should be the dietary of patients with saccharine urine? Where there is but a trace of sugar, it may be questioned whether any regulation of the dietary is advisable. Where there is a moderate amount of sugar, and yet the patient is well nourished, probably it is well to avoid sweets, and very sugary matters; but nothing more. During a glycosuric storm, and in true diabetes, all carbo-hydrates should be avoided—so far as can be done without harm. Sometimes a little bread, or biscuit must be allowed to conciliate the stomach. The food should be fat *par excellence*; and the rest of the food should be little more than the means of getting the stomach to tolerate fat. Vegetables, as all members of the cruciferae—cauliflower, cabbage, Brussels sprouts, etc., spinach, celery, are all good cooked; onions and kale contain some sugar; the lettuce, watercress, and radishes may be eaten raw. The legumes, cereals, turnips, and carrots, are objectionable, the one for starch, the other for sugar. Meat is permissible in moderate quantities; but too great indulgence is apt to produce lithiasis. Gluten bread, and almond cakes are good. Glycerine is often of use. Cream is, of course, good; so is cheese, especially

cream cheese. Milk contains milk-sugar ; yet skim-milk has been in vogue for the cure of diabetes. But the food *par excellence* is fat, as much as can be taken. Professor S. Haughton found a dying diabetic saying in his delirium, 'Fat, roasted fat, by the angels of heaven!' His thoughts were wandering to a future state, and a food on which he could sustain life. Whether a rigid dietary must be strictly carried out—or the regimen may safely be relaxed, is a matter in each case only to be settled by a medical man competent to have, as well as give, an opinion.

CHAPTER XXIII.

THE GENITO-URINARY ORGANS.

THE diseases of the urinary organs are truly the diseases of advanced life. Urethritis is common in young men, doubtless ; but that is because the penis is also part of the sexual apparatus of the male. Young persons may have kidney disease certainly, as the result of acute congestion of the kidneys from cold, or scarlet fever ; or they may have amyloid kidneys, especially where there has been much suppuration, and still more if this have been long continued. But, speaking broadly, disease in the kidney is a matter of mature life.

Congestion.—Congestion of the kidneys. This may occur in kidneys free from any disease, or in kidneys which are the seat of old-standing mischief. The danger to life entailed by it is in direct proportion to the amount involved. If but one kidney be congested the other will keep the blood fairly pure, and enable the patient to outlive the gale. If both be congested, then the case is more serious. If the case be slight, the urine will be smoky ; if of bloody hue, the congestion is more severe. The function of the kidney is to cast out nitrogenized waste, certain salts and water ; substances in solution, whose accumulation in the blood will cause disturbance elsewhere, even to death itself. The kidneys, like the lungs and alimentary canal, are but infoldings of the primitive skin, with a specialised function ; but each retaining much of the primitive function of the skin. Consequently 'in the presence of urea, the phosphates, chlorides, and sulphates of the alkalies, the constituents of sweat, are those of urine.' There are two matters, then, to bear in mind in treatment directed to the kidneys : the one is to be cautious about the food given, with the waste to be got rid of ; and the other is to

cause the skin, and other emunctories to take up the eliminant action to which the crippled kidneys are unequal in their congested state. Consequently the first step is to place the patient on drinks, as whey, apple-water, or tamarind-water, with a little grape-sugar added, if very ill; or non-nitrogenized matter if not severely ill. The next is to excite the action of the skin, as by hot baths and sudorifics, so as to do a distinct amount of vicarious elimination; and for the same end to act smartly on the bowels. With these may be combined hot poultices over the loins. By such combined measures, whatever the result, the best that human power can do has been done. A drink of Potus Imperialis, or barley-water and crem tartar (otherwise cream of tartar) or bitartrate of potash, is desirable; not only at the time, but for some time after the kidneys have recovered from the passing disturbance.

Such an acute condition is apt to be set up where the kidney has undergone some permanent change in its structures, by which it is weakened; and forms one of the dangers which overhang chronic renal disease, otherwise Bright's disease—which will engage our attention shortly.

Suppression of Urine.—Actual suppression of the urine, or Ischuria Renalis, is a not very common occurrence, met with in elderly persons when it does occur. It may go on to fatal coma; or it may be recovered from. In one case which came under my notice the suppression lasted three days; but under the combination of measures just given above the urine returned, in small quantity at first, and then in natural amount. The casts of the renal tubules found in the urine when the secretion returned told of old-standing mischief in the organs; yet eighteen years have passed and gone since then, and the patient still lives. Another case occurred in an elderly man. To make sure that it was not a case of mere retention, I passed a catheter into the bladder: there was no urine there. He, too, came round, and lived some years afterwards. Odd cases are related of no urine being secreted for a number of days, with complete recovery.

Uræmia.—The constituents of urine constitute a poison if retained in the body: a poison which acts upon the nervous system very markedly. The phenomena consist of twitchings and convulsions of the voluntary muscles, headache, drowsiness, coma,

defects of sight and hearing, vomiting and diarrhoea.'—(*Wm. Roberts.*) The last two tell of nature spontaneously setting up vicarious excretion, and casting out urinous matter by the stomach and bowels; a urinous odour being found in the vomited matter and the stools, while both undergo ammoniacal decomposition. Usually there is heaviness and headache, or a drowsy state. The patient seems to take little notice of strangers entering the room; instead of the surprise which their presence would excite in an ordinary way. I have seen this condition where, when spoken to, no notice was taken by the patient. When a louder tone was adopted the sound seemed to reach the brain; but only after a distinct lapse of time, as if the message tarried on the way betwixt the ear and the sensorium. The sight may be dimmed, or lost even, and this last may occur without recovery being impossible. Then the sensorium is generally involved, and unconsciousness comes on gradually, sometimes lifting and lowering like a mist on the mountains: either ultimately clearing off, or deepening into coma—as the case may be. There may, or may not, be headache. Then the motor area is involved, and convulsions are present. There may be one, or more; when the condition is very grave there is insensibility betwixt the fits; when less grave, the patient seems to drowse, but can be roused. Or the brain-disturbance may go on till a condition resembling that of apoplexy may be set up. Very commonly there is no injection of the countenance. The pathology of uræmia is a blood laden with waste matters, which normally are cast out by the kidney, but which are just then retained: while with the coma there is serous effusion on the brain in fatal cases.

Such a condition not uncommonly occurs when a diarrhoea has been checked in an elderly person. There is imperfect renal action, excrementitious matter collects in the blood, nature sets up diarrhoea—as a compensatory process of elimination. The medical man is called in, and proceeds to arrest the diarrhoea; if he succeeds in doing this, the vicarious discharge which was the safety of the organism is abolished; and uræmia sets in, telling of what has been done. The first patient I had after qualifying died in this precise way. On my coming home my father went to the seaside, and my first call to a new case was a sharp attack of diarrhoea in a middle-aged woman. It was decidedly intract-

able; but at last, to the great satisfaction of all, the discharge ceased. In six-and-thirty hours the woman was in a marked condition of uræmia, and died comatose. On inquiry of my father, it was found that the patient had been the subject of Bright's disease for years; no hint of which had been dropped to me by her, or her friends. The lesson sank deep; and ever since then my practice has been in all suspicious cases to see that the kidneys are acting before proceeding to arrest the diarrhœa. Indeed, to rouse the action of the skin, and restore the functions of the kidneys, is to cure the diarrhœa in most cases.

One of the dangers of opium in renal disease is its arrest of the function of the kidney, and the production of a state of uræmia.

Such uræmic state may supervene on a bout of drinking; and such a case came under my notice some years ago at Balham. The man came up to a wedding, and indulged freely in food and drink. When the first symptoms of drowsiness appeared, more spirits were given him to rouse him, with the result of the uræmia deepening, until coma passed into death. No doubt there was acute congestion of the kidneys caused by the alcohol; the kidneys being the seat of old-standing disease.

Irritable Bladder.—This is one of the discomforts of old age. The bladder is sometimes irritable in young women of highly strung, nervous temperament; and such irritability is greatly increased by vegetable tonics. (This is the reason why many ladies object to quinine and strychnine, which have been taken as tonics.) With many old men their bladder becomes a great nuisance to them, interfering with railway-travelling, attendance at church, or other meetings, and involving a travelling urinal for such emergencies. Especially troublesome is it at night, breaking the sleep into fragments. Yet the whole bulk of urine passed in the twenty-four hours may be but small. Hyoscyamus and belladonna act most soothingly upon the irritable bladder centres, and give great relief in such cases.

Incontinence of Urine.—This is almost always a disease of men. True it is that some elderly women cannot hold their water, especially when afflicted with cough, which expels some urine at every paroxysm; but still, 'dribbling' is a masculine disease. It is usually due, as Sir Henry Thompson has pointed out, to the

bladder being overfull—because the power to employ it is lost. If a hand be placed over the bladder, it is found distended; if a catheter be passed, a large quantity of urine comes away—often very much to the patient's surprise. The patient is convinced that he has lost the power to retain his water, and that his bladder is empty, and is incredulous when the condition is explained to him; consequently the proof startles him.

Difficulty in Passing Water.—Old men often experience a difficulty in passing their water. This may be due to an old stricture—the painful remembrance, too often, of early folly—or an enlarged prostate gland, or a stone in the bladder. The symptoms vary in each case. When there exists a stricture the stream, such as it is, is a stream (however small) which may possibly twist, or be forked. In an enlarged prostate gland, the urine is passed in drops which fall down at once from the point of the penis; contrasting with the stream driven through a stricture. The act of moving the bowels produces pain in the enlarged gland, then pressed upon. A certain dribbling at the end of the act of making water is a significant fact in the early stage of the enlargement. Where there is a stone there is no difficulty about making water, as a rule; but the stream abruptly stops at times when the stone falls over the orifice of the urethra—the outlet from the bladder. In both stone and enlarged prostate gland blood may be passed at the end of micturition. In stone, any jolting, as riding in a cart in a country lane, or riding in an omnibus in a town, causes acute pain. In enlarged prostate the patient may become utterly unable to empty the bladder without the aid of a catheter.

Renal Colic.—This may vary from the condition spoken of as 'gravel,' where there is a good deal of local discomfort at the time of micturition, up to a condition of intense agony. If a calculus form in the pelvis of the kidney, and be dislodged by some shaking, it may fall into the mouth of the ureter. This being somewhat trumpet-shaped, the stone is driven on by the fluid behind it till it sticks. Then come on a very distinct series of symptoms. The pain extends down to the testicle on the side affected (which is drawn up by the cremaster muscle), and down the other branch of the genito-crural nerve, running down the inside of the thigh. And very sharp pain it often is; like the pain

of a gall-stone, it often would soon extinguish life if it were not for the deadening effect of opium freely given. Here, too, the circular fibres are apt to grip the stone, and consequently belladonna may be combined with the opium with advantage. It not uncommonly happens that a stone in the pelvis of the kidney is dislodged into the ureter in the shaking of travelling; and a middle-aged, or elderly gentleman arrives at his destination in the country to be seized with renal colic; and soon be very seriously ill—to the consternation of all, and causing the utmost confusion. The necessity for prompt action, and for unusually large doses of opium, often puts the village practitioner into a quandary; and he lets the patient die because he fears to give the dose of opium which alone can give effective relief. If the patient die, he may be blamed for being the death of him; and as his skin is nearer to him than his shirt, so he gives a safe dose—and awaits the results. And the results vary. Sometimes the case ends fatally; but much more frequently at last the pain ceases as the calculus passes into the bladder; and then the opium must be promptly stopped, else death may threaten from another quarter. Some persons are the subject of repeated attacks of renal colic.

Calculus in the Kidney.—Sometimes the calculus in the pelvis of the kidney attains such a size that it cannot be dislodged, and then it sets up its own symptoms. A persistent aching in the loin, on one side, is suspicious; especially when uric acid is steadily present in the urine. If to this be added attacks of vomiting at times, the suspicion is strengthened. (A renal calculus sets up vomiting just as does pregnancy.) There is, too, tenderness on pressure; and at times enlargement of the kidney may be felt. The persistent use of potash, freely diluted, will often relieve the symptoms; and some time ago a patient, a medical man from the South Coast, with such symptoms, showed me some bits of a renal calculus which had come away under this line of treatment; leaving him free from the trouble which had for long been the plague of his life. Multiple renal calculi have been removed by cutting down into the kidney.

BRIGHT'S DISEASE.

The group of renal diseases spoken of promiscuously as 'Bright's disease' contains several members, presenting varied

features. Hence the confusion which obtains within, as well as without, the medical profession on the subject. Not only that : but even what is called Bright's disease—a restricted term in Germany—by Teutons has different features from those of true interstitial nephritis in England. This disease is not (as is often assumed) named after the illustrious statesman, but after a Dr. Bright who made a great study of diseases of the kidney ; and who first drew general attention to the symptom of an albuminous condition of the urine. Franklin Blake, in Wilkie Collins's well-known novel, 'The Moonstone,' says of the English people, 'When we are not occupied in making machinery, we are (mentally speaking) the most slovenly people in the universe.' And the truth of this is seen in the term 'Bright's disease' being applied to any person whose urine happens to contain albumen. The matter of 'albuminuria' will be discussed after the present chapter is brought to a close ; and the distinction pointed out betwixt 'true' and 'false' albuminuria, *i.e.*, the circumstances under which it indicates kidney disease, and the circumstances under which it has no such significance.

Dr. Bright found albumen in the urine in cases of renal disease ; and it became his practice to test the urine of all patients. His predecessors satisfied themselves by boiling some urine in a spoon over a lighted candle. He advanced to a test-tube and a spirit-lamp. No doubt his observations were much more carefully made than were those of the men who preceded him. When M. Solon wrote his work 'De l'Albuminurie, ou Hydropsie causée par Maladies des Reins,' the late Sir Robert Christison entered his protest against the term as follows :—'The euphonious elegance of M. Solon's designation will not altogether atone for the philosophical error of naming a disease from one of its symptoms.' Others have also protested to the best of their ability ; but the word holds its own with the tenacity of original sin. The fact is, as we will see, albuminuria may exist without kidney disease ; and, what is more, kidney disease may exist without albuminuria. There are times when its presence causes us no disquiet ; and there are times when its absence brings with it no comfort !

The diseases of the kidney which are classed under the heading of Bright's disease are three, according to Wm. Roberts : (1) the smooth white kidney ; (2) granular contracting kidney ; and (3)

lardaceous, or waxy kidney. Each form having its own features: the first two being the much most important classes; the third being less frequent.

Before taking them seriatim it may be said that as the kidneys become diseased the urine varies from time to time, even more than in health. Sometimes there is a large flow of pale-coloured urine of low specific gravity; while at other times the bulk is small, the colour dark, and the specific gravity high. Broadly speaking, the denser the urine the deeper its colour, and the stronger its smell. But this variation has its finer features. In granular contracting kidney the urine is pale and copious, as a rule; until the heart begins to fail. Then, too, people with perfectly healthy kidneys do not, as a rule, get up in the middle of the night to pass water; while people whose kidneys are not in their pristine integrity do get up once (at least) before they rise from their bed for the day. Why this should be has never been satisfactorily explained; perhaps never will be. But there is no doubt as to the fact, as the night-watchers of every gouty country squire know when asked in the morning, 'What was the weather like in the night?' They believe he gets up on purpose to take an observation of the weather—to test whether they were out and about, or not. That is, however, not the real reason of his getting up; though when up he takes the opportunity of inspecting the weather. Of course this getting up is more marked in winter than in summer; it is affected by the action of the skin, by the amount of fluids drunk; and to some extent by the amount of alcohol in the said fluids. A pale, dilute urine, too, brings with it a sharper call to empty the bladder than the same bulk of a denser urine.

1. *The Smooth White Kidney.*—This kidney is large, and has a smooth surface, while its capsule is easily torn off; the opposite being the case with the granular kidney in each detail. Here the tubules of the kidney are the seat of disease. The epithelial lining of the tubes is increased in bulk, by which the tubules are dilated, and so the kidney is increased in size. Usually this kidney is enlarged to the end of life; but sometimes it withers towards the end. It is often infiltrated with fat.

2. *The Granular Contracting Kidney,* otherwise the cirrhotic, or gouty kidney. This kidney is small; its surface is rough; its

colour is red; and its capsule is adherent. The change here is a lush growth in the connective tissue, or packing material of the kidney; with subsequent contraction of the new growth (as in cirrhosis of the liver). Here the tubules are denuded of epithelium, and reduced to tubular threads, or are filled with broken-up epithelium. Amidst diseased tubules are to be seen under the microscope healthy tubules. At first there may be some increase in the bulk of the organ, but this is not essential; while as the disease progresses the kidney shrinks, and becomes hard.

With these two different pathological conditions run two totally different series of symptoms. Typical cases of each have features so marked, that the eye can make the diagnosis.

With the large white kidney there is pallor, often accompanied with a certain smoothness of the skin, and a blurring of the outlines of the face (like a bad photograph); till the face of large white kidney is familiar to the initiated. Sometimes the face is puffy; and commonly there is fulness of the eyelids, especially on rising in the morning. These persons are liable to secondary inflammations, and to uræmic accidents, as well as to dropsy. 'The urine is generally scanty. Its specific gravity is either normal, or somewhat raised above the usual average.'—(*William Roberts.*) It is usual to find casts in the urine, *i.e.*, casts of the urinary tubules. The urine, too, is decidedly albuminous. 'Temporary recoveries and relapses are frequent. The disease is of shorter duration than the granular kidney.' Recovery after a decided condition has been established is not impossible.

Such are then the features of Bright's disease, with the large smooth white kidney. With the granular kidney, or interstitial nephritis, where the growth of a fibrous material encroaches upon the normal textures of the organ, a very different history is found. 'The disease may run a latent course for months or years.'—(*William Roberts.*) The eye that carries with it the power to see, can detect, if not the commencement, at least the establishment of granular kidney long before its existence is suspected by the uninitiated. When it is well afoot we find the urine pale and copious, of low specific gravity, and often enough containing no albumen; which, when it is present, is but small in amount. Its presence is fitful; and its absence does not carry with it any

comfort. There is little liability to dropsy, except in the final stages when the heart is failing. This kidney is also called gouty, because it goes with gout. There is much less liability to intercurrent inflammation in the granular kidney than in the white smooth kidney, except bronchitis, which is very common; still there is some liability to such inflammations.

The changes wrought by, or along with the granular kidney are to be found chiefly in the circulatory organs. The presence of nitrogenised waste in the blood in excess produces some contraction of the smaller arteries, impeding the blood-flow through them; the result being a damming of the blood in the greater arteries. This offers an obstruction to the heart emptying itself, and hypertrophy of the left ventricle follows. Consequently we get an enlarged heart, a tight artery, a loud sound in the aortic valves (from their forcible closure)—and a copious flow of urine. These are the *semeia* of the gouty kidney *par excellence*. The arteriole disturbance is seen in the liability to cold feet, or the fingers 'die' at times; while in women about the change of life the 'hot flush' of sudden arteriole dilatation is seen spreading over the neck and face. The contraction of the arterioles leads to thickening of the muscular wall of these vessels, as Prof. George Johnson has pointed out. Sir Wm. Gull and Dr. Sutton have also pointed out a change in, and around the smaller arterioles, viz., a growth of connective tissue, which is well seen in the kidneys (interstitial nephritis); while Dr. Da Costa and Dr. Longstreth of Philadelphia have shown that such lush growth of connective tissue is also found in the ganglia of the organic nervous system.

The over-distension of the arteries leads to a hardening of them, known as atheroma. The accidents which overhang this condition are (1) angina pectoris vaso-motoria, from sharp contraction of the thickened arterioles; or, at other times, palpitation of the enlarged heart. When angina is fatal, which is rarely the case till the heart-wall gets rotten, *i.e.* fattily degenerate, the cardiac chambers are found distended—the heart has failed under the stress of a high arterial blood-pressure, which it is unequal to overcoming. (2) Apoplexy, where the big heart bursts a hardened artery. And (3) aneurysm, where a portion of the arterial system, being weakened by disease, yields. Finally the

heart begins to fail: and then the features of the case alter like a magic lantern's dissolving views—where the coming view begins to show through the existing view, and finally takes its place. Then we commonly find dropsy; and albumen in the urine from the heart-failure.

The two forms of disease have their totally different features, as distinct from each other as an Arab and a Negro. In the granular kidney, sometimes it is a question whether to call the disease 'gout' or Bright's disease. It is set up, according to Geo. Johnson, by the presence of nitrogenized waste in the blood; for he says: '*Renal degeneration is a consequence of the long-continued elimination of products of faulty digestion through the kidneys.*'

If these products are cast out of the blood, the kidneys suffer and become granular; if they are retained in the blood they set up gout; in many cases, something of both is found. According to the stage of the malady, we might speak of 'the liver being at fault,' or 'of renal inadequacy' in the early stages; and later on say 'this is a gouty heart,' or 'the arteries are atheromatous,' or 'the kidneys are diseased,' or 'there is gout,' or finally 'Bright's disease' present; according to the prominent state, or the point from which the complex pathological process is looked at. One medical man might choose one phrase, another prefer another, and all be right; and no real conflict exist, despite the varied speech adopted. Consequently, when we hear that such a person has got 'Bright's disease,' we begin to speculate: 'What is the matter with him?' Interstitial nephritis is set up by the amount of nitrogenized waste in the blood, and pursues a steady resistless march until the kidneys are utterly ruined; sometimes there are distinct exacerbations (when albumen is present in the water), as a new piece of the organ falls a victim to the invading process. 'After each exacerbation it is commonly pretty evident that the disease has taken a step in advance, and assumed a fuller development; and that probably an additional portion of the kidney, hitherto spared, or only slightly affected, has been disabled. But whether it thus proceed *per saltem*, or more continuously, the kidneys are at length so deeply injured, and their depurative functions so far abrogated, that life falls a forfeit.'—(*Wm. Roberts.*)

The immediate cause of death is some of the many outcomes

of this condition of the kidney, rather than directly from the kidney. Uræmia is not the most common fatal outcome; whether it be convulsion and coma, or inflammation of the serous membranes, due to the waste-laden condition of the blood. Sometimes gangrene ensues from arterial degeneration. More commonly an artery ruptures in the brain, giving rise to apoplexy; while this may occur, and be survived as 'a stroke.' Skin affections aggravate the patient's condition, but very rarely threaten life. Chronic bronchitis there is; and sometimes an acute exacerbation of this kills the patient. Commonly there is dropsy: and if the heart be still fairly good, this may disappear for a considerable period, returning after a time, disappearing again; but finally setting in, and declining to move for any and every remedial measure. The once large bulk of urine of low specific gravity gradually gives place to a scanty dense urine, as Sir Wm. Jenner has pointed out, as the heart fails. Still, though the aspect of the case is that of the failing heart, certain features of the renal element in it remain—especially the atheromatous arteries.

To decide positively for, or against kidney disease in this complex widespread pathological process, by the reaction of the urine in a test-tube, is simply childish. Albumen is often absent for considerable periods of time; and its presence probably indicates the implication of another patch of normal kidney in the interstitial overgrowth; with subsequent contraction of the new tissue. The disease is there just as much when there is no albumen in the urine, as when some is present; and the absence of albumen is a matter carrying with it no comfort. A case in point may now be given: 'My colleague, Mr. Teevan, was requested to perform lithotomy on a gentleman from South Africa who had a tumour in his abdomen. He desired me to examine the man prior to operation. I passed over the tumour as unimportant; but strongly advised no operation, stating it to be my opinion that the patient had chronic heart and kidney changes. This opinion was represented to the patient and his friends; but the patient begged to be operated upon. He was cut, and died. His kidneys were shrunken and contracted, till scarcely a sound piece could be found: one weighed one ounce and three-quarters; the other, three and a quarter. The heart weighed fifteen ounces,

and was fatty. Such is the report of the post-mortem, which I did not see. The letter which the patient brought with him from his medical attendant at the Cape stated that repeated examinations of the urine, chemically and by the microscope, gave no traces of albumen or casts; and on this negative evidence the kidneys were assumed to be sound. As the event proved, this opinion was utterly erroneous. The man's general appearance, and the presence of the symptoms detailed in an early portion of this paper, furnished positive and trustworthy evidence as to the actual state of the kidneys.—('The Relations of Gout and Disease of the Heart,' read before the Midland Medical Society at Birmingham, November, 1876.) This is by no means an isolated instance, in which case it might be no more than a lucky guess; but is a typical instance of what may be done by studying all the features of a complex morbid process. Not that the matter of albumen in the urine is either to be overlooked, or the importance of its presence under-estimated. But to make the behaviour of the urine in a test-tube decide the point of the presence, or absence of granular disease of the kidney, is to carry its significance to an absurd length. It is but one symptom of the disease, as Sir Robert Christison insisted.

Lardaceous, or Waxy Kidney.—A less frequent form of Bright's disease than the preceding forms, this morbid change also has its own features. The kidney is sometimes larger, sometimes smaller than normal; while its surface may be either smooth or rough, but its appearance is characteristic. 'The cortex is bloodless, of a white or yellowish colour, with a waxy, smooth, translucent appearance, resembling bacon-rind. The organ is conspicuously tough and hard. On the smooth surface little appearance of the natural secreting structure is seen, but it is dotted over with bright glancing points; these are the changed Malpighian bodies. The cones appear unnaturally red and distinct.'—(*Wm. Roberts.*) The waxy material is dealkalized fibrin, according to another authority on kidney diseases (*Dickenson*). 'The aspect of patients with waxy kidneys is pale and cachectic, and the course of the disease is essentially chronic. Dropsy is present in the majority of the cases; in some it is abundant and general, in others slight and partial. Uræmic symptoms are strikingly infrequent. The diagnosis of waxy kidney rests partly on the

coincidence of a pale and abundant urine, with dropsy; but chiefly on the co-existence or pre-existence of one of the wasting diseases, of which waxy kidneys are known to be a frequent complication, namely, phthisis, caries, long-continued suppuration, and constitutional syphilis.'—(*Wm. Roberts.*)

Consequently we see that when a person is said 'to have Bright's disease,' we are far from having any precise idea of what is meant by a term—applied to three such distinctly different conditions. But when the term is applied to an albuminous condition of the urine—whether this be due to renal disease, or other cause—then the confusion becomes worse confounded.

When a person advanced in years becomes the subject of some inflammatory condition, it is of the greatest moment to ascertain if it be a simple inflammation, or whether it be due to or masks some underlying chronic renal degeneration; and as albumen may be present in simple inflammation, examination of the urine cannot speak decisively. But examination of the patient's general condition may speak in articulate accents; especially if the changes wrought in connection with granular kidney elsewhere be kept in mind.

Thus we see that the term 'Bright's disease' covers a considerable morbid area, and is applied to three several and separate states where albumen is found in the urine; one form, however, being an inconspicuous feature from its presence being comparatively rare, and the amount of it small. If albumen was never found under any other circumstances than in 'Bright's disease,' then its significance would be most grave, and it would be but the question of—with which of these three forms of kidney disease have we to deal, in each case? But, as we shall see shortly, albumen is found in the urine under a variety of circumstances; until it becomes much easier to find it, than to tell what it means when it is found.

Having determined that a case is really one of 'Bright's disease,' the next question which arises is this—'How is it to be treated?' In the first place the skin must be kept warm, and its action (which is supplementary to the kidneys) encouraged by suitable clothing. Next to remember that any check to the action of the skin is liable to produce congestion of the kidneys; and that this in kidneys, no longer sound and often extensively

diseased, is fraught with great danger. It is very important, too, to keep the bowels open, and to avoid any congestion of the great venous plexuses of the abdomen. Having seen to these points, it is well to consider the matter of the food. All along insistence has been laid upon the presence of nitrogenized waste in the blood, which gives rise to the secondary inflammations of the large smooth kidney; and to the dangers linked with a high blood-pressure in the arteries in the granular, or contracted kidney, alike. The best way to avoid this is to limit the amount of the albuminous elements of the food to the needs of the system; when the power of the system to deal with the overplus is seriously impaired. There can be no question about the fact that betwixt the delight of the palate in the first place, and the impression that quantities of meat are necessary and desirable to keep up the strength in the second, most people consume far more albuminoids than they actually require. So long as the liver and kidneys remain normal and capable functionally, this may go for years without any evil result, or mishap; but when the organs can no longer deal with unbounded quantities of waste, a limit becomes very desirable—indeed, imperative. Even in the albuminuria which goes with the large white kidney, a farinaceous dietary with warm baths will often produce great general improvement; while the albumen in the urine is markedly decreased. As to granular, or gouty kidney, its causal relations to a liberal dietary, rich in albuminoids, are notorious. The high vascularity of functional activity in all viscera from the brain to the kidneys is well known; and high vascularity in kidneys undergoing a slow interstitial inflammation is obviously detrimental to them. Consequently we must relieve the kidneys of the labour of casting out nitrogenized waste so far as possible; and this is done most efficiently by cutting down the food which gives most of this deleterious material. And of this food the flesh of the larger animals comes first. Meat is so toothsome that most persons crave after it; but it not only makes nitrogenized waste, but this takes the form of uric acid—a very objectionable form of this waste. It is not the form in which it is served, but the bulk of meat which is important. 'I eat nothing but plain roast and boiled,' says a person who is the probable subject of granular kidney, with a distinct consciousness that he has been

doing his body justice; and not having been taking undue liberties with himself. But unfortunately there is a fallacy in this. Plain roast and boiled undergo the same changes in the body as *entrées* and made-dishes. We are not aware that these last do make more waste than plain roast and boiled. Consequently, while there is a decided objection to the addition of such made-dishes to the plain roast and boiled; there exists none against their being substituted for them. It is the bulk, not the special form of cooking, which is the cardinal matter. It is the irritant nitrogenised waste which works the ruin of the kidney; and this fact must be kept prominently in view in dealing with all diseases of the renal organs.

Malignant Diseases of the Genito-Urinary Organs.—Cancer may develop in the kidneys, or the bladder primarily, or involve these organs when commencing elsewhere; but neither are very common maladies. In women, however, the uterus is certainly liable to become the seat of cancer. From the recorded facts it would seem that there is some connection betwixt such cancer and great functional activity in the genitalia; though virgins, and widows who have entered upon the sexless age after the menopause do suffer from the disease. Its tendency is greatest as the end of the reproductive period is reached, while it wanes as the end of life is reached. There seems no question that great sexual indulgence, especially when the male is specially endowed, has an influence over the production of cancer; though it cannot for a moment be insinuated that this is the cause of cancer of the womb *par excellence*. The treatment consists of opium, given as directed at p. 144.

If women are liable to suffer from cancer of the uterus, a malady from which the male is exempt, they in turn are free from a prostate gland—a great source of suffering to aged males. Also woman is practically free from strictures of the urethra, a disease inflicting great misery on many men as advanced life is reached. In both these masculine maladies there is difficulty in passing water, the act being long in consequence of the obstruction to flow of urine. Commonly, too, the act of micturition is painful. The diagnosis betwixt the two maladies has been given before at p. 166. In prostatic enlargement there is often, too, an additional trouble, viz., the call to empty the bladder

is frequent and sharp. In both maladies any load in the bowel, any cause of venous congestion, or the vascular excitement of a bout of drinking, will aggravate the trouble. Here the saline laxatives are indicated ; but at times a pill containing a laxative and a carminative in combination with hyoscyamus, or belladonna at bedtime is useful. If the condition be aggravated by an acid state of the urine, potash and lithia are of service.

CHAPTER XXIV.

ALBUMINURIA.

THOUGH albuminuria is scarcely a disease of sedentary life, and is found equally in all ages of life, what was said on the subject of albumen in the urine in the consideration of 'Bright's disease,' makes some further discussion of albuminuria unavoidable. We saw in an earlier chapter (VIII.) that digestion is a process of solution, and that in the digestive act the proteid elements of our food are converted into peptones; in which soluble form they readily pass from the alimentary canal into the blood of the portal vein, by a process of diffusion. Here they are turned back into insoluble proteids; otherwise they would escape out of the blood by the kidneys as easily as they found their way into it. If there be any hitch in the metabolism of albuminoids, and all the peptones are not turned into proteids, the remaining peptones will escape by the kidneys—and then albuminuria will be present. Surely, in the name of common sense, this does not constitute the grave malady 'Bright's disease,' in any of its three forms? It is quite true that when the kidneys are diseased albumen may be, and commonly is, present in the urine; and that albuminuria is one of the symptoms of 'Bright's disease;' but surely it is not requisite to assume 'Bright's disease' because the urine is albuminous?

There are other circumstances under which albumen is present in the urine. If eggs be freely indulged in, albumen will appear in the urine. It is found, too, in some pyrexial states; and albuminuria in a febrile condition in a person advanced in years, might mean old-standing renal mischief, or it might not. Yet it would be a matter one would very much like to be able to determine! 'Within the last few years the occurrence of temporary

albuminuria has been shown to be much more frequent than was previously suspected. In some statistics of life-insurance drawn up in New York, one out of every eleven healthy persons who applied for life-assurance was found to present traces of albumen in the urine. Some experiments made by Leube (Salkowski und Leube, *Lehre vom Harn*, p. 369) on 119 soldiers, showed that in 4 per cent. the morning urine contained albumen, and albuminuria occurred in no less than 16 per cent. after a severe march. The proportion found by the American insurance office is intermediate between the two values found by Leube. It is, I think, considerably higher than what one is accustomed to find in examination of persons proposing for life-assurance in London, but nearly corresponds to the proportion of cases of temporary albuminuria (12 per cent.) found by Parkes ('On Urine,' p. 187) in hospital patients. The prognostic importance of albuminuria is very great, not only in regard to the question of life-assurance, but in regard also to the dietetic and hygienic treatment of the individual. If we were to assume that because albumen is present in the urine the individual is suffering from serious disease, we should fall into as grave an error as if we were to suppose that every patient whose urine contained sugar was necessarily suffering from diabetes.—(Dr. Lauder Brunton, *F.R.S.*, 'Lettsomnian Lectures,' 1885, on 'Disorders of the Digestion: their Consequences and Treatment.')

He quotes from Dr. Warburton Begbie: 'It is surely a satisfactory consideration that a condition of excessive albuminuria—the urine becoming solid on the application of heat and nitric acid—may, after all, not indicate the existence of any structural change in the kidney.'

As there exists so widespread an opinion that albuminuria is the indication of renal disease, some more modern authorities may be quoted. Dr. Austin Flint, whose diagnostic acumen no one will call in question, writes: 'The presence of albumen in the urine is by no means always evidence of renal disease. If the urine contain pus or blood, it is albuminous; the quantity of albumen being small. A highly albuminous diet may have this effect. Diseases which occasion congestion of the systemic venous system give rise to albuminuria. It occurs in cases of dilatation or even distension of the right side of the heart—the former from mitral obstruction or regurgitant lesions, and pulmonary

emphysema; the latter from pneumonia or a large accumulation of liquid in a pleural cavity—and in a certain proportion of cases of all the essential fevers. It is a not infrequent effect of the pressure of the uterus on the inferior vena cava and renal veins in pregnancy. It is observed in some cases of purpura, scorbutus, and lead-poisoning. It is of transient occurrence sometimes when the causation is not apparent; and under those circumstances may give rise to apprehensions which prove to have been gratuitous. The author has recently met with a case of this kind. If, however, it be persistent; if it be associated with other symptoms pointing to an affection of the kidneys, and causes irrespective of the latter be not apparent, it is proof of renal disease.' See how careful the old physician is as to when, and under what circumstances only, can albuminuria be regarded as 'proof of renal disease'! Does this tally with the hasty decision of the man who finds albumen in the urine, and then at once pronounces 'Bright's disease'? Dr. Wm. Roberts says, 'When albumen is found in the urine, the important point to decide is whether it indicates the existence of organic disease of the kidneys or not. This question, in any individual case, must be considered chiefly in connection with the three following points jointly, namely:

- '1. The temporary or persistent duration of the albuminuria.
- '2. The quantity of albumen; and the occurrence and character of a deposit of renal derivatives.
- '3. The presence or absence of any disease outside the kidneys which will account for the albuminuria.'

We see from this that there are many points to be considered before 'Bright's disease' has to be assumed. All authorities agree that the presence of urinary tube-casts is the great matter in the diagnosis. If casts of the renal tubules (of whatever kind) be present, then the assumption becomes very strong that the albumen means kidney disease. A microscopical examination of the urine alone can warrant the albuminuria being pronounced renal, in the absence of other evidences of 'kidney disease.' Yet is such microscopical examination of the urine, accompanied by the finding of tube-casts, made by all men who rap out 'kidney disease' when they discover albuminuria? Even when such result is found, it does not always happen that the dreaded result

takes place as expected. No man ever made more careful examination of the urine than the late W. R. Basham, especially as regards tube-casts, and their significance. He contrasts cases of curable and remediable cases with incurable cases of morbus Brightii; and says of one case recorded at length, 'The case clearly exhibits morbus Brightii as curable under favourable circumstances.' He then records Case XXI, a painter of forty-six, who came under his care suffering from general anasarca with albuminuria. There were also tube-casts in the urine. He came into hospital on December 12th, and grew worse at first under treatment; yet 'on the 15th of January all trace of dropsy had disappeared, and the urine was only hazy by heat. On the 3rd of February he was pronounced convalescent. Dr. Basham goes on: 'Nevertheless, with all these promising conditions we could not shut our eyes to what the microscope reveals. Although the urine contained but little albumen, and the sediment amounted to scarcely more to the unaided eye than the mucous cloud seen in all healthy urines, yet the cloud contained large casts, with here and there an epithelial cell, but those epithelial cells were not unhealthy in appearance; there was no appearance of a breaking down, or rapid disintegration of these, yet experience tells us that under the least unfavourable circumstances the process would rapidly arise, and the patient become plunged into the fatal disorganization of granular and fatty degeneration.' He concludes the chapter—'By reference to the sequel of Case XXI, it will be seen that a complete recovery was effected, as six years afterwards he was free from every trace of the disorder.'

By massing these quotations together the writer has no intention of putting forward the hypothesis that albuminuria is devoid of prognostic significance, even when backed up by the appearance of tube-casts: that would be too absurd for any man out of Bedlam; but what he wishes to demonstrate is—that to say that Bright's disease exists because some albumen is present in the urine, is often to say what is simply untrue. Careful consideration of other points ought to be made before such a diagnosis is hazarded, which usually carries with it so grave a prognosis. Not only that, but the examination of the urine should be repeated at intervals before hazarding a positive opinion, which

will so gravely affect the patient. The amount of misery caused, which may fairly be termed avoidable, by rash opinions as to the presence of Bright's disease, has been such as to make every medical man, possessed of any right feeling and consideration for others, sorrow that such opinions have been given. It neither tends to the good fame of the individual, nor the profession to which he belongs, to hear of such opinions being pronounced—which the progress of time disproves.

Albuminuria, then, is not synonymous, or interchangeable with Bright's disease; though it may be a *semeion* thereof.

Cases certainly present themselves from time to time where opinions might honestly differ. And one such will be given shortly. Even when the albuminuria is persistent for years, in some cases there is no impairment of the health. Some time ago Sir Joseph Fayrer, F.R.S., gave the following relation. The day before, a man bearing no evidence of disease asked him professionally if he thought it safe for him to go to India, as he had Bright's disease. 'How do you know?' Sir Joseph asked. 'Because I have albumen in my water,' was the reply. A specimen was examined, and sure enough albuminous it was. 'How long have you passed albuminous urine?' was the next inquiry, naturally. 'Twelve years, to my knowledge,' was the reply. 'It has never been free from albumen when examined.' Now, as Sir Joseph remarked to me, 'What can be said of such a case: has he Bright's disease, or has he not?' Fortunately it was no part of my business to provide an answer to the question.

A case came under my own notice lately, in the form of a young Cambridge undergraduate, on which opinions might honestly differ. He was a tall youth of pallid complexion, complaining of languor and disinclination to exert himself. An examination of the urine showed a considerable amount, if not a great amount, of albumen in the urine. Was it a case of Bright's disease—which it looked like—or was it a case of simple albuminuria, the body being ill-fed in consequence of the albumen escaping out of the blood by the kidneys? Either hypothesis could be maintained. He wished to go on a yachting tour. As this probably involved numerous wettings (just about the worst thing possible if there were really disease in the kidneys) a natural hesitation arose about whether this was safe, or not. If

the opinion formed was too favourable, and the youth died, it would be scarcely justifiable homicide; at least his friends would have every reason for bitter complaint of carelessness on my part. I asked for time to think the matter over; sometimes it seemed as if there was no escape from the conclusion of Bright's disease; at other times it seemed impossible to accept that view of the case. After weighing the pros and cons my opinion gravitated towards 'mal-nutrition from peptonuria.' The youth went on his voyage, which was calculated to improve his general health; and of which an adverse opinion would have deprived him. In his absence much inward speculation went on during my autumn holiday, as to what the result would be. Fortunately he returned in excellent health, with no albumen in his urine; and this satisfactory condition has been maintained. Now, in this case, it was impossible not to entertain two opinions—that is, from any man capable of seeing two sides to a question—and to halt betwixt them. Had the decision been in favour of Bright's disease the voyage would have been lost, and the youth's mind greatly depressed; yet possibly with a medical man of an apprehensive cast of mind, the decision would have taken that direction. In such a case the question may be raised, 'Does the decision rest really on the knowledge, or on the temperament of the medical man?' Many would uphold the latter!

Where there is the face of large white kidney the matter of diagnosis is easy; if that of the prognosis is not so simple. Where there is a history of past wasting disease, the diagnosis is not one of great difficulty, and the prognosis is simpler. If there be the evidences of granular kidney elsewhere, and any albumen be found, then there is need for great care. (The tube-casts found in the urine would be of great value in each case.) Then it is by no means easy to appraise the significance of albuminuria in granular kidney: it may mean the implication of a new patch of sound, or fairly sound, kidney. In gouty persons Virchow thinks there may be gout at the kidney, giving rise to temporary albuminuria. If there be traces of sugar at times as well, the significance may be slight. But at other times albumen begins to appear in the urine when an old-standing case of granular kidney is commencing to break up; and then is of the gravest significance. So that to read aright the significance of the albuminuria other

features of the case must be noted and weighed ; which is just the reversal of the ordinary practice of testing the urine and settling the question—against which this whole chapter is a solemn protest ! We know that in the middle stages of granular kidney there are a large left ventricle, a tight artery, and a large flow of pale urine of low specific gravity ; and consequently can comprehend what Wm. Roberts says, when he writes : ‘ A urine may be only slightly albuminous, but if it be of low density (under 1012), and the daily quantity between three and four pints, the total loss of albumen will be very considerable, and the existence of renal disease strongly indicated. Indeed, of all urines, there are none more surely indicative of Bright’s disease than a pale, dilute abundant urine which is at the same time more or less albuminous.’ Certainly this is true, and the diagnosis is almost beyond doubt ; but this urine will not (alone) tell us how ill the patient is, or how far life is gravely threatened. We are only one step nearer what we want to know.

Roberts speaks of a ‘neurotic albuminuria,’ as occurring in cases of disturbed innervation which passes away. Yet Clifford Allbutt has been led to think that mental worry is a cause of Bright’s disease. When does the neurosis pass into disease of the kidney ? When does the condition of Bright’s disease become established ? With the destruction of the initial patch of kidney ? of which there is neither sign, nor record ! Possibly. But then a certain amount of mischief must be done and injury inflicted before any influence is exercised upon the economy ; or in other words before the malady comes within the sphere of our vision, and we can recognise it in any of its outcomes.

There are certain circumstances where we do know something of the significance of albumen in the urine. In the first place when the heart is failing, and venous congestion is setting in, the appearance of albumen in the urine is of sinister significance : just as its disappearance under appropriate treatment is an encouraging indication, and occurs with a general improvement in the patient’s condition. Its appearance in a case of cardiac dropsy may tell of sudden further venous congestion by lung-complication. In the same way it may point to the effect of disease of the respiratory organs upon the pulmonary circulation, and the block therein ; and so be of the highest prognostic significance.

Then, again, it may mean no more than some disturbance in the assimilation and metabolism of the albuminoid elements of our food ; and pass away when the liver is restored to efficient working order. In such case the patient is ill-nourished, and presents a combination of pallor and lethargy which makes the diagnosis one of great difficulty ; the semblance to true Bright's disease being very close. Possibly in some cases a show of albumen in the urine goes with a high arterial tension, with a waste-laden blood, in other cases than post-scarlatinal nephritis ; and a mercurial pill at bedtime, and a dose of sulphate of soda next morning, act like a charm, otherwise than, and as well as in the disappearance of the albumen from the urine.

When a medical man, or any other person, attempts to appraise the significance of albumen in any urine in a test-tube, he must do it as Opie mixed his colours, 'With brains, sir !' It is not only the amount, but the associated conditions under which the albumen appears, that have to be taken into the calculation ; and for this, not only is knowledge requisite, but judgment is essential for a correct estimate. A large number of practitioners are no more capable of doing this than were Belshazzar's Chaldeans, astrologers and soothsayers, of reading the writing on the wall of his banqueting-hall.

In order to help the man who is willing to essay such careful appraisal, it will be well for him to know how to determine betwixt the albuminuria of escaping peptones, and the albuminuria of renal conditions, to commence with. But this will not free him from the necessity of looking at all the features of the case as well, and weighing all together. According to Dr. Lauder Brunton, who is one of our greatest authorities upon this matter, in *true* albuminuria the urine begins to cloud before the boiling-point is reached ; while in *false* albuminuria the boiling-point is reached before any clouding is seen. This is no more than a rough test ; and an elaborate process quite beyond the reach of the ordinary practitioner is necessary to clear the matter up. If the patient desire a complete answer, the urine must be sent to some one competent to execute the elaborate process—which, it may be said, is beyond the ordinary pharmaceutical chemist just as much, or more, than the ordinary medical practitioner. As to the two forms of albuminuria, Dr. Brunton insists in Quain's

Dictionary of Medicine: 'In order to distinguish more clearly between the different kinds of albuminuria, we may divide them into, 1st. *True* albuminuria, in which serum-albumen appears in the urine; 2nd, *False* albuminuria, in which some other albuminous body, but not serum-albumen, is present.'

The discrimination of albuminuria of significance, from that which is of comparative insignificance is difficult certainly in many cases; but very rarely is it of insuperable difficulty, provided sufficient care and attention be given to the subject.

As an instance of the loose manner in which the term Bright's disease is now used, when a condition of albuminuria merely is present, the following anecdote is illustrative. Talking one day with one of the first of our rising physicians, he said casually: 'Did you hear of the remarkable cure of Bright's disease that is being talked of?' My answer was in the negative. Asking what it was, he explained: 'A gentleman had an accident and was taken to a hospital, where part of his treatment was a low diet. His urine had previously been persistently albuminous, but in the hospital it became normal.' On stating that that was a fact which lay within my own experience, he further explained: 'He was a heavy meat-eater, and so had albuminuria; on the hospital dietary he lost his albuminuria.' Then, with a twinkle in his eye, he added: 'It was a good instance of the cure of Bright's disease!'

CHAPTER XXV.

GOUT.

'THERE are three things which I know not—yea, there are four things of which I have no knowledge: the way of a bird through the air, the way of a serpent over a rock, the way of a ship through the sea, and the way of a man with a maid,' said the preacher of old. Had he paid any attention to medicine, he might have added that the hidden processes of gout also had not been revealed to him; for we know it only by its results, which are patent to us.

Gout was due to 'ill-concocted juices,' or 'crudities,' the older physicians thought; then about the beginning of the century the advances of chemistry brought us up to a suspicion that gout took its origin in uric acid—a suspicion confirmed by subsequent observations. So that we not only can identify the offender, and write his chemical formula ($C_5H_4N_4O_3$); but trace his descent from the albuminous elements of our food.

Animals with a solid urine, as reptiles and birds (otherwise widely different), pass their nitrogenised waste as uric acid, in the form of urates. Animals with a fluid urine pass their azotised waste as the soluble urea. With some animals the urine is almost habitually turbid, as in the horse, or, rather, some horses. So long as the liver of man can convert the whole (or practical whole) of the nitrogenised waste of the body into soluble urea, so long all is well. But when the liver begins to form an excess of uric, or lithic acid, then that man is 'gouty' in the widest sense of the word. Wherever the blood runs the uric acid in solution permeates with it. Podagra or cheiragra, or gouty trouble in the extremities, are but one form of gout; the one, however, which was first observed, and by far the longest known to us; and to

which the term gout was restricted in the infancy of our knowledge of the subject. Clinical observation long preceded any scientific acquaintance with gout. Gout was known for centuries in the long darkness which preceded the dawn of chemical knowledge. Yet the ancients were no fools, and reasoned very correctly on the data at their disposal; and Galen knew (though how he came to the conclusion is not apparent) that the urine was formed in the liver, and separated by the kidneys. Our scientific acquaintance with the poison of gout has led to a wide extension of that term; for now we apply the term to any morbid condition, when we know that the blood is laden with uric, or lithic acid—the condition known commonly as lithiasis, and to which the late Dr. Murchison applied the term ‘lithæmia.’ The condition is ‘gout,’ whether it be a joint-trouble, a skin-disease, a condition of the heart, or of the kidneys—or even a mood. Perhaps nowhere is gout more inclined to leave its impress physically, than upon the nails; and psychically, upon the temper. A fit of gout is a fit of irascibility, and, as Sydenham found, of low spirits and depression. The famous Chatham was melancholic for two years with the gout; and recovered after an attack of gout in the extremities. Some uric acid circulating in the blood has been the initial cause of world-wide changes, it has been speculated. Next morning, after a good dinner, a gouty man is anxious about his property, his tenants are falling behind with their rents; his wife’s health causes him the greatest uneasiness; whilst his eldest son’s conduct is driving him to despair. After a blue-pill at night and a seidlitz-powder next morning, the outlook is rosier. He has one of the finest estates in the county, with first-class tenants upon it; his wife is hale and in good health; while his eldest son is a young man of excellent promise—whose crop of wild oats is not going to be at all a lush one. And this altered state of mind is all brought about by getting rid of the excess of uric acid which so profoundly affected the mind, acting like a mental poison. *Mens sana in corpore sano!* If cholæmia produces depression as its leading toxic action; certainly lithæmia finds its expression in a fierce temper. Some of the ruthless deeds of William the Conqueror in his latter days suggest gout-poison disturbing his brain. An irate savage mood would uric acid beget in a man of his tempera-

ment. So, no doubt, did his gout exercise an unfortunate and malign effect upon 'bluff King Hal' in his later days. Elsewhere I have written ('Gout in its Protean Aspects'), 'It is no more possible to have the brain working smoothly when the blood circulating through it is laden with gout-poison, than a man can have an elastic tread with a gouty foot.' The brain, as 'the organ of mind,' is influenced by systemic conditions like any other viscus.

It is necessary, then, for the reader to emancipate himself from the thralldom of preconceived opinion that gout is merely a disease of the joints, if he wish to comprehend the subject in the latest, and widest sense of the term 'gout.' Gout is the expression with which the world within, and without the profession is most familiar; and with which it has associated ideas, as a condition underlying, and causally related to a variety of maladies. 'Gouty kidneys' is a term with which all have been familiar for some time; and 'gouty skin-diseases' have been recognised long enough to make their distinction no matter of surprise. The expression 'gouty heart' is meeting with general acceptance; 'gouty teeth' have established a foothold; while 'gouty nails' can give its *raison d'être*.* 'Gouty' is now applied to the different diseases with which a condition of blood laden with uric acid is causally related. So we find 'gouty valvular disease of the heart;' and also 'gouty neurosis of the heart,' *i.e.*, functional disturbance without any organic change—expressions coming into use. Of course these expressions have an unfamiliar sound about them as yet; but the strangeness will wear off before long. It may be said, too, that there is a tendency to call any malady not very clear, 'suppressed gout;' a great refuge in times of diagnostic difficulty. Sir Charles Scudamore, who knew the varied features of gout as well, perhaps better than anyone before or since his time, entered his protest against such misapplication of the term. And seeing that the great matter *par excellence* about gout (like syphilis) is the direction it gives to the treatment, it is most important that the term be applied only to appropriate cases. It is a term used to cover a good deal of carelessness, it is to be feared,

* Some time ago a medical friend was complaining of gout, and was put upon anti-gout treatment. His nails had become 'reedy,' but after this the new nail was smooth. Just as the nail was half and half, at my request, he had it photographed. The change was marked.

at times. If Granting this, all persons who have paid honest attention to the subject know that there are conditions of malaise, mental as well as bodily, to which the terms 'liverish' and 'suppressed gout' can truthfully be applied, when it is impossible to find other and more fitting designation. It is just as important to avoid applying the term 'suppressed' or 'latent gout' to cases where they are inappropriate; as it is to recognise this hidden element in cases where uric acid underlies the outward visible malady. An illustrative case of the advantages which may be derived from detecting gout may now be given. Dr. Archibald, of Brixton, recently asked me to see a case of cold abscesses in an elderly female, which for seven months had confined her to bed; and resisted every line of attack, every combination of remedial measures he could think of. On looking at her, the impression was borne in upon me that the patient was gouty. She never had had gout; but two small tophi were to be found on one middle finger. The idea that she was 'gouty' had struck one other medical man who had seen her. The fact that gouty trouble of the joints so very rarely sets up suppuration did not deter me from entertaining the belief that gout was the underlying condition, which made the local troubles so obstinate, and intractable to everything which had so far been tried. So potash and colchicum with small doses of opium were tried, with almost magical results. The troubles at once began to manifest a healing action, and the case steadily and rapidly improved, till the east winds threw her back for a time. When their nature was detected, and the specific treatment adopted, they yielded as did the doors to 'Sesame,' and Sesame only in the tale in the 'Arabian Nights.'

Gout in its articular form is a painful, often a very painful, affection, with some thickening of the articular cartilages. There may be no pain except when an acute attack is on; but then it is very severe. A man goes to bed all right, but is awakened about two o'clock with a sharp pain in the ball of his great-toe, which persists. Next day the joint is hot and inflamed, the skin over it being red and shiuing. He either has his suspicions, or not; but, whether, or not, gout has 'left his card' on him. Probably before long another such visit is paid. Usually soon they are 'on visiting terms.'

From the first, according to Garrod, one or more crystals of uric acid, or rather urate of soda, are left in the cartilages of the joint. Each subsequent attack leaves more urate of soda behind it; till at last considerable deformity may be the result. The hands, too, suffer; the fingers more than the thumbs. There may be fulness over the knuckles, or small tophi on the sides of the fingers; but the deposit is not in the bone (as we saw in rheumatic gout, or 'Arthritis Deformans,' p. 130), but in the articular cartilages. The deposits in the feet and hands may become considerable; so as to limit locomotion in the one case, and lessen the utility of the hands in the other. Then strain on the different joints is found to tell, as in the gouty hands of the coachman; and the gouty toes of the butler, who puts strain on his toes when placing a dish on the table, or removing it. Sometimes the gouty concretion works through the skin, and a man may 'chalk' his games literally by a gouty 'chalk-stone.'

This is the old well-recognised articular gout; about which no one has any doubt, cavil, or question. It may occur in rich or poor; but it depends upon an excess of urates in the blood, no matter how brought about. That gout is a disease set up by good living, in the main, is as true as is the fact that in some cases it shows itself where such indulgence is out of the question, and it is due to some morbid action of the liver. The cause of gout *par excellence* is more than a sufficiency of albuminoids, chiefly in the form of animal food; by which the liver in time begins to form urates in excess of the power of the kidneys to excrete them. How this condition is brought about is a matter subservient to the fact that the condition is present; although a not unimportant matter in each case. Certain it is that the descendants of gouty persons are liable to gout, which Cullen called 'Morbus Hereditarius;' and that the greatest abstemiousness will not always preserve persons so descended from their family foe. On the other hand, the plebeian-bred self-made man may often indulge in the pleasures of the table till the end of his days, and die an old man without any gout; but he sows the seeds of it for his descendants. Gout goes with inherited acres: there is no doubt about that. 'The fathers have eaten sour grapes, and the children's teeth are set on edge.' No matter how it came, the first thing to be done is to feel certain about its

presence. Where the malady is in the hands and feet, it generally speaks for itself in an unmistakable manner.

The nails are apt to become affected, and become 'reedy' or 'striated,' *i.e.*, the individual hairs of which the nail is built up begin to be visible. As time goes on the nails grow brittle, and it becomes impossible to keep them well trimmed.

So is the skin, too; gouty eczema is the plague of many old people. Other affections, as psoriasis and herpes, are linked with gouty states. Sometimes the eruption consists of large vesicles, sometimes of a dry eruption almost, yet gout is at the bottom of that eruption. Some time ago a case of herpes iris along the nerve-trunks came under my notice. When any disturbance of the liver was on foot, out came one of those circular patches. The gouty skin-affections are often accompanied by sharp stinging pain, or at other times by intense itching. Pruritus ani, and in women pruritus vulvæ, attach themselves to gouty persons. Prurigo senilis is linked with the presence of gout-poison in the blood; as are the 'spots of pain' about the shoulder-blades, which 'can be covered by the thumb-end,' as the patients say; and which are referred to 'the liver' by one medical man, and to 'the kidneys' by another. Or otolites form on the pinna of the ear, and these often throw a flood of light upon a doubtful malady.

The teeth are usually solid in gouty persons, and are often worn down. Gouty people lose their teeth not so much from caries, or decay, as by a slow inflammation of the roots, by which, in time, the tooth works out.

The hair is apt to turn grey early, and this is especially the case with persons of high complexion; the high-bred colour of family portraits. The high-complexioned dame of early grey hair is a typical instance of the gouty taint of blue blood.* The typically gouty are persons of well-developed osseous system; they are well-fed, robust persons, fond of outdoor exercises. They have, as a rule, good appetites, and enjoy their food. They are strongly developed people, with passions accordingly. Their temper is originally good, as a rule, but as gout develops they become hasty. They form a distinct race, and are to be found in any quantity among the well-to-do people, especially county

* The painter's brush often puts on canvas the most unmistakable evidence of gout—marked enough to catch the trained eye at once.

families. If anyone will take the trouble to visit Madame Tussaud's and compare the Guelphs and the conspicuous personages of the last century there made famous, with the living crowd gazing at them, he will have no difficulty in contrasting the typically gouty dead with the slighter forms of the present time tending to the neurosal diathesis. The past are about half as much more in weight compared with their punier descendants. As to the last, it is rare to find a typically gouty man among them, unless a country gentleman happens to be present.

These are not, however, the only individuals who have gout. There are gouty persons who are thin in the flank, who are small eaters, to whom all malt-liquors are so much poison, with well-vaulted skulls. Not only do these contrast with the sturdy frame, the broad, rather low heads, the square figure, especially about the hips, of the typically gouty in appearance; but they take their gout in other and different ways.

The broad gouty persons suffer rather from articular gout, gouty disease of the heart, and eczema : who are usually free from dyspepsia, and nervous disorder of the heart ; but who are certainly liable to bronchitis.

The gouty man of thin flank is not so liable to articular gout, heart-disease, or bronchitis ; but is liable to nervous disturbances, skin-troubles, and dyspepsia. Just as the external appearance, or physique differs, so does the form of their gout: and also the treatment of each.

In both there is usually considerable mental activity. With the weighty gouty men there is a fondness for field-sports ; and ladies of this type usually take much outdoor exercise. The slighter gouty man is a good student, a keen worker ; and the ladies of this type are industrious, and to be found in the van of all earnest social movements. (Laziness is not linked with gout ; though gout may, and often does, cripple movement.) Such persons often are bilious in early life, and gouty later on. In the slighter-built men, it is common to find them complaining of disturbed action of the heart, where no disease can be detected. In the massive gouty, it is rare to hear a word about the heart until structural changes in the valves of the heart are well established.*

* The massive, solid, gouty folk might be fitly spoken of as of 'the 'Norse-man type ;' while the other slighter folk of highly developed nervous system,

All gouty persons are liable to cramp; while flashes of pain and hyperæsthesia are not uncommon, especially in the slighter-built men. The hands, too, are liable to 'die'; and in women about the menopause, and later, there is a tendency to 'hot flushes.'

The internal changes which go on are most markedly seen in the vascular system, especially in the gouty of 'the Norseman type.' Something has already been said upon this matter in relation to the granular kidney; but it may be well to put the matter in its entirety here. (1) Gouty matters in the blood set up a contraction in the arterioles; the blood-flow through them is checked; (2) this leads to a damming of the blood in the larger arteries; and this again to (3) a hardening of the arterial coats (atheroma); and (4) a hypertrophied condition of the left ventricle of the heart, to meet the increased resistance in the arterial system on systole. Such a condition is slowly developed, and carries with it a loud aortic second sound from the violent closing of the aortic valves; and a large bulk of urine. This is the first stage of 'the gouty heart.'

Such a person is often a man, less commonly a woman, of great energy, full of enterprise, sanguine, and energetic. As a gouty man, he is comparatively exempt from maladies which are not gouty; but he has a tendency to skin-affections, to attacks of gout in his extremities, to bronchitis, and to attacks of angina pectoris from acute spasm of the arterioles; which do not carry with them the same prognosis attaching to them as when the heart becomes decayed, or degenerate. A risk of apoplexy and aneurysm overhangs this stage, waxing as the condition merges into the later stage.

Such a condition is gradually developed, and may exist for years before any distinctly downhill stage sets in. But sooner, or later the latter comes. When a person at this stage presents himself before a medical man with any malady, are there any means of diagnosing gout in the absence of the unquestioned articular changes? I venture to think there are. The build, the well-developed osseous system, the complexion, the hair, the teeth, the nails, the condition of heart and arteries, the character of the urine, form a *tout ensemble* which the eye learns to recog-

but lighter in the bone, might be classed as of the 'Arab type;' of course there are hybrids or blends.

nise, and if to this be added fits of irritability, at times amounting to explosiveness (which, if the patient does not admit, will be allowed by those who live with him), there exists (to my mind) no moral doubt about gout being to be scented, and suspected.

The latter changes are : (1) Further hardening of the arteries, which become tortuous and elongated, as is often well seen in the temporal artery meandering over the temples ; a change which affects the vessels which supply the heart, and interferes with its nutrition. Consequently we get (2) failing of the power of the heart, which brings about (3) a diminution of the bulk of urine. As the coronary arteries thicken by an endarterial cell-growth, their bore, calibre, or lumen is diminished, and with that the blood-current to the heart itself. With this insufficient nutrition the energy wanes, and a certain amount of dilatation takes place—a mixed condition known as ‘failing hypertrophy.’ Attacks of palpitation now show themselves, and shortness of breath on effort is experienced. There may, or may not be (4) some chronic disease of the valves of the heart ; often in the aortic valves, less frequently in the mitral valves. The first almost always as stenosis ; the latter commonly stenosis. With, or without valvular complication the heart declines in energy, and with this the bulk of urine drops. From a large flow of pale urine, there is now seen a smaller flow of high-coloured urine ; often charged with brick-dust, or pink lithates. Then (5) dropsy sets in, and with it often albuminuria from venous fulness. Indeed we get grafted upon the gouty condition, the sequelæ of heart-failure. But these latter do not obliterate the evidences of the earlier condition ; these still show through the obvious symptoms of the failing heart. For in pure cardiac dropsy the œdema first shows itself about the ankles, and creeps upwards ; while the failing heart, with old-standing gout giving renal complications, is accompanied by a dropsy which does not adhere to these lines, the œdema showing itself elsewhere than in the lower extremities. The artery, too, is still hard, and gives the impression of power in the pulse—which is at times misleading.

During this time there are commonly some attacks of nocturnal dyspnoea, waking the patient out of his sleep by the urgency of the demand for breath. Such difficulty of breathing may be

merely air-hunger, the blood being overladen with carbonic acid gas; in which case a number of deep respirations cleanses the blood. Or it may be cardiac dyspnoea with distension of the right ventricle; a graver affair altogether, and lasting a longer time.

Such, then, is a sketch—a mere outline—of the gouty man of 'the Norseman type,' as he travels on his way through the various stages. Of course, he may be cut off prematurely by apoplexy, or other intercurrent malady. It is enough, however, to demonstrate that a gouty man may usually be recognised, and the gouty element discerned—on the principle *ex pede Herculem, ex ungue leonem*—amidst a maze of symptoms, or a mask of some acute character, as bronchitis. Having made the diagnosis, the treatment follows.

During this time there may have been, from time to time, small quantities of sugar and albumen in the urine; but only more or less fitfully, until the time comes when the heart fails, and then albumen sets in—to remain, appearing in greater quantity as the failure deepens.

Then comes the gouty man of 'the Arab type.' He has a totally different history, in his earlier stages at least. He will probably complain of indigestion as his main trouble. Scudamore knew him well. He has heartburn, acid eructations, is troubled with hawking, and uneasiness in the pharynx; he has acidity, and flatulence after a meal, and usually cannot eat vegetables. The abdominal muscles are tight, the tongue is furred, and the mouth clammy. Such are gouty persons in whom dyspepsia preponderates; and is usually accompanied by skin-trouble in the past, or the present. Scudamore, in speaking of these gouty Arabs, calls them 'dyspeptic persons in whom the nervous system preponderates.' They will tell, too, of neuroses, as neuralgia or angina. Such a case comes under my notice frequently; and it usually turns out that other medical men have also spoken of gout, despite the absence of all articular symptoms.

Then, again, there is gout rather as a disease of suboxidation, in pallid men who live in ill-ventilated rooms, and yet who retain their palate and enjoy their food. They will manifest more or less of the symptoms belonging to 'the Norseman type' or 'the Arab type,' as they lean to either type themselves. Here an increase in the amount of oxygen taken in daily is essential to

any and every line of treatment, and these persons always do well at a health-resort.

The Treatment of Gout.—From what has been said hitherto, it will be clear that, whatever the form assumed by lithiasis, its origin must never be forgotten. It commences in an excessive production of urates by the liver, or an impaired power of the kidney to excrete them; or both. Obviously, as the kidneys become more and more injured, it is necessary to limit the nitrogenised elements of the food. That must be the first matter.

It is the more necessary to insist upon this, as there is a fallacy—the result of imperfect knowledge—abroad; and not only that, but its roots have struck deep. The poison of gout is an acid. True! Sugar produces acidity. True again! Sugar, therefore, must be avoided in gout. There the reasoning fails. The acid of gout (uric, or lithic acid) is not derived from the saccharine elements of our food. It has a totally different origin; it is a form of the retrograde metamorphosis of albuminoids. Two and two do not always make four; they may make twenty-two! So here the association of acidity with sugar is at fault! Uric acid is a less oxidised form of waste than urea; and if large quantities of carbo-hydrates be taken, the less oxidisable albuminoids will accumulate in the system. That is one matter. Then there are the gouty beings of 'the Arab type,' in whom dyspepsia and acidity abound, with whom sugary things of all kinds go sour quickly. They had best avoid sugar—just as all malt-liquors are a poison to them. But because this is the case with one division of gouty beings, it does not follow that all who are gouty must abstain from sweets. That is far too sweeping an inference. If sugary things have been found to disagree, by all means let the individual avoid them; as he generally learns to do. But do not from that advance to the point of forbidding fruit, fresh or otherwise, and such vegetables as carrots, turnips, parsnips, onions, all admirable food for the gouty man of 'the Norseman type.' That is a *non-sequitur*. The wholesale prohibition of 'sweets' arose at a day before the chemical composition of uric acid was thought about. It lingers still, as error only can cling. Advancing knowledge of physiology is gradually exposing the fallacy; and as the younger generation takes the place of the older men, the correct treatment (hygienic) of gout will gain ground. The

origin of gout-poison lies not in the carbo-hydrates, but in the albuminoids of our food.

The lean of meat is the main source of gout. All who have paid attention to the subject recognise that fact. The butcher's bill must be cut down, and what is purchased from him should largely be fat. The poulterer, the fishmonger, the dairyman must be patronized; and, with the 'Norse' type, the greengrocer. The housekeeping money must be somewhat differently distributed from what it usually is, if the gouty person is to keep fairly well. The meals must be somewhat of this kind:

Breakfast.

Fish au gratin.
Rasher of fat bacon.
Pâté de foie gras.

Luncheon.

Cold chicken.
Leberwurst.
Well-mashed potatoes.
Stewed fruit and cream (winter).
Fresh fruit and cream (summer).

Dinner.

White soup.
Turbot with lobster sauce.
Sweetbreads.
Stewed celery.
Game.
Milk pudding.
Digestive biscuit and cheese.
Dessert.

Drink.

A poor wine, or some spirit and water. No malt liquors.
No bad champagne.

Of course variety is desirable; and the limits are somewhat restricted. But the careful housewife will get over that. (If in a difficulty, possibly a cookery-book, 'Food for the Invalid, the Convalescent, the Dyspeptic and the Gouty,' as mentioned

before, may be of some service to her.) But it is wonderful how the craving after meat dies down in a man when he has once begun to realise that meat is not good for him. One may still think of 'the flesh-pots of Egypt,' and yet feel the sight of a solid joint positively repugnant and offensive. And it is the solid joint—the plain roast and boiled—of the true British cook which is responsible for much of the prevalence of gout in Great Britain (and chiefly England), as compared to the Continent. Anyone who has observed the typical English dinner—as roast sirloin on a Sunday, which is almost an evidence of family respectability—and compared it with the dinners of the French cook everywhere, knows what the difference is. Roast sirloin, boiled round of beef, fillet of veal, roast loin of mutton, boiled leg of mutton, followed up by chops and steaks; and varied by pork in various form, roast loin, boiled leg: these are the household gods of the English cook, and largely the cause of her master's gout; plus, of course, the grand Port wine which followed the British army from the Peninsula at the crash of Napoleon. The example of the Prince Regent, too, was not without effect. The *bon vivant* becomes less attentive to his mistress, and more particular about his cook, as years go on: but both have their day. The passions play a part; and Hippocrates said eunuchs were free from gout. The female sex are essentially conservative, and the past presses upon them with the weight of years. A man must eat what is set before him—else peace does not reign in his household. If his food increases his gout, that is no reason why his cook should grapple with new ideas.

The dietary must consist of farinaceous matters, fish, fat, and fruit. Four F's. When the individual is well nourished, a quantity of vegetables is good. A lobster salad is the type of what a gouty man should aim at—provided he can trust his digestion. Stewed celery, cauliflower with grated cheese, a boiled onion, or better chopped up with some curry powder on toast—such should be one course at dinner. As to the solid joint, he ought to have a formal leave-taking of it, and drink its health in a glass of his best Port—and then never bow the knee to Baal in the form of either again; that is, if he is a prudent man. If not, he must take his chance. If he be fond of fruit let him have his fill, the venerable past ideas to the contrary

notwithstanding, apples especially. Possibly dried fruits and sweets are not much to his palate. Maybe instead of a milk-pudding he would prefer some caviare on toast, or an anchovy, or any other savoury salt fish: in such case the palate may be safely indulged. He should educate himself to eat fat, which is very good for him. Potatoes in all forms are a proper food for him. Then lettuce, spinach, all the cruciferæ, and leaves rich in parenchyma, and poor in food-value, should form a staple matter of his dietary.

Where vegetables disagree, as in the gouty Arab, it is well to try milk and farinaceous puddings. If these turn acid, then the farina should be first baked (taking care not to scorch it) for an hour, and then an equal quantity of ground malt be added; after that the warm milk should be poured on, and all be left to stand for five minutes; and then be put in the oven for a quarter of an hour. That milk-pudding will not turn sour! Or stewed fruit and cream is good: but the fruit must be stewed without sugar. The lævulose sugar of the fruit does not undergo the acetous fermentation as readily as does the cane or beet sugar the cook adds. If the existing acidity be neutralised by adding as much bicarbonate of potash as will lie on a shilling to each pound of fruit when put into the oven, the fruit will be found quite sweet enough; and not to require any added sugar. This is also a very palatable way of taking potash. It is also well to remember that these gouty folks of thin flank are usually but small feeders, requiring no great bulk of food: and therefore there is no necessity to put them upon the bulky innutritious vegetable food of the full-fed Norse gouty man.

As to drink, it is more difficult to speak. All malt liquors are undesirable; to the man of Arab type they are poison. The man of Norse type may indulge a little—provided that he cut down his meat; but not otherwise—with impunity. A little poor wine is best; and Claret and Burgundy and Australian wines are safer than Port, or Champagne and Moselle. (There is a very dry Champagne which is probably innocuous, or nearly so; but it is poor stuff.) An attempt has recently been made to reintroduce Port wine for the gouty. The results will be worth noting. A good many gouty men love a glass of Port wine as well as ever they did; but they know better than indulge in it. A little

spirits and potash, or lithia-water at bedtime form the least objectionable drink.

Then there comes the matter of water as a drink. In many gouty Arabs as little water is drunk almost as by the veritable Arab in the desert. This is not good. The tissues need bathing—just as the face requires washing. And the comparatively insoluble urates require a good deal of fluid for their solution. A certain quantity of fluid daily is desirable to wash the waste matters out by the kidneys. When the urine is scanty and charged with lithates, water is doubly desirable—indeed necessary.

And now, as to medicine in gout. To Dr. Garrod we owe a great debt in this matter. Sir Charles Scudamore used potash, but merely as an antacid. Dr. Garrod first pointed out that potash and lithia are solvents of uric acid. If either be added to a urine charged with lithates, the quick clearance tells of the solvent action. Either base well diluted will dissolve, and wash out of the system uric acid, or urates. This line of attack is excellent in all gouty persons of the Norse type. Then a mercurial pill, followed by a black draught, or a seidlitz-powder, or some purgative water, should be taken after dining out. Carlsbad salts are also good in a glass of warm water the first thing in the morning, three or four times a week. All florid, full-fed, gouty persons are the better for half-starving, and lowering remedies.

But with gouty Arabs, beware of the latter. Potash in any quantity depresses them terribly, and the uric acid solvent is not the remedy *par excellence* in their case. Lithia is less objectionable than potash; but both are to be avoided. Such persons must be strictly dieted, and their liver put in order by a combination of hepatic stimulants. That is the line of attack in their case.* Then in all, exercise (so far as it can be taken) is good: exercise—and fresh air. The combination is even better; and if both can be taken in the saddle, then this part of the treatment is perfect. It is well to foster the action of the skin by warm clothing; and it is very desirable to avoid chills, both for the immediate effect upon the kidneys and the bronchitis, to which gouty people are so subject. All skin-eruptions do well on alkaline applications;

* Sugar and uric acid will both largely disappear under such a line at times, while the urea is increased.

the efficacy of which is much increased by liberal quantities of sulphate of soda internally. Iron is rarely well borne by gouty persons ; and when it becomes desirable to administer it, it is well to give it along with potash, and well diluted. Or at times it is well to take a sulphur-water first. The courses of foreign waters are laid down on this principle.

If well-fed, gouty persons can summon up courage to determine to live upon a leguminous dietary entirely, they soon know little of their enemy. But, then, is life worth living at that price? The appeal to the palate is so small that only enough is taken to sustain life. There is no overplus to make nitrogenised waste in excess. There is no nice way of having gout ; and, what is worse, there is no nice way of avoiding it !

Be it rich man's gout, or poor man's gout, depend upon it there has been some good eating in the past—on somebody's part. Some ancestral indulgence is weighing on the poor man's gout in most cases. 'Gout lies couched in the shadow of wealth.' 'The fathers have eaten sour grapes, and the children's teeth are set on edge.'

And certainly we can see men who are leaving a legacy of gout behind them along with their wealth. The children step into their inheritance—what they do not like, as well as what they do like. Abstemiousness in one ancestor may save the next generation ; and this, probably, is the explanation of the popular belief that 'gout misses a generation.'

'Gout is the cure of gout,' said Dr. Meade ; and the man who aborts an attack of gout by colchicum purchases present ease by future pain. The man who takes colchicum to stave off the gout is likely to be a sadder and a wiser man in time ; though it is likely enough that he scoffs at the prophet who tells him so. It is all very well to take colchicum when the agony is beyond endurance ; but it is only under these circumstances it should be resorted to.

Abstemiousness is the true treatment of gout !

CHAPTER XXVI.

DISEASES OF THE RESPIRATORY ORGANS.

VERY few old persons escape some amount of trouble in their respiratory organs. In young persons, the lungs are specially liable to the change known as pulmonary phthisis—either in its earlier or more developed form. In older persons, the changes are of a degenerative character. Of course, pleurisy and pneumonia may occur at any age; but in old persons they are apt to be outcomes of general constitutional conditions, rather than primary idiopathic maladies. Bronchitis is a disease which, in its acute form, is very apt to prove fatal at either extreme of life. Chronic bronchitis, with emphysema, is the linked morbid condition which is specially associated with advanced life. It may be well to first consider what goes on, as age advances, in the thorax and the respiratory organs, before treating of any special malady.

In the first place, the thorax loses much of its mobility. The cartilages of the ribs become ossified, limiting movement in the thoracic walls on inspiration; that is one morbid change. Then the muscles very often waste, and so their power is impaired. The tracheal rings undergo ossification, and the bronchiæ have some muscular fibres atrophied, there being in other cases some hypertrophy; while the lining mucous membrane gives out a somewhat abundant secretion, interfering with the free passage of air up and down the air-tubes. As to the lungs themselves, their structure becomes attenuated and their vascularity less—senile marasmus of the lungs. In consequence of these changes, some more marked in some cases, others in others, the breathing of old persons becomes embarrassed, and laborious; and with this their

locomotion is impeded, and a sedentary life is enforced upon them.

Asthma.—The consequence is that we constantly hear elderly persons spoken of as being 'troubled with asthma,' or 'being asthmatic.' Here the term 'asthma' is used in an indefinite manner, and is applied to totally different morbid conditions. Asthma is 'a frequent difficult and short respiration,' according to Dr. Johnson (1824). According to Dr. Nuttall, asthma is 'a chronic intermittent disorder of respiration. The term is also sometimes applied to any chronic difficulty of breathing' (1880). It is quite clear that the meaning of the word 'asthma' is changing—and that the confusion is due to that fact. 'Asthma' is now used by medical men to indicate a spasmodic recurrent affection, once known as *asthma spasmodica*; while lay persons, and still more the less educated portion of the laity, use the word in its old sense of 'shortness of breath.' The word 'asthmatic' applied of old must strictly to a condition where acute attacks of '*asthma spasmodica*' were engrafted upon a chronic condition of shortness of breath, or an 'asthmatic' condition. Consequently, 'asthma' and 'asthmatic' are terms applied to conditions where the breath is short at all times; but superimposed upon this chronic state come attacks of acute difficulty of breathing, or dyspnoea.

In conditions of chronic bronchitis and emphysema there is always and ever shortness of breath, with a liability to attacks of spasmodic asthma at times. In the lung-congestion of marked mitral disease of the heart, there is also always shortness of breath, with a liability to exacerbations at times, spoken of as 'cardiac asthma.' We will leave over both these last morbid conditions at present, and speak of asthma as the term is now generally understood by teachers of medicine of the present day. This asthma is spasmodic in its character, and is due to tonic or clonic spasm of the circular fibres of the bronchiæ, or larger air-tubes. Consequently, it is also called 'bronchial' as well as 'spasmodic' asthma: the one from its seat, the other from its nature. This spasm may be set up by irritants inhaled, as gas, or ipecacuanha, or mechanical irritants, or a fog containing both chemical and mechanical irritants. Or it may be provoked by some morbid state of the bronchial mucous lining, as the con-

gestion of the first stage of a catarrh, especially in cases of old-standing respiratory trouble; or it may be set up, as Hyde Salter pointed out, by an 'offending state of the blood,' as is seen in those cases where asthma follows a good dinner, or a heavy supper. As 'hay asthma,' it is set up in summer by the inhalation of the pollen of certain plants, notably the 'anthoxanthum odoratum.' The fit comes on suddenly, and may vary from a few minutes to many hours—from a mere temporary inconvenience to a very severe and distressing malady, gravely endangering life; though, as a matter of fact, spasmodic asthma occurring by itself, uncomplicated by old-standing disease, is rarely fatal. When the attack seems to be about mortal, it passes off, leaving the patient terribly exhausted. The aspect of an asthmatic patient sitting up in bed with the shoulders fixed so as to get all possible advantages from the accessory muscles of respiration; with blue face, purple lips, sometimes a dusky hue over the countenance; with staring eyes, a look of determination stamped on the facial muscles: is a sight once seen never to be forgotten. When the attacks have been many and severe, the shoulders are thrown slightly forward, and are pointed, giving a peculiar appearance to old asthmatics, which characterises them.

From its varied origin as regards exciting causes, it cannot be said that any class of persons is free from asthma; but certain it is that spare persons of the nervous diathesis are the common subjects of spasmodic asthma; while chronic asthma belongs rather to massive persons. Sometimes it comes on in the day; sometimes it comes like a thief in the night, waking the sufferer up from a sound sleep—and a very unpleasant awakening it is. The necessity for air rouses the respiratory centre to desperate efforts, throwing the whole of the accessory muscles of respiration into energetic action, in order to get rid of the accumulated carbonic acid in the blood. But the narrowed calibre of the air-tubes interferes with this end, and so the battle goes on till the spasm relaxes. How far this last at times only occurs when dissolution seems threatening, it is hard to say; but the limits of human endurance seem reached sometimes. During this time there is no expectoration; but when the attack passes off, a little mucus is expectorated. Indeed, when a spasmodic attack of asthma comes on in old persons the subjects of chronic bronchitis,

there is an arrest of the secretion, which returns as the attack goes off. Whether the arrest of secretion sets up the asthma, or the asthma arrests the secretion, has not yet been determined. Sometimes in prolonged attacks the sufferer gets a little relief, and drops off asleep to get a little rest until the fit sets in again, waking him for a renewed struggle. This may go on even for weeks, wearing the patient to skin and bone. At last the malady disappears for an indefinite time, leaving behind it bodily exhaustion and mental depression. With women, attacks of asthma are often linked with the menstrual periods, and continue as a sort of refrain to them after the change of life has been some time passed. Where there is simple asthma uncomplicated by other existent disease within the chest, the pulse is unaltered in character by the attack. Nor is the temperature affected. If the respiratory interchanges are impeded, there is violent muscular effort to set against this; and between the two the body-temperature remains normal.

There may be some difficulty in deciding upon the precise nature of a first attack, because the patient is in an unfavourable condition for a searching physical examination; but the patient can in after-attacks usually make the diagnosis for himself, or herself. Dr. Maclachlan says that he has found an attack of asthma in old persons closely simulated by 'latent pericarditis with effusion.' Where there is old-standing lung-mischief of course this must be remembered. Once established in elderly persons, asthma is probably never dislodged; and usually tightens its grip.

As to its treatment, there is that of the attack, and of the interval. In the attack the patient struggles for breath, flings off his clothes if they in the least interfere with the breathing, and gets to the open window even in the coldest weather. Fuming remedies, as cigarettes of *datura tatula*, stramonium, cigars de Joy, or Himrod's powder, are often of the greatest service; or the fumes of brown paper steeped in a solution of saltpetre and dried may be tried. In other cases these 'fuming' remedies are useless, or worse than useless, and an emetic of ten or twenty grains of powdered *ipecacuanha* is the only thing which does the least good. *Belladonna* is a capital remedy in asthmatic states, and sometimes much can be achieved by its steady use in diminishing the severity and frequency of the attacks. Tonics of all kinds

are good, according to the indications in each case. The individual must be borne in mind as well as the malady. Hyde Salter was most particular about the food in many cases, having found that an attack of asthma is often the sequel of a good meal; and it has relations to nitrogenised waste in many cases. He also observed that if such asthmatic kept up awake over the hour of the attack, he could escape it. From this it would seem that the respiratory centre is liable to a night attack—like other things whose watch is weak at night. Locality has a great deal to do with asthma. One person is well in one place, and the victim of asthma in another. The greatest caprice is found in this respect. One asthmatic once had to sleep in Seven Dials, and anticipated a very bad night; to his agreeable surprise he had an unusually good night.

In 'hay asthma' locality has everything to do with the malady. One person only has it when the wind blows over a field of hay in his direction; while another has to go to sea, and keep there during the time of ripening grass and haymaking. Few remedies are worth a thought for hay asthma.

False Asthma.—This is due, no doubt, at times to spasm of the diaphragm, but infinitely more frequently to a quick development of gas in the bowels. Sometimes great distress is occasioned by the elastic gas preventing the descent of the diaphragm; and this is most marked where the respiration is abdominal, as in emphysema; while the pressure of the elastic gas upon the heart impedes the action of that organ. Between the two, the patient's sensations are anything but enviable. Diffusible stimulants—sal volatile, peppermint in gin or brandy, ether, etc.—are required; while black pepper (as much as will lie on a sixpence in half a teacupful of hot water) at frequent intervals is good. Some prefer essence of ginger. Turpentine stupe over the distended abdomen usually give great relief. Rubbing the back at a point corresponding to the transverse colon is a sovereign remedy for getting up 'the wind' with such sufferers; though it is quite impossible to see how this relief is furnished.

There is no confounding spasmodic asthma, and what is here called 'False Asthma,' in practice. A question might be raised whether true asthma should not be discussed, as a neurosis, in the chapter dealing with the nervous system.

Phthisis Senilis.—Senile phthisis is commonly found with a large cavity near the apex of the lung. How this comes about it is not always possible to say. In one case which came into the Victoria Park Hospital some time ago, the old man could give no account of any previous illness; yet there was a huge cavity, as all who examined him agreed about, in the apex of the left lung. It was in a foul condition, so much so that he soon had the ward to himself; but improved quickly under treatment directed to the improvement of the general health. He left the hospital in good condition, all offensive odour having entirely disappeared. The symptoms of phthisis in aged persons are not, as a rule, acute. There is some cough, some expectoration, little disturbance of temperature, or tendency to night-sweats, no diarrhoea, no hæmoptysis.* The appetite is capricious or defective, and the body wastes. After a time the patient dies, worn out despite the best of attention and nursing. When old people 'quarrel with their food,' coaxing and persuasion will do a little, reason and argument less, and scolding nothing. That they are allowing themselves to sink is a fact on which they are as clear as anyone else; but when pointed out to them, the fact does not influence them. They resemble an old Westmoreland woman I knew years ago. She had some dropsy, and after a consultation it was decided that a sharp purgative was indicated. On the next visit the powder was lying in the room untouched. On remonstrance, the patient turned obstinate. I told her, 'If you don't take the powder, Jinnie, you will die.' She looked at me steadily, and then said slowly, 'I won't take the powder, doctor;' and she did not, but died. Sedatives are almost indispensable, despite the well-founded objections to them in cases of thoracic disease. Paregoric will soothe the patient's progress to the grave; and perhaps expedite it too, though it is probably the least objectionable opiate in such a condition. Cough lozenges pave the way downwards. All opiates impair the appetite, and lessen the activity of the liver, while they lay a leaden hand on the bowels; and, on the whole, act most injuriously on the assimilative processes. At night it may be simply impossible to do without them; but they should be given with laxatives and hepatic

* This is true, as a rule, though sudden hæmoptysis at times carries off an old person never suspected of being consumptive.—*McLachlan.*

stimulants: a combination of opium, ipecacuan and euonymin is likely to be of service, with a minimum of bad effect. Their injurious action may be lessened by vegetable tonics, acids, and bitters in the daytime. The food should be as nutritive as possible, requiring a minimum of the digestive act. Puddings made with farina which has been already baked, as the Farina Cocta, A B C Cereals, malt, and malted foods, are indicated. Soups should be thickened with cooked starch. The meat should be light, as white fish, chicken, rabbit, sweetbreads; and the wine generous and in sufficient quantity. Port, Madeira, Bucellas, Sauterne, and the cheaper wines as Sauvignon and Marsala, are the wines most suited to senile phthisis; but, if the patient has the means, Constantia, Tokay, or Johannisberg are not to be despised, or Château d'Yquem even—for an annuitant. Milk and a malt preparation should be at hand during the night. (If put hot into a hot-water jug with a lid at the time of the household's retiring, and covered with a big tea-cosey, such nutritive drink will be found nice and warm in the small hours of the morning, when most likely to be wanted.) The danger of senile phthisis even more than in phthisis in younger persons, is wasting, and against this our best energies must be bent. Our recent advances in the physiology of digestion, and our acquaintance with the various forms of foods, the solution of starch and the emulsionising of fats, enable us to feed the weakly very differently from what was possible but a few short years ago. As to the albuminoid elements of food, my voice is clearly on the side of taking pepsin after food to help the feeble stomach, rather than in that of giving meat already peptonised. Partially digested milk-gruel is not objectionable, and may be resorted to where the stomach has become very weak.

Cod-liver oil may be tried in the earlier stages, and when the stomach will tolerate it is often of great service. When the stomach objects to it, then the Cremor Hordeatus or Oleobyne should be tried. Sometimes mutton-suet crumbled fine and boiled in milk is well borne by stomachs which resent the presence of cod-liver oil.

The management of a case of senile phthisis is a good test of the natural good sense and acquired knowledge of the medical man, and the nurse. (The family are supposed to be under

control. There is the tact in managing the patient, the lore in food and drink, and in hygiene. The patient's room should never be allowed to grow cold in the middle of the night; though it should be ventilated in the day, so long as the patient can leave it, if only for an hour. The food should never be in the room a moment more than is necessary, but be kept in a cold place near at hand, never in the room. A feeble wasted patient in whom the sands of life are fast running out is a piteous sight under the best of circumstances, but is infinitely more pitiable where the room is littered up with things which have no business there: on the drawers are grapes and fruits and biscuits and wine-bottles; on a table beside the bed are some pieces of orange, a little calf's-foot jelly, some milk untasted, half a glass of wine, and perhaps a little dish of ice—with a metal spoon in it, helping to melt it faster than otherwise would be. Add to this a self-satisfied nurse, young or old, and then one's sentiments lean to the view that 'death would indeed be a release,' as the patient often remarks.

So long as the patient can get about, he or she should get to a balmy climate with sunny skies, as the Undercliff of the Isle of Wight, or other health-resort on the Southern Coast, and drive about until a Bath-chair alone can be borne; when that is discarded, the patient should be placed at the window well wrapped up, while the light wind plays around; and when the window may no longer be opened, may sit and look out on that sea and land to which 'Farewell' must ere long be said. Some may prefer a summer sky in a southern land; but English home-comforts count for something. Sometimes acute phthisis is seen in old persons. A sudden hæmorrhage is followed by hectic fever and cough, which goes on for a fortnight or three weeks till the patient sinks. But this can scarcely be called a malady of old age from its infrequency.

Pneumonia.—Pneumonia is a disease set up as much by an asthenic condition as by exposure. As due to the first, it often appears in persons worn down and debilitated by pre-existing disease. It is also liable to manifest itself in old persons, especially if broken down. Occasionally it seems to be set up by exposure to cold, and then is amenable to treatment—provided that treatment be not of a depressant character. Depressant

remedies will soon precipitate a fatal issue. More commonly pneumonia occurs in old people as an outcome of debility. Dr. McLachlan, who evidently studied it carefully, gives so graphic an account of senile pneumonia that any mutilation of it is undesirable. He says: 'The obscurity which frequently envelops the local phenomena sometimes equally extends to the general symptoms. In many cases the constitution scarcely, if at all, sympathises with the morbid action in the lung. The disease is, then, either latent or only to be detected by the ear. Usually, however, there is more or less febrile disturbance, the intensity of which is in direct relation to the nature, extent, and severity of the inflammation, and the remaining vigour of the constitution. The heat of the skin, the flushing of the face, and the general orgasm of the circulation, are rarely so highly developed as they are in the adult, even in the most acute uncomplicated and sthenic attacks. If symptoms of this character show themselves at all, it is almost always at a very early period only, and the disease then differs in no essential point from, as already remarked, the pneumonia of manhood, except in the transient duration of high inflammatory excitement, and the rapid passage of the first into the second stage. After sixty, and as the patient approaches still nearer the decline of life, the constitutional phenomena are generally of a different description, and very soon, if not from the beginning, the febrile reaction is moderate, obscure, or of adynamic type. In cachectic and feeble old subjects, debilitated by protracted disease, by hemiplegic seizures, or chronic catarrh, the invasion of the inflammation, and the progress of the general symptoms as well as of the local phenomena, are usually so unobtrusive as to escape ordinary attention. This is more particularly the case in all consecutive attacks, but the same absence or obscurity of the usual symptoms is not infrequent in primary forms of the disease. A careful exploration of the chest seldom fails, however, when suspicion has at any time been aroused, to discover modifications of the respiratory murmur, or some dulness on percussion; which, with other circumstances, enable us to form a diagnosis.

'In the usual form of senile pneumonia, whether preceded or not by initiatory rigor, several hours elapse before the temperature of the skin is exalted. A slight redness of one or both

cheeks is often the first indication of general febrile disturbance. During the first and second stages the skin continues warm and dry; towards the third stage, or when a fatal termination approaches, it is cold and clammy. The pulse soon becomes small and rapid, the tongue dry, shrivelled, with difficulty protruded, and covered with a brown fur, gradually getting black. The teeth and gums are encrusted with the same dark sordes. There is not much complaint of thirst, but liquids are taken with avidity when offered. Anorexia is a very early symptom. Slight heat of the surface, with acceleration of the pulse, loss of appetite and cough, or rapidity of the respiratory movements, sufficient to attract the attention of the practitioner, though not of the patient or his friends, are often the first symptoms warning us of danger; and among these, complete loss of appetite is not the least important. Some cases are accompanied with constipation; others by diarrhoea. The urine is scanty, generally deep brown, reddish, or yellow, while the disease is at its height. There is great prostration, increasing rapidly. Delirium of a low muttering kind is seldom absent, and increasing during the night-time compels vigilance on the attendants, as aged subjects are then much disposed to leave their beds and wander about the room. The blood is slightly buffed, and the crassamentum not very firm. If the countenance is not dusky, it is generally sallow, especially towards the unfavourable termination of the disease, or as it enters upon the suppurative stage. This change in the appearance of the face is always a dangerous symptom.

With the progress of the inflammation, and the nature and extent of the alteration going on in the lungs, the oppression of the chest and the difficulty of the breathing increase. Pain in the side is frequently absent or disappears at an early period, and the expectoration ceases with the increasing prostration. The patient often dies asphyxiated, though the disease may be limited both in extent and degree. A series of cases sometimes terminate unfavourably, and the local mischief is found only implicating a small portion of the lung, the disease being still perhaps in the first stage, or partially passing into the second; while in other instances nearly the whole of the lung is seen infiltrated with purulent matter where the febrile reaction has been trivial, if at all observed. Exceptional cases are thus constantly occurring,

both as regards the physical signs and general symptoms. Respecting the latter, the chief circumstances to be remembered are, that whatever may be the mode of invasion, whether acute or insidious, with or without rigor, the accompanying fever has a strong tendency to assume an adynamic or typhoid type, and, if unchecked by judicious treatment, or the conservative powers of the system, is soon marked by profound prostration, nervous debility and coma.'

Such is a vivid portraiture of a malady which requires the greatest care in its treatment. No lowering measures are to be adopted, but everything done to keep up the strength, which is rendered difficult by the loss of appetite. That the typhoid condition readily supervenes is easily comprehensible, as all pyrexial states in old persons are apt to set up a typhoid condition, because the kidneys are unequal to depurating the blood. Murchison found that persons with the kidney disease succumb to typhus fever for this reason. And in my own experience febrile states in old persons are especially apt to pass into the typhoid condition, otherwise uræmia. A temperature of 102° Fahr. is of no moment in a child; but it is decidedly serious in an old person—especially if there be a granular condition of the kidney present.

Pleurisy.—The last remarks apply to pleurisy, which often, indeed, in Bright's disease is a secondary affection. The symptoms are rarely acute; and the pain is not great usually, while effusion takes place at an early date. The symptoms, indeed, are not usually more than those of a catarrh, or an influenza, rather with a sense of chilliness than true rigors, and aching in the limbs. There is general debility and loss of appetite. Commonly there is effusion before much notice is taken of the malaise. It is not usually of great extent. At other times the disease is 'latent;' and Dr. McLachlan insists upon careful physical examination in the aged, as this condition is often overlooked, and 'again and again the disease escapes detection.'

Pleurisy is often (and less frequently pericarditis and peritonitis) a secondary affection, and a complication of Bright's disease. 'In pleurisy and pneumonia (especially the former), the simultaneous implication of the two sides furnishes a strong presumption (supposing the urine to be albuminous) that the

inflammation is not simple but secondary to renal disease. The existence of cardiac hypertrophy without valvular disease, or of notable anemia, also favours the supposition of Bright's disease.† —(*Wm. Roberts*). In such secondary inflammations, whether pleurisy or pneumonia, the writer's experience has told him that it is well to remember their associations, and that potash with juniper in broom has given better results than the more ordinary and usual treatment. Some action on the skin and bowels, too, is desirable so far as the powers of the patient will permit. If a toxic condition of the blood be the cause of the inflammation, then depuration of the blood becomes most desirable. Whether it be the large white kidney, or the small red kidney, the eye can usually determine if the inflammation be secondary to renal disease.

Chronic Bronchitis and Emphysema.—The morbid change in the respiratory organs in old age is *par excellence* a catarrhal condition of the air-tubes with emphysema. The latter may occur without the former; but the former never occurs without more or less of the latter. The consequence is of course imperfect oxygenation. The body-heat is defective. In 'Chronic Bronchitis, its Forms and their Treatment,' the writer speaks of his early professional experience in Westmoreland, where bronchitis is very common, as follows: 'There was the old peasant, bent with toil and lumbago, or crippled by rheumatism in his hip, who kept the chimney-corner well in winter, and in bad weather at any season; who hobbled about his garden when it was fine, supported by his stick and accompanied by his grandchild; garrulous and ready to give his opinion, but interrupted sorely by bouts of coughing; his wonted remark, 'I count for little now;' yet helping to pull a few gooseberries or peas, an occupation which does not distress him by stooping; or turning out after an autumn gale to point the wind-blown apples with his stick, and watch his little grandchild gather them. Or the old dame who sat by the fireside, her favourite cat sleeping cosily at her feet, her horn spectacles on her nose, her worsted stocking in her hand, and knitting-stick in belt; with her little porringer by her side to receive the phlegm. She rarely ventured to the door, except in the fine warm afternoons of later summer, when her chair could be seen by the door, full in the sunlight, in which she basked, her

cat again at her side, for they both love heat. They are a cold race, these bronchitic folk; their oxidising processes being much impaired.'

Who, too, does not know the attitude of the emphysematous bronchitic when he wishes to speak—resting his elbow on the nearest available place, and taking a breath before commencing his speech? Or his attitude in his chair—both hands resting upon his thighs, so as to fix his shoulders (and thus get the advantage of his pectoral muscles), the muscles of his neck starting out like plough-cords at each inspiration; while betwixt these the skin is sunk in a deep fossa by the sustained efforts to breathe? If lying in bed, the muscles of the neck can be seen to drag the thoracic case up bodily; while the heaving of the bed-clothes tells of abdominal respiration by the action of the diaphragm. The emphysematous bronchitic is sparse of speech, not from taciturnity, but from want of breath; indeed, often the garrulity of age can be seen struggling with the physical difficulties of speech.

Now, in order to understand this condition, it is necessary to consider in some detail (1) the changes which go on in the different viscera, as well as (2) the changes within the lungs.

1. The bulk of the lungs undergoes enlargement, and when the chest is opened after death, the lungs partially escape from their prison, and cannot be replaced—they are too voluminous. The consequence is that the large lungs keep down the diaphragm, which becomes flatter and less arched than is normal. The diaphragm is dragged down in its violent contractions, and consequently the viscera on the abdominal side of it are pushed down bodily. Especially is this the case with the liver, which is found more or less projecting beyond the margin of the ribs. This at first gives the impression that the liver is actually enlarged (which often is the case), but it is found that it is merely thrust out of place by the flattened diaphragm. But the consequence is that, being thrust out of its snug nook, and only covered by the thin abdominal wall, the liver is apt to catch a chill, which disorders it—unless its unprotected condition be borne in mind, and special measures taken to shield it from cold. This is a very important matter indeed to attend to, and yet it is largely neglected.

On physical examination of the chest it is found that the mobility

of the thorax is greatly impaired. The cartilages of the ribs are ossified, and the thorax goes up bodily on inspiration, under the action of the muscles of the neck, which stand out in bold relief. Commonly the chest is barrel-shaped from being constantly too full. (The emphysematous person cannot take a long breath, because he cannot first *empty* his chest.) At other times this condition is not very pronounced. Between the muscles of the neck the skin is seen sucked in at each inspiration. The inspiratory act is long and laboured, contrasting with the shallow and rapid breathing of the phthisical patient. The eye can make the diagnosis, if trained. Then, on percussion, the chest is found unnaturally resonant; altogether, or in parts, according as the emphysema is general, or in patches. When in patches, these are most commonly found below the shoulder-blades. Sometimes the back becomes round with emphysematous lungs. The large voluminous lungs cover the heart, so that at times all cardiac dulness has disappeared. The heart has escaped from all means of recognition, except by the stethoscope. The ossified ribs prevent its beat from being felt. (Dr. Clifford Allbutt has recorded a rather amusing anecdote of such a case being mistaken for atrophy of the heart, with much needless alarm.) Cardiac dulness is more or less abolished; while the liver dulness has disappeared more or less completely from the thorax. The *tout ensemble* is unmistakable; while the abdominal character of the respiration is obvious.

2. Now, as to the changes in the lungs themselves. In emphysema the lungs are inflated. The vesicles are expanded, and often torn into each other, so that the chest is indeed too full of air. It cannot be emptied. The flattening of the diaphragm enlarges the thoracic space, but that is not enough. The chest becomes barrel-shaped, but that adds little to its space. The chest is ever too full of air. There is no room for a good current of 'tidal' air, the chest being so full of 'residual' air. The inspiratory effort is forcible, yet little air enters the chest. There is no movement in the thorax itself, which becomes an 'immovable box.' Such is the morbid condition of uncomplicated emphysema.

When there is also a condition of chronic bronchitis superadded—and the combination is much more common than pure emphysema—then there are other changes found. The bronchiæ are subject to dilatations, which may be spherical, but are more com-

monly bean-shaped, in which phlegm collects. The walls of these bronchial dilatations are firm, and so comparatively incompressible. (This is why cough, to be effectual in emptying these cavities, requires the chest to be inflated and well filled with air, to give the necessary compression.) In these sacculated portions of the air-tubes the sputum may lodge, and, becoming infected by bacteria, putrefies. Such patients have two forms of sputum: the ordinary phlegm, which is odourless; and an extraordinary phlegm—got up after a severe bout of coughing—which is offensive to the last degree. Sometimes the amount of stinking phlegm in these sacculated portions of the air-tubes is enough to make the breath persistently offensive by its fœtor. The mucous lining of the bronchial tubes also is altered. It is swollen and congested, being of a deep venous-red colour, either generally or in streaks or patches. Sometimes the surface is abraded, and uneven. The tubes themselves become indurated. Often they are uniformly dilated, at other times the sac is round. This latter often occurs at the lung-apex, and, when such a sac is surrounded by a firm wall and thickened lung-tissue, it becomes impossible at times to distinguish the condition from apex-consolidation with a cavity (as found in many phthisical patients) by the physical examination alone; and the history of the individual only can clear up the matter. There are also changes in the muscular fibres of the bronchiæ, which often are ‘highly developed.’—(Fuller.) Where the circular fibres are thus ‘highly developed,’ we can readily understand how it comes to pass that patients with chronic bronchitis and emphysema, besides being permanently short of breath, are also liable to attacks of spasmodic, or bronchial asthma. Any irritation, as a fog for instance, will set up a condition of spasm. (This is an important clinical fact. The purely emphysematous patient is not distressed by a fog; while if chronic bronchitis be present, the patient in answer to the question, ‘Does a fog affect you?’ will reply eagerly, ‘Oh, a fog is just murder to me!’ or some similar strong equivalent.)

This pathological consideration throws light upon two great clinical facts: one, the effect of a fog or other irritation on the bronchial muscular fibre; and, two, the effects of a paroxysm of coughing upon the firm-walled bronchial dilatation, and the ejection from time to time of offensive stinking phlegm.

The right heart is always enlarged in cases of embarrassed respiration, and is usually hypertrophied. Where there is good hypertrophy it is well. Where there is a condition of dilatation merely present, the patient's condition is unfortunate. Sometimes the right heart becomes more than usually dilated, as by the strain upon it of some extra coughing as in a passing catarrh, and then the patient's condition becomes temporarily worse. And such a passing condition of the right heart is far from uncommon with such patients, though it is very commonly overlooked; because the heart is practically beyond the reach of percussion. The condition is one to be reached by reasoning on the facts of the case, not to be demonstrated. After some passing catarrh the patient is found shorter of breath, less capable of effort, more distressed by flatulence, not from any advance in the lung-condition, but from dilatation of the right ventricle. (Here the addition of digitalis to the medicine makes a wonderful difference in the effect produced.) Rest in bed, and a careful attention to the nutrition, enable the dilated right heart to recover itself.

The whole matter of the complications of chronic bronchitis and emphysema thus rises up before one. And mainly the matter of flatulence—the bane of their lives with such patients. Flatulence prevents the descent of the diaphragm, the cardinal matter in inspiration in their case. The elastic gas in the bowels presses upon the enlarged right heart through the thin diaphragm, and embarrasses it. And between the two the patient is much distressed, and can scarcely breathe at times: and no wonder. These attacks of asthma are easily set up where the bronchial muscular fibre is 'highly developed.' We can understand that complication very easily.

The course of chronic bronchitis and emphysema is essentially a chronic one. It may be the result of an original attack of acute bronchitis, and as such is very marked in a girl of fifteen, at present an in-patient at Victoria Park Hospital. Usually some emphysema is left behind by an attack of bronchitis; which in young lungs, being merely vesicular dilatation, commonly passes away in a little time. Not so in older lungs; and an attack of bronchitis is usually the starting-point with middle-aged and old persons. In pure emphysema, the patient finds himself getting short of breath on exertion, and suspects some mischief in his heart.

On examination, the heart is found to be sound and vigorous ; but there is enough of emphysema, either in patches, or to a slight extent and diffused (in which case it is easy to overlook its presence), to make itself felt on effort. Where chronic bronchitis is present, there is the expectoration, which may be trifling, considerable, or profuse. There is almost invariably a considerable amount of cough on rising—'morning cough'—to get up the phlegm which has collected in the air-tubes at night. Movement dislodges the phlegm from places which have become accustomed to its presence, and the irritation so set up causes cough to get rid of it. This cough, if severe, compresses the firm-walled bronchial sacculations, and so their contents are evacuated and got rid of. In many cases, after this evacuation process, there is little or no cough for the rest of the twenty-four hours. In others, the cough and expectoration go on all day ; while the rest at nights is broken by the cough.

Very commonly an acute attack of bronchitis is grafted upon this permanent condition, causing an aggravation of all the symptoms : sometimes leading to a fatal result. Gouty persons are liable to such intercurrent attacks as a true fit of gout, requiring an anti-gout treatment. Or an attack of simple bronchitis in a gouty person invites the gout to settle in the air-tubes, and the bronchitis lingers as a chronic affection, liable to recurrent exacerbations.

The progress of cases of chronic bronchitis and emphysema is usually slow. If a severe intercurrent attack of acute bronchitis be experienced, the change from bad to worse may be very marked and rapid. More commonly, the case wears on, every increase of the bronchial trouble leaving behind it a worse state of emphysema, until at last the patient is worn out, or succumbs to a slight catarrh ; the exhausted system being incapable of further effort.

The treatment of such cases is first to teach the patient how to cough. Some persons are very indignant at the idea that they do not know how to cough. Yet all the same, it is a fact. They go through a great deal of useless cough before the full inspiration comes by which the phlegm is ejected. If they can be taught to fill the chest before coughing, frequently one cough would be sufficient to raise the phlegm. Especially is this filling

the chest, desirable where firm-walled bronchial dilatations exist. But it is a fact that some old bronchitics never learn the knack of coughing skilfully. All cough that can be avoided should be avoided, especially as advanced life is reached, on account of its tendency to further tear up the lungs and increase the emphysema. But this should be achieved by not having occasion to cough, *i.e.*, by taking care against cold, and by wise coughing. The plan of using sedative medicines is at once pleasant—and murderous. Opium, in all its forms, should never be administered, if it be possible to do without it, in thoracic disease. It arrests the bronchial flow, causing the secretion to be more tenacious, and so difficult to get up; it acts injuriously upon the liver and kidneys, and locks up the bowels; all of which is undesirable. It may be necessary to procure a fair night's rest for the sufferer, and some opiate be indispensable; but even here it is well to remember the drawbacks to its use, and to combine it with ipecacuanha and some laxative, so as to obviate these drawbacks as much as possible. But as to the plan of taking a cough mixture in the day, it may at once be freely admitted that it is good—for the chemist. Beyond that, its utility is doubtful. Of course, it is not denied that many bronchitics have lived for years while sipping cough mixtures four or six times a day, or sucking cough lozenges half their waking-time; but, on the other hand, every careful observer has seen cases where this soothing line of treatment has given the worst results. Certainly, in my experience, the constant resort to opiates in the day has produced such results that in my wards at the Victoria Park Hospital, the morphia-linctus is never seen but under the most exceptional circumstances; and usually when all hope of recovery is abandoned. The opiate pill at bedtime, however, has not been banished; but an eye is kept on its effect. Of all the insidious paths to the grave in thoracic diseases, the most deadly is that which is strewn with opium!

Ordinarily it is well to keep the bowels open, to maintain the action of the skin, to attend to the urinary organs, to keep up the strength; and these matters can usually be attained by suitable combinations of remedies. The value of ammonia, strychnine, and ipecacuan, as stimulants to the respiratory centre, is now being fully realised. A mixture of ammonia, nux vomica,

and digitalis (when the heart is feeble) is invaluable in acute exacerbations: while strychnia and ipecacuan in pill combined with a carminative, and, if need be, a laxative, form an admirable plan of continuous treatment. Squill is apt to disagree with the stomach; but the compound squill pill is sometimes a useful mass with which to combine the strychnia and ipecacuan. Where there is a gouty element present, then the carbonate of ammonia with iodide of potassium, and even at times colchicum, is indicated. Inhalations often give great relief, especially when the expectoration is scanty; and steam alone, or with some Friar's Balsam, or iodine, or carbolic acid, or oil of eucalyptus, or other medication, may often be used with advantage.

The clothing ought to be warm, so as at once to encourage the action of the skin, and protect the patient from cold. Warm underclothing should ever be worn; and where the liver is displaced a 'cummerbund,' or belt of flannel, should be worn to protect the viscus from chills. A fur-lined coat is at once warm and light; or the patient should wear a waistcoat with quilted back and sleeves and a sealskin front. Weight impedes locomotion, and is fatiguing when the breath is scant; and if the overcoat be heavy, it is apt to be flung off impatiently when the patient is warm, and so specially liable to catch cold.

Locality is important, and chronic bronchitics ought to go south with the swallows. On the South Coast, not only can exercise be taken in the sun on many more days of the winter than in the North, but the air is balmier, and the liability to catch a chill is much less. When the days get long, and the east winds of spring have passed away, then a return to the North for the summer months would be good and pleasant. Ventnor, or Torquay, or Dawlish, or Hastings, or Plymouth (if the patient desire to see something in his walks abroad), or Sidmouth, or Bournemouth for winter; and Harrogate, Ilkley, Buxton, or Matlock for summer, are the places indicated. Malvern is best suited for spring, as it commands two climates: on a cold day it is well to keep the plain in the valley of the Severn; on a warm day, the road by St. Ann's Well through the Wych pass is inviting, and a drive round the high grounds would not only give plenty of fine fresh air, but furnish some pleasing scenery.

When the patient's means will not allow of his, or her being a

bird of passage, then a cosy room is to be chosen, and made the patient's home during the winter. It should only be left on very fine sunny days betwixt the hours of noon and two in the afternoon. If the case be more pronounced, it is well to adopt a custom prevalent along the Pennine Hills, and 'take to bed for winter.' In a comfortable bedroom, with the window commanding a view of what is going on, the old bronchitic in Westmoreland ensconces himself as soon as the first touch of snow is seen on Crossfell; and remains in bed until the last snow-drift has disappeared, after which he turns out and drives about during the summer. He keeps his bed, but he does not decline company, and has in some instances what an American would call 'a high old time' while in bed. It is no case of hybernation in the ordinary sense of the term, or withdrawal from the world.

Indeed it must never be forgotten, in whatever is being decided upon, that emphysematous and bronchitic folk are a chilly race, who make little heat, because of the impairment in their chemical interchanges in the lungs. Consequently their heat must be conserved to the utmost, and in cold weather artificial heat is essential to their comfort—indeed to their existence. And they form a very large class of persons advanced in years; a class containing many worthy individuals who deserve well of us all. A knowledge of gerocomy is invaluable as regards the management of these persons.

CHAPTER XXVII.

THE CIRCULATORY ORGANS.

DISEASE of the circulatory apparatus becomes more common as the weight of years presses upon the organism. In very many instances it coexists with the lung-lesions just considered, and is masked thereby. Indeed, under the cover of chronic bronchitis, much disease in the heart lies hidden. The obvious bronchial symptoms conceal the cardiac symptoms, and hide them out of sight—to the untrained vision. While in other cases the bronchial flux is rather a rheum from the air-tubes due to venous congestion of their lining membrane than an inflammatory condition. In disease of the mitral valves—through which the arterial blood from the lungs enters the heart—some bronchial flux is almost always present in aged subjects; and to act upon and improve the condition of the heart is the happiest measure to adopt for the relief of the bronchial trouble, which is a consequential outcome of it.

Heart Disease.—Very vague chaotic ideas exist as to 'Heart Disease' among the public; while the knowledge of many in the profession is not very extensive. The popular impression is to the effect that 'heart disease' is a malady from which people are liable to die suddenly. Then the term 'a weak heart' is used when it is desirable that a person should avoid efforts, as hurrying to catch trains. When an ill-educated person speaks of 'a touch of the heart disease,' neither the speaker nor anyone else knows what is meant by the term. 'Ossification of the heart,' a term once fashionable, has passed away into that etymological museum where 'hives' and other obsolete terms are stored. Possibly it meant a calcified condition of diseased valves. People ordinarily speak of 'heart disease,' as if the heart was liable to only one

form of disease, which sooner or later ends in sudden death. Such misconception has led to much avoidable misery in this nineteenth century—during which alone any familiarity with the diseases of the heart has existed. Professor Acland once alluded to the use of the term ‘heart disease,’ as being about as definite as ‘Mr. Smith, Pimlico.’ And for the benefit of lay readers it must here be stated that the heart, as a hollow muscle provided with valves (see p. 78), and governed by nerves, is liable to (1) valvular disease; (2) to altered muscular conditions (to a combination of these); and (3) to nervous disturbances. With the majority of the profession, a murmur in the heart is the evidence of valvular disease. This has been so deeply impressed upon them during their hospital career; and the different murmurs (each indicating a certain form of valve mischief) so carefully drilled into them for the examination table, that a murmur is to them through life the one sole and only trustworthy evidence of valvular disease. That it is one among many *semeia*, it is not here denied; but, like albuminuria and glycosuria, a murmur has got an undue, exaggerated, and therefore misleading importance attached to it—to the prejudice of other equally important matters. It certainly has the advantage of having something definite about it. It is something that can be demonstrated, and impressed on the student-mind. But the consequence of this is that, with many men who do not carry their studies beyond their student career, a murmur is the evidence of valvular disease to the end of their days; and what is more, this witness is infallible. Instead of that, a murmur is very fallible. Of course all medical men know there are ‘blood-murmurs’ in conditions of anæmia; but they do not all know that a loud murmur may exist where there is no disease—as notably the mitral stenosis murmur.

On the other hand, when a patient first presents himself, and still more herself, to a medical man complaining of the heart primarily; it is pretty certain either that the heart is not the seat of disease at all, or that it is some nervous disturbance in the organ which is the cause of the patient’s discomfort. Pain in or near the heart is referred to that organ: when it happens, as a matter of fact, that organic disease of the heart does not have pain as one of its symptoms. The pain complained of is either intercostal or pectoral, and belonging to the thoracic walls, or it

is in the bowel]. Intercostal neuralgia in women, and wind in the curve of the colon (where it turns downward) in both sexes, are constantly interpreted as evidence of 'heart disease.' It is very doubtful even in angina pectoris if the pain is due to the heart; probably it is due to distension of the aortic root, like the pain of an aneurysm. In advanced conditions when the heart is labouring and failing, the dull ache of a tired muscle may be experienced; but it can confidently be stated that pain is *not* a symptom of any form of heart affection—certainly not of chronic disease.

Having so far cleared the ground of certain erroneous impressions, it becomes possible to consider certain changes in the heart commonly found in advanced life.

The Hypertrophied Heart.—When attention was first systematically paid to the change of form found in the heart, it was discovered that the organ was often larger than normal. Consequently it became quite usual to speak of 'hypertrophy' as a disease of the heart. That impression is melting away as the knowledge extends that hypertrophy of the heart is a compensatory growth; and that without this hypertrophy the patient's condition would be much worse. If the aortic orifice be narrowed, what would be the state of affairs if the heart-muscle did not wax and grow—its power waxing with its growth—until it can drive a normal amount of blood through the narrowed orifice in a normal time? Why, it would be this—the system would be crippled or 'let down' just so far as the heart could not throw blood into the arteries. The hypertrophy is the saving clause—and so long as it is maintained all goes well. But when the day comes that that large heart is no longer well fed, then the power wanes because of a 'failing heart.' Years and years roll on without any evidence of injury to the heart, or impairment of the general power; just because hypertrophy does exist, and endows the heart with the requisite power to propel the blood. In many cases it is just the want of hypertrophy which is to be deplored. About no maladies to which the human race is liable does there exist such confusion of terms, such bewildering expressions, as now obtain when speaking of affections of the heart. How a heart is altered according to conditions affecting it has been pointed out before, at p. 78, and need not be repeated here.

When there exists any disease at the aortic orifice, the left ventricle becomes changed in form. If there be obstruction to be overcome, the heart enlarges by a growth of normal histological elements, until its power equalises the obstruction. Just in so far as it fails to accomplish this is the system ill supplied with blood, and crippled. When the valve leaks and the blood escapes backwards, a distending process goes on which can only be limited by hypertrophic growth—which is often very great. In either case, the compensating hypertrophy is the saving matter.

‘Is hypertrophy of the heart ever really a disease?’ it may be asked. In other words, are there any conditions where the heart would be better if hypertrophy did not exist? If so, they are unknown to me. But if the question were put in other words—‘Is hypertrophy of the heart always an unalloyed good?’—the answer would be—‘It is a good; but it carries with it certain drawbacks.’ A large heart may burst an artery, as in apoplexy. Certainly; but does this risk outweigh all the evils which exist where the hypertrophic growth is insufficient? It may be a factor in the production of an aneurysm; but, on the whole, does this danger equal all the outcomes of hypertrophy not quite compensatory? Certainly not!

Hypertrophy commonly exists without valvular disease as a part of Bright’s disease, as we saw before; and such change in the left ventricle is one of the semeia of a blood surcharged with nitrogenised waste. But the less perfect the hypertrophy the less capable of exertion is the patient. In women—whose nutrition is not equal to that of man—we find very commonly hypertrophy diluted (if the expression is permissible) with dilatation, with impairment of the power in proportion to this dilution. The heart imperfectly hypertrophied palpitates on effort, and altogether the heart is more or less unequal to its function. Hypertrophy and dilatation are found combined in every possible proportion; and the more complete the hypertrophy the greater the power of the heart, while the more the dilatation the weaker the organ is. A casuist might raise the question—‘Is not a large hypertrophied and yet dilated heart (such as is common in aortic regurgitation), a more powerful heart than a perfectly normal heart?’ The answer is, ‘Maybe it is sometimes; but this large

heart is not to be coveted—on account of the circumstances under which it occurs.’

There is a normal increase in the bulk of the heart as years advance. As age is attained the arteries harden and present a greater resistance to the entry of the blood into them, when the heart contracts, and the left ventricle enlarges in proportion to the resistance to be overcome. This goes on until the big heart cracks a diseased artery; or until the heart fails from impaired nutrition. The coronary vessels are involved in this atheromatous change in the arteries; they become elongated and tortuous, their calibre is lessened, the inelastic aorta does not recoil like a healthy aorta, and the blood-flow to the heart is cut down. The muscle of the heart is ill fed, and then ‘heart-failure’ sets in. It is when the compensatory hypertrophy fails that the patient’s trouble begins.

The Failing Heart.—This is often but a further and advanced stage of the whilom hypertrophied heart; but not necessarily so. The heart may fail which has never been hypertrophied. All the same, failure of the heart is commonly the later stage of a morbid change of which hypertrophy is part of the early change. When the nutrition of the heart begins to be insufficient, then a general deterioration sets in, and progresses from bad to worse. It is now, and usually not until now, the patient seeks the doctor; feeling that something is amiss with him. The failing heart palpitates on effort; and this palpitation is a protest against such demand upon it—to which it is no longer equal. There is, too, shortness of breath in effort; the bulk of urine is lessened; when the pulse is felt, there is irregularity, and loss of rhythm. On examination the area of cardiac dulness is found to be increased, and there is a large diffused apex-beat; while the heart is found beating with a change of rhythm here and there, which Dr. B. W. Richardson has likened to ‘a change in the strikers on the anvil,’ and myself to ‘the sound of a horse changing its feet when cantering.’ Often there is a rolling, tumbling action, with a halt now and then—as if the heart took a roll over and went on again. This is the condition of a heart when failing, as regards its muscular wall; whether valvular disease exist or not.

When called in for a heart in such condition, the medical man has to ask himself:

1. Is this a mixed condition of hypertrophy diluted with dilatation which has existed for some time, not materially changing for the worse? or is it—

2. Failing hypertrophy, where the nutrition of the heart is impaired, and a process set up which must from its nature go on from bad to worse, until the end is reached? or is it—

3. *Heart-starvation*, i.e., a condition of temporary break-down due to removable conditions—and compatible with repair and recovery? These are very important questions to ask, and, usually, the answer is not very far to seek in each case.

In the first case there is usually no great difference in the patient's condition, indicating any change in the state of affairs, or any sudden diminution of the heart's power. There may have been some intercurrent illness which has lowered the organism, and the heart has partaken of the general asthenia. If the illness have been severe there may even be some œdema of the lower extremities.

In the second case there are an atheromatous condition of the arteries; a loud aortic second sound; a history of a copious flow of urine, now much diminished; and a history of recently impaired power—which, put together, point to failing hypertrophy of recent date. In the third case there is much the same series of symptoms; but usually with some history of indigestion, diarrhœa, loss of sleep, or worry, leading to malnutrition, by which the heart working incessantly is more affected than any other muscle—unless, perhaps, it be the diaphragm. If the heart and diaphragm both be ill nourished, then no wonder if the person be incapable of effort, and be short of breath on any exertion.

But the test which settles the diagnosis is the effects of treatment.

If the patient be put to bed and kept quiet; if his food be easily digestible, and yet nutritious; if to these be added remedial agents which increase the energy of the heart's contractions (*digitalis*, *strychnia*, *lily of the valley*, *casca*, and the *Virginian cherry*, etc.); and the blood be built up by hæmatics (of which iron is the chief)—then the question of the diagnosis will before long permit of an answer. Certainly it must be admitted that even a heart failing by progressive fatty degeneration will rally

for a time by such management—such judicious treatment and regimen. But granting this, this test would usually be sufficient to decide the case. And if a conscientious medical man did hesitate to give a positive opinion in a doubtful case—is the profession to be disparaged on that account? Where are the reversed legal decisions; the church controversies of the past, and present? Was a clothier never deceived in a piece of cloth? or a jeweller never mistaken in a gem?

The Fatty Heart.—Fatty degeneration of the heart is the *bête noire* of many persons. The student of medicine, as he reads of it, thinks of its insidious approach, its occult ravages, its disastrous termination in sudden death; and imagines he hears the beating of the wings of the angel of death just above his head. Twenty years later he is a vigorous, energetic, robust man, who laughs at the fears of his early years. Not uncommonly a patient appears before one hale and in good health, except for some gouty trouble or other inconvenience, with a story of ‘having been given up by the doctors ten years before for a fatty heart.’ It is quite clear there was an error of judgment in this case. How came it about?

There are two forms of ‘fatty heart.’ One, where the heart is laden with fat, as a part of what a butcher calls ‘inside fat,’ in corpulent, idle persons who eat and drink too much. There is, too, probably some development of fat within the heart’s structure, *i.e.*, betwixt the muscular bundles. Such a heart may beat irregularly, roll about (apparently), give an irregular compressible pulse of unequal beats; and generally simulate the condition of failing heart. But if the person can be got to cut down the amount of aliment taken, to increase the amount of exercise, and to take cardiac tonics, considerable improvement is commonly attainable. But this is not fatty degeneration.

Fatty degeneration of the heart is a disease with totally different features—with an utterly different causation. It has its own lineaments, which are as marked as the physiognomy of the old Duke of Wellington.

Allusion has been made before to arterial changes connected with a high blood-pressure in the arteries, hypertrophy of the heart-wall, and hardening of the arteries (p. 195). The coronary vessels are involved in the general atheromatous change in the

arteries, which is brought about by an endarterial growth, that lessens the bore, calibre, or lumen of the vessels. At the same time the blood-current in the coronary arteries is broken by the vessels becoming tortuous. The aorta, too, is less elastic. And the consequence of all this is impaired nutrition of the heart. There is no deposit of fat on the heart. But the heart loses its redness, and assumes a dead-leaf hue; and its wall is friable, and readily torn. When a section of this heart-muscle is placed under the microscope, it is found first to have lost the cross markings of the muscular fibrillæ (the commencement of the change); then some fat-cells are seen in one of the primitive muscular bundles, telling of more advanced changes; then a muscular bundle has disappeared, and a row of fat-cells—like a little string of beads—has taken its place. That is fatty degeneration of the heart!

This necrobiotic change is the conversion of the heart muscle into fat; just as a piece of muscle, placed in a running stream, or in very dilute nitric acid, will be converted into a piece of dirty-looking fat—adipocere—the nitrogen escaping as free ammonia. The change is irregularly distributed throughout the heart-wall; probably as one small nutrient artery becomes more blocked than another. Sometimes it is confined to one ventricle, according to which coronary artery is occluded. It is a change which can only go on from bad to worse, as the conditions upon which it depends are irremovable. But it is essentially a senile disease. It does not belong to early life. We should be about as likely to find a ripe apple on a tree in July as a fatty heart in a young person. Any disease impinging on, or compressing the coronary arteries would, no doubt, lead to such degeneration in the fibres of the heart; but how often, or rather how seldom, does this occur?

What says Dr. Da Costa about the diagnosis of this condition in his famous work on 'Medical Diagnosis'? 'We may suspect it if the signs of weak action of the heart—feeble impulse and ill-defined sounds—co-exist with oppression, with a tendency to coldness of the extremities, with a pulse permanently slow, or permanently feeble and irregular, and be met with in a person who is the subject of gout or of a wasting disease, and is very intemperate, or has arrived at a time of life at which all the organs are prone to decay. Something more than a suspicion is

warranted if, in addition, there be proof of atheromatous changes in the vessels, or of fatty degeneration elsewhere, such as an *arcus senilis*. Or, if it be ascertained that the patient suffers from pain across the upper portion of the sternum, and from paroxysms of severe pains in the heart; that he sighs frequently; that he is easily put out of breath; that his skin has a yellow, greasy look; that he is subject to syncope, or to seizures, during which his respiration comes to a standstill; and that he is liable to vertigo, or to be stricken down by repeated attacks having the character of apoplexy, save that they are not followed by paralysis.' These last point to syncopal attacks, when the heart evinces its enfeebled condition; and to degenerative changes elsewhere than in the heart. But in the absence of such evidences of degenerative changes in the body, it is at least hasty to assume that there is fatty degeneration present, when merely 'feeble impulse and ill-defined sounds' are found. Yet, when the heart's impulse is weak and the first-sound is impaired, many men feel themselves at liberty to pronounce 'fatty degeneration' without further reflection; or considering how far they are warranted in such assertion.

The heart is a muscle, and as such is liable to weariness; and its impulse is feeble, and its first-sound impaired while such weariness is present. Such a condition is common where the sleep has been much interfered with. And if this condition supervene at a time of life when the costal cartilages are ossified, and the arteries are hard, it is easy to think that fatty degeneration may be afoot. Some ten years ago such a case came under my notice where the diagnosis of 'fatty degeneration' had been made by one of the most eminent authorities on the heart; yet the gentleman years afterwards was in excellent health. The condition of cardiac enfeeblement in this case was due to cutting down the hours of sleep in order to push some work; and on the resumption of full hours of sleep all asthenia of the heart disappeared. It is not enough to find merely feeble impulse and diminished first-sound in order to pronounce that fatty degeneration is present: there is, as Da Costa points out, much beyond these required to justify such opinion.* Even the presence of angina is not sufficient to defend the position. In a case of

* The pain at the heart of which Da Costa speaks in the quotation made is *angina pectoris*. (See p. 226.)

recurrent angina with some vertigo, on first going out of the house, and a feeling of inability for exertion often present, which came under my care lately (and where a medical baronet had spoken gravely about the case), my opinion was that the condition was due to 'latent gout'; an opinion at first received with polite derision. But in less than three weeks unmistakable gout appeared in the right great toe; and, on this, all symptoms connected with the heart disappeared.

In conditions of malassimilation, or draining discharges, where the heart and diaphragm are ill fed, there is shortness of breath on effort, and a feeble heart; indeed, a condition closely simulating that of 'fatty degeneration,' but which is really only 'heart-starvation,' and remediable by appropriate measures, as tonics and easily digestible food. This condition I have termed 'Heart Starvation,' and a reviewer in the *London Medical Record*, noticing the distinction, wrote as follows: 'Each is the effect of malnutrition. One, however, is a perfectly curable disease; whereas fatty degeneration, with atheroma of the arteries generally and of the coronary arteries especially, is a senile change which carries with it the gravest prognosis.' When other evidences of senile changes in the different tissues of the body are not forthcoming, the diagnosis of fatty degeneration becomes decidedly questionable and improbable: while founding the diagnosis on mere weak first-sound and feeble apex-beat is simply unjustifiable. In the absence of a hard artery, ossified ribs, and external evidences of senile degenerative changes, the diagnosis of fatty degeneration is certainly indefensible—except under very extraordinary circumstances.

If the diagnosis took the direction of 'a feeble condition of the heart,' it would quite meet the case; and a longer observation might be required in order to be able to decide whether this asthenic condition is due to removable causes—or to a fatty degeneration of the walls of the heart, because a sufficient blood-supply is no longer furnished to maintain those tissues in their integrity. This would be much better, in every way, for both medical man and patient; would very often save the first from the discredit which attaches to unfulfilled prophecy, and the latter from anxiety that is ill-founded and unnecessary. We know perfectly well that in sustained pyrexial states, like enteric fever,

the heart-muscle is weakened by an acute fatty degeneration of the muscular fibrillæ—from which the heart usually recovers by the development of new fibrillæ within the sarcolemma. Sometimes the degeneration is such that sudden death on effort is not unknown in our fever-hospitals ; while in other cases the heart is so weakened that a long time elapses before it recovers its normal tone. How far softening of the heart-muscle may at times take place in elderly persons without that condition of the coronary vessels which forbids hope of recovery, is a point upon which, at present, it is impossible to feel certain. In all cases of doubt it is best to treat the case, and await the result. This is surely better than indulging in a hopeless prognosis, and leaving the patient, unsuccoured, to drift from bad to worse : or at other times to have the prediction utterly falsified by the patient's recovery under some other medical man who is more hopeful. The distinction between a truly fatty heart and its counterfeits is often no easy feat ; and a matter where an able man might at times halt betwixt two opinions. But surely it is not a difficult matter for a man to refrain from pronouncing 'fatty heart,' when he is only justified in saying a 'feeble heart' ; because he is disinclined to look strictly into the associations of the doubtful heart. The terms 'fatty heart,' or 'some change in the coronary vessels,' are at times resorted to, it is to be feared, without better foundation for their use than an apprehensive temperament ; or that mental attitude which never fails to see the grave aspect of any subject : or maybe, at times, they are merely the outcome of diagnostic slovenliness.

Fatty degeneration has nothing to do with the assimilation of fat, nor yet the accumulation of fat in the body ; it is a necrobiotic change where the muscular structure undergoes a fatty decay, and is found alike in small lean persons, and in large stout people. It is essentially a disease of advanced life, and is found along with other evidences of tissue-degeneration, and senile changes. It does not, when in pure form, give rise to active symptoms of heart-failure so much as negative indications ; and is commonly the reason why elderly and old persons succumb to sudden efforts. But all the same these persons have almost invariably known that something was wrong with them ; though, with the reticence of age, they have not complained. Death

may come like a thief in the night ;' but that is certainly the exception, and not the rule.

The Dilating Heart.—At other times the heart fails by a process of dilatation—a yielding of the muscular fibres of its wall. (There may, or may not be, some fatty degeneration on foot in the later stages ; but this is not essential to the case.) This form of heart-failure presents features widely different from those of the fatty heart. Instead of inability for exertion with breathlessness, there is rather palpitation on effort. Altogether the dilated heart is more active and unruly, and its symptoms more obvious, than is the case with the fatty heart. It is the sort of difference between a 'swoon' and a 'fit' of convulsions. The pulse is irregular in time and volume, and this irregularity is more pronounced in effort. There is venous congestion, and this is seen in the portal circulation. The liver enlarges ; the stomach is liable to catarrh, and the patient 'feels full' even with an empty stomach ; there is much flatulence ; the liver and spleen enlarge ; albumen is apt to show itself in the urine. The ankles swell and pit on pressure, while the œdema mounts. There is some fluid in the abdominal cavity, and later on in the pleural cavities ; while the scrotum and the prepuce become distended with fluid. The countenance looks blurred, the cheeks often are high-coloured, and the lips become of a blue hue. The bulk of urine falls, while the urine is high-coloured, of high specific gravity, and often laden with lithates. The breathing becomes embarrassed, and the patient cannot lie down, but has to be propped up in bed, or even forsakes his bed for an armchair, where he remains day and night ; the swollen legs being heavy, and causing much discomfort. Paroxysms of dyspnœa come on specially at night (cardiac asthma), and as the condition deepens the patient becomes drowsy, and begs for sleep ; but the necessity for breathing keeps him awake. Worn out from want of sleep he drops into a doze, and awakens with a start out of a horrid dream to breathe hard for dear life. At last he drops off to awake no more.

The features of the dilating heart are thus seen to be very different from those of the fatty heart. But in the dilating heart there is at first, at least, an amenability to treatment. Not uncommonly there is some temporary, or remediable cause for the failure in the muscular wall, as diarrhœa, indigestion, or want of

food or sleep, or overwork, or illness ; and then the heart fails. It was said before there may, or may not, be valvular disease present. Very commonly there is some mitral disease coexistent, and the patient comes into hospital, or calls in medical aid, not because the old valvular lesion has undergone any change for the worse, but because the muscular wall has broken down. By rest in bed, and appropriate measures—cardiac tonics, with diaphoretics, diuretics, and cathartics—the dropsy falls, the symptoms are diminished, the patient can lie flat in bed ; and after a time goes back to work, or is in his, or her, usual health. Again and again may this occur ; but sooner, or later, the case takes a turn for the worse, and all treatment is futile to arrest the downward course.

Such, then, are the two forms of heart-failure. But cases occur where the two are blended. Sudden failure is apt to occur with the fatty heart ; while with the dilating heart one constantly feels that sudden death would be welcome—to put the patient out of his, and still more her misery—but it does not come. There is, however, one set of circumstances under which sudden failure of the heart's action may occur under the aspect of a merely dilating heart, and that is when there has been longstanding indulgence in alcohol, leading to a deterioration of the tissues. Such a case was under my care at Victoria Park Hospital some little time ago, in a woman about fifty-three years of age. After being in bed a few days under the usual treatment and apparently doing well, she suddenly collapsed. On post-mortem examination a commencing fatty degeneration was found elsewhere as well as in the heart ; and the liver furnished ample testimony to the habits of the deceased. The explanation of the sudden collapse was thus furnished.

Dropsy.—Dropsy, long classed as a disease, is now regarded as the outcome of some disease. It may be cardiac, renal, or hepatic in origin. When the liver is the starting-point, then we get ascites, or an accumulation of fluid in the abdominal cavity. This can only be confounded in women with an ovarian cyst. Where the heart is the starting-point, the œdema first shows itself round the ankles, or over the instep. The skin is pale, and on pressure with the finger a pit is produced, which persists, or lasts some time after the finger is withdrawn. When slight, this

œdema is commonly spoken of as 'some puffiness.' It is due to effusion of fluid into the subcutaneous areolar tissue. It may disappear to return again. Gradually it mounts, and is found as high as the knees. The legs are then rendered so heavy as to be moved with difficulty. So long as the patient can sit up, the swelling is most marked at bedtime. Indeed at first the œdema may only be present in the latter part of the day, disappearing in the night. But steadily it rises, and with this there is effusion from the serous surfaces, or, at least, accumulation of fluid in the serous sacs, as the peritoneum, the pleuræ, and the ventricles of the brain. The characteristic of uncomplicated cardiac dropsy is that it commences in the lower extremities, and mounts upwards, steadily—or erratically.

Anasarca is a more widespread effusion into the areolar tissues, and often first shows itself in the loose areolar tissue below the lower eyelids. Often such swelling under the eyelid is present long anterior to anything serious being developed; but it carries with it a certain significance. Anasarca may involve the upper extremities as well as the lower, and be found wherever loose areolar tissue exists. It is its general diffusion which characterises anasarca as compared with œdema. Anasarca is linked with kidney disease; while œdema is associated with heart-failure. When anasarca shows itself in a case where disease of the heart is obviously present, then renal complications certainly coexist. Anasarca may show itself when the pulse is firm and sustained; and then cardiac tonics are less useful than in œdema. The treatment consists of baths to encourage the action of the skin; free purgation, and tapping. In my experience tapping has given no good results in œdema; whereas it has been of great service in anasarca. When anasarca is found with a feeble heart, the question of tapping becomes a grave one. If adopted in an unsuitable case, it but adds to the patient's discomfort. If withheld in a suitable case, a great means of relief is denied to a wretched sufferer, glad of any help. When in doubt it is well to prick the skin with a needle; if fluid readily follows, then further 'tapping' will probably be useful; but if little fluid oozes out, then the prospect of further tapping doing good is very doubtful.

The vulgar equivalent of dropsy is the phrase 'filling with water,' a phenomenon much dreaded. Yet dropsy occurs under

circumstances, at times, where it is comparatively insignificant. After a trying malady some œdema about the ankles may show itself. It is often found with overwork in middle-aged women, where it carries with it no great gravity. It may show itself after some disease in the respiratory organs, and pass away. It often comes on in the later stage of pulmonary consumption. But under whatever circumstances it may appear, lay persons dread it; and especially uneducated persons. In their minds it is always associated with grave danger, and consequently when the question is asked, 'Is there water there, doctor?' a very cautious answer is desirable. By cautious I mean a guarded answer, involving an explanation of the precise gravity connected with the presence of fluid in the limb; so far as this is possible. They know very well that dropsy or 'water' may at times disappear—but they also know that it has an unhappy tendency to reappear; and its reappearance is ever regarded as the beginning of the end. Certainly when dropsy reappears, while the patient is under judicious and appropriate treatment, its reappearance is fraught with the gloomiest prognosis.

At times, a condition of anasarca will be pretty fully developed, and not only yield to treatment, but not reappear for some time. When attached to the West London Hospital, an old man of seventy came into the hospital with great dropsy in both upper and lower extremities. He was a hale old man, and under remedial measures all the dropsy, and other untoward symptoms, disappeared; and when he left the hospital the house-surgeon appended 'cured' to the notes of the case. This was, perhaps, scarcely exactly correct, because he had a valvular lesion in his heart; but certain it is, that for the two more years I was connected with that institution he attended as an out-patient, walking back and forwards from Chiswick without difficulty: since then the case has been lost sight of. An old Westmoreland yeoman, an octogenarian, was once seen by me with his legs terribly swollen. Some six months afterwards I met him on his pony, looking very well and hearty. Some year, or so, after that he succumbed to a final attack of dropsy. He had had slighter attacks previous to the one in which I saw him. An old gentleman in the same county sat up, with dropsy in his legs, in his armchair for three weeks without ever going to bed; yet he

recovered and went about for some months after, and then died suddenly. He was ninety years of age. What a case of dropsy will do under treatment, depends very much upon the line of treatment adopted; and very much upon the constitution of the individual. Chronic alcoholism always adds to its seriousness; and yet I have seen it appear and disappear, and reappear again after some pneumonia (set up by a bad fog) in an old gentleman who was far from a total abstainer. Yet again it departed, and never returned, he dying some twelvemonths later from a cerebral affection.

Intermittent Pulse.—Considerable confusion exists both within and without the medical profession about an intermittent pulse. It was held in the earlier and cruder stage of our acquaintance with cardiac maladies that intermissions in the pulse were of grave significance. To Dr. B. W. Richardson, F.R.S., we owe the first clear and unmistakable utterance to the effect that simple intermission is often merely a neurosis, or disturbance of rhythm. Often it arises from a shock, as shipwreck, or anxiety, or mental tension; and persists a considerable time after the event which set it up. A typical case came under my notice some few years ago, in a Canadian; who was not only excited, but who exerted himself most vigorously when his premises were on fire. Next day he perceived a halt in his pulse (which had not been there before), and this had existed some eighteen months when I saw him. He had had a number of opinions given him in Canada—each man, no doubt, doing his best—with some discrepancies betwixt them; he was greatly relieved to have the matter explained, and being in England a year later, called to report himself, and tell how much better he was. The halt had almost entirely disappeared; whether as the result of the medicinal treatment, or simply as the consequence of his mind being eased, was not very clear.

But there is intermitting and intermittency. A mere halt, preceded by a brief pause, is quite common in elderly men; and many medical men have consulted me for such halt, including the late Dr. Archibald Billing, in whose case it was well marked. He was then over eighty years of age, and lived years after I saw him. Why such halt occurs it is not easy to say. When there are other evidences of impaired cardiac nutrition, without athero-

matous arteries, it is easy to conceive of insufficient nutrition of the cardiac ganglia being a possible cause. But in many instances there is no evidence of any failure in the nutrition of the heart; and then one is compelled to fall back on the hypothesis that the halt is due to some derangement in the nervous mechanism of the heart. Such halt may occur once in every five, or ten, or twenty, or fifty beats; the pulse being perfectly equal, and rhythmical between the halts.

But when the intermission is frequent, and is felt when the heart is heard to beat, a very different significance attaches to the halt. Here some of the ventricular contractions are too feeble to reach the radial artery; while others do reach it. Such intermission is suggestive of fatty degeneration, and is usually found with the concomitants of that senile change. Old persons whose hearts are failing by such mural decay, but where no very advanced condition is necessarily reached, will often be found to have this form of intermittent pulse very marked in spells of cold weather; the cold seeming to depress the nervous ganglia. Supposing the numeral 1 to represent a full normal heart-beat, and a dash so — for the halt, we should get a pulse something like this: 1, 1, 1, — $1\frac{1}{2}$, 1, 1, 1, 1, — $1\frac{1}{2}$, 1, 1, 1, 1, in the first form; a rather stronger pulse-wave following immediately on the halt. While in the second form we would get something like the following: 1, 1, $\frac{1}{2}$, 1, 1, 1, $\frac{1}{2}$, 1, 1, $\frac{1}{2}$. Yet even with this latter form, much may be done by rest in bed, and cardiac tonics.

Irregular Pulse.—With a dilating, or even dilated heart, with or without mitral disease, the pulse is apt to be irregular, both in time and in volume. Then there is unquestionably lack of tone in the muscular wall of the heart. The pulse will give something like this: 1, 1, 1, 1, $\frac{1}{2}$, $\frac{1}{2}$, — $1\frac{1}{2}$, 1, 1, 1, 1, $\frac{1}{2}$, $\frac{1}{2}$, — $1\frac{1}{2}$, 1, 1, two, or more defective beats preceding the halt; which is followed by a beat stronger than usual. Sometimes amidst fairly regular rhythmic beats comes a feeble stroke; while in other cases there is a full beat at times amidst a series of rather weak beats. In the latter case appropriate treatment often gives very satisfactory results. The $1\frac{1}{2}$ beat is always of good omen.

Valvular Diseases.—Valvular disease of the heart is common with old persons. In some cases the disease is of long standing, and exists without malign effect, being slight. In others there

are evidences of cardiac failure, not because of any change for the worse, any advance of the valvular disease, but because the nutrition of the heart-wall is failing; and with this the muscular power is waning. Often a temporary rally may be made under these circumstances. When the muscular debility is due to remedial general conditions, some more permanent improvement may be brought about.

But the valves of the heart in aged persons are apt to undergo a change spoken of as contracting, or sclerosing valvulitis. In my experience this is mainly found with the 'gouty heart'; and the valvular disease linked to, if not actually due to, gout. When it occurs in the aortic valves it most commonly leads to stenosis or narrowing, and less commonly to regurgitation; but the latter does occur at times. Sometimes the lesion progresses with considerable rapidity; while at other times it lingers on its course. Fainting attacks lasting for some time in old persons lead at once to a suspicion of aortic stenosis—which is often borne out by physical examination. In the mitral valve the result is as often regurgitation as stenosis. Sometimes the free edges of the valves become contracted and puckered, and so incompetent, more or less; while at other times there is a drawing together of the edges of the valve-curtains—like the fusing together set up by rheumatic endocarditis, only slower—and in consequence some stenosis, or narrowing of the ostium, is the result. In either case it is well to remember that an enlarged left ventricle is a part of that great morbid change in the vascular system wrought by gout, or granular kidney, and to think of this as antecedent to the valvular changes. Indeed, here the muscular change is largely antecedent to and not consequent upon the valvular lesion; and therefore we have to deal with a condition different from that where valvular disease is the morbid starting-point. So much for the diagnosis. Then for the prognosis. In this form of valvulitis there is an undoubted tendency to go from bad to worse, hence the terms 'contracting' or 'sclerosing' applied to it; and yet, admitting this, in some cases the progress does not seem measurable, so slow is it. Cases vary, and several observations extending over a certain period of time can alone determine the rate of progress in any case; or, as Oliver Wendell Holmes happily puts it, 'to get an arc sufficient to determine the circle.' In some cases the loud

snap of the aortic valves (partly due to tension of the root, too, Dr. Sibson said) is found ; then some muffling of the sound ; then a murmur, faintly heard, which waxes till it completely masks the second sound. And all this in two or three years, telling of rapid progress. At other times there is a regurgitant murmur to be detected, while the closure of the aortic valves is still heard as a clear second sound. Or a seesaw murmur, telling of both stenosis and insufficiency, is found. A seesaw murmur is almost always aortic ; though sometimes heard so clearly over the mitral area as to suggest its mitral origin. When a condition of stenosis and regurgitation occurs at the mitral valve (a 'button-hole mitral') the murmur varies oddly, being one day that of obstruction, on another day that of regurgitation. (As a consequence, the opinion of different medical observers may vary, and yet each be correct. Many a discrepancy leading to professional discredit has arisen from disregard of this fact.)

As to the significance attaching to double valvular disease, it may be questioned if it varies much from that of a single lesion.

Dilatation of the Right Heart.—This is a very common condition following upon embarrassment of, and obstruction in the pulmonary circulation ; whether this be due to a mitral lesion, or to some condition of the respiratory organs, as chronic bronchitis, emphysema, or pleuritic effusions, or morbid growths. The right ventricle stretches, and the regurgitation follows into the right auricle, and the great veins. Pulsation in the jugular veins is often seen here ; while liver-pulsation can usually be felt. If marked, then there is venous congestion, especially in the portal circulation ; the liver and spleen are enlarged, the stomach is liable to catarrh, while the kidneys are congested and the urine becomes albuminous. There are, too, dropsy and serous effusions. In any acute intercurrent disease of such thoracic conditions, or from cardiac asthma, the right heart may be acutely distended, even to the point of inability to contract, and then the patient dies. Venesection has been found useful to relieve such an over-laden right ventricle. Cardiac tonics are indicated. We can do nothing for the valve-change, but we can strengthen the heart-muscle.

Atheroma.—This is a change in the bloodvessels, a growth of connective tissue in the arterial wall, which leads to different

results. The artery may be thickened and elongated, as seen in the temporal artery in many aged persons. The wall may be soft and thick; or it may be hard. Sometimes where a deposit of lime salts occur in the new growth the arteries may become calcareous, and even in some cases feel like clay 'pipe stems.' Such arterial condition is commonly the cause of senile gangrene of the extremities.

Sometimes the aorta is distended generally, and can be felt pulsating by the finger pressed into 'the neck hole,' while the patient thrusts the chin forwards and downwards. Sometimes the dilatation is at the root of one, or other carotid artery; and can be both seen, and felt.

At other times the seat of the disease is more localised, especially at the outside of the curve of the aortic arch; and where the artery is subject to flexion, as in the ham, the armpit, in the groin, or at a point corresponding to the hips. The atheromatous portion being weaker than the healthy artery, it yields to the internal blood-pressure, and this bulging is called an aneurysm. It may be 'globular' or 'fusiform,' or 'dissecting,' pushing its way in the line of least resistance. Sometimes a patch of atheroma breaks down, leaving an ulcer in the inner wall of the artery; and the wall, so weakened, yields. The danger of an aneurysm lies in its bursting suddenly. Consequently rest is essential. To keep the blood-pressure low by non-nitrogenised food, and by semi-starvation indeed, and purgatives, is desirable. Hydrate of chloral not only keeps the patient quiet, but slows the blood-current, and so is of use. Iodide of potassium tends to make the blood clot; and these two drugs may be given together usefully. If the blood in the aneurysmal sac can be made to clot by degrees, then the sac fills up and contracts; and the danger is over. If the surgeon can tie the artery on the proximal, or heart side, then the aneurysm is rendered harmless. When nothing else can be done, the aneurysmal sac can be protected against any violence which might rupture the sac, by a leaden plate, or leather moulded to its shape. Sometimes, when the aortic wall is hardening in early atheroma, it may be cracked directly by a blow, or by effort, or by a shake,—as a pitch in the hunting-field.

Such, then, is a brief sketch of the morbid changes found in the vascular system of aged persons. In dealing with the different

maladies, the pathology of each must give direction to the line of treatment to be adopted. If the danger loom on the side of too high a blood-pressure threatening the arteries (and even the heart in angina vasomotoria), then a restricted dietary and medicines lowering the blood-pressure are indicated. When, however, the danger lies in failure of the heart's power, then the opposite line of good food and cardiac tonics suggests itself. Even here the heart may be embarrassed by the presence of nitrogenised waste in the blood—and cleansing the blood be as material as rest in bed. Our knowledge of remedies which increase the vigour of the heart's contractions has immensely increased of recent years; and with this our power to succour sufferers from cardiac failure. It is not merely in our power of recognition and discrimination of the various forms of heart disease and heart disorder, but also in our possession of means preventive, curative and palliative; that much more can be done for the heart-patient now than was possible but a few years ago. We now know how the different morbid conditions carry with them each its own appropriate line of treatment; as well as how morbid influences act upon the heart; and so can both prevent and help. The necessity for toil is the great difficulty in most heart-cases.

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CHAPTER XXVIII.

APOPLEXY.

APOPLEXY is rather a disease of the vascular system than of the nervous system ; though constantly spoken of in connection with the latter. It consists of an effusion of blood into the substance of the brain. This may take place from several bleeding-orifices, but usually there is only one such bleeding-point. This last will now be considered.

A healthy elastic artery does not rupture very readily. But when the arterial wall has become brittle, then it will crack or rupture. The association of apoplexy (sanguineous) with simple hypertrophy of the left ventricle of the heart, and encephalic arteries—'thickened, rigid, ossified, and brittle'—was pointed out as a matter of observation by the great pathologist, Rokitanski, long before the linked morbid process before spoken of (p. 171) was more than suspected ; and considerably before it was seen in its entirety. It may be well to repeat briefly the condition. There are a large left ventricle, atheromatous arteries, with a high blood-pressure in them, and granular kidneys. The condition which may be called 'Bright's disease,' or 'the gouty heart,' or 'atheroma,' according to the prominent symptoms, or the standpoint from which the malady is looked at. Of old, it was common to talk of 'the apoplectic habit,' which meant a short, thickset frame well nourished, with a red face and a bull neck ; but it is a great mistake to assume that such persons alone are liable to apoplexy. Just as the fatty heart is found in small, spare people as well as the large and corpulent, so is apoplexy. If the heart be large and the encephalic arteries brittle, true apoplexy may occur ; no matter of what build, or to what type the individual belongs. The divisions of 'the Norse type,' and 'the

Arab type,' as regards gout (p. 194), alike contribute their victims to apoplexy. Small active beings without an ounce of fat on them die of apoplexy ; as much as do the well-nourished and of high complexion, or the 'Old Father Christmas' type. The evidence that an attack of apoplexy is to be feared is to be chiefly found elsewhere than in the nervous system. Very often there are no premonitory symptoms. Read the obituary column of the *Times* at a sudden spell of cold weather, and it will be seen that the proportion of old and elderly persons who have died suddenly, is strikingly large. The cold contracts the myriads of cutaneous vessels, and in so doing limits the vascular area ; with the consequence of sending up the blood-pressure in the internal arteries. Then a brittle encephalic artery may snap ; or the heart, if weakened by commencing fatty degeneration, may fail—unable to overcome the opposition offered to its contraction. One of these two things may happen. If the heart be large and texturally sound it will burst an artery. If the heart be decayed it will stop, over-distended and palsied. Fat or lean, large or small—it matters not ; both alike run their risk of one of these two fates overtaking them. When the apple is ripe enough it matters not who shakes the tree. In some families there is a distinct history of a stroke from the large heart bursting a brittle vessel, and some years afterwards sudden death, from the failure of a rotten heart. Having survived the dangers of the rocks of Scylla—the risk of apoplexy, they ultimately drift on to the shoals of Charybdis—the more certain fate of a decayed heart.* Such is the natural history of true or sanguineous apoplexy.

It is quite obvious that there may be much vascular fulness of the head at times before an artery gives way. Are there any evidences of such hyperæmia of the brain ? It is written that there is fulness of the carotid arteries, evinced by their pulsating strongly ; that dull headache, vertigo, buzzing or singing in the ears, flashes of light, or stars, and starting of the muscles—according as the sensory or motor areas are specially flooded with blood—are present. No doubt such symptoms do exist in many cases ; just as it is equally true that apoplexy may be brought on by excitement, or any cause which will lead to

* Not a family of which a strain runs in the writer's blood, but can show instances of this history. Yet they are long-lived people.

increased arterial fulness of the brain. (The brain, like other viscera, is more vascular when functionally active. This has been demonstrated by incontrovertible evidence.) Fulness of blood in arteries already severely tested, constitutes a danger of an apoplectic attack; whether it comes off or not. Persons of full habit usually take a sharp purge of some saline cathartic when they feel uncomfortable in their heads; and a very salutary practice it is. Only it should be followed by a spare dietary. For if the blood be great in bulk the pressure on the arterial wall is great with it. The artery bursts when the pressure within it is great; just as a water-pipe will burst for the same reason, or a steam-boiler. Consequently there is the preventive treatment of apoplexy.

When the rift does occur, the blood escapes and bores away into the surrounding tissues, finding its way into the ventricles, or pushing through the textures of the brain—taking the line of least resistance. The common seat of the rupture is the left middle cerebral artery. With the rigid unyielding bony case of the brain, the skull, the presence of the blood-clot means so much pressure upon the contents of the skull; and this pressure on the cerebral hemispheres abolishes consciousness. Still this does not endanger life. But when the pressure of the waxing blood-clot begins to make itself felt upon the respiratory centre at the base of the brain (at the back), then the danger to life becomes imminent. If a stop cannot be put to the growth of the blood-mass the pressure will soon be such as to squeeze the life out of the respiratory centre. Clearly, when symptoms of compression of the respiratory centre are manifesting themselves, the bulk of blood in the body should be promptly reduced; and the quickest way of doing this is to bleed the patient. I have seen this done; and done ineffectually. To be effective, where there is a large strong heart the patient should be bled within an ace of his life. But what medical man would take the risk of the hostile criticism to which such action would expose him; especially if, after all, the patient did die—and even such heroic action would not infallibly save life—it is impossible to say. Probably only a man who not only had the courage of his convictions, but a reputation which was so well established that it could not be shaken by anything—no matter how untoward.

Either the effusion is sufficient to squeeze all life and vitality out of the centres at the base of the brain ; or it reaches a certain limit only, in which case the patient survives. Sometimes the first effusion is survived ; possibly only for a second hæmorrhage to blot out what remains of life. This second hæmorrhage may follow in a few hours, in a few days, or in a few weeks, or even after a longer interval. There is a popular impression abroad that 'the third stroke is fatal.' What foundation there is for such impression it is impossible to say.

When the attack is not immediately fatal, several issues are possible. Allusion has already been made to a second effusion. Inflammation may occur around the clot. This may, or may not be fatal. Sometimes a cyst wall is formed, and long after the 'stroke' (as an apoplectic attack is commonly termed, especially when it is survived) a small cyst is found in the brain, telling of the by-past hæmorrhage. At other times a softening process goes on, which leads to another 'stroke' in time : but this time with a fatal result. Or a more fortunate sequel may take place. The clot becomes less in size. 'The blood disintegrates, it becomes yellow, ochrey, or coffee-coloured; the corpuscles break up ; and out of the colouring matter crystals arise.'—(*S. Wilks.*) If this process be comparatively rapid, then complete recovery may take place. If slow, the pressure on certain parts of the brain is such, and so long continued that some portion, more or less, never quite recovers its function.

Usually the result of a 'stroke' is that when consciousness is recovered the face is drawn awry, the speech is affected, and there is paralysis of one side. How are these phenomena brought about ? The motor area of the brain is so squeezed that its function is abolished ; and the parts so compressed tell of the seat of the lesion. The brain consists of two halves corresponding to the two sides of the body, and a blood-clot in one brain-hemisphere will affect the corresponding side. As the motor centres lie near together they all suffer—as a rule. As the pressure is lifted by the absorption of the blood-clot, the parts regain and resume their function ; or in other words the patient 'recovers the use of his limbs.' Commonly the recovery is but partial. It is held that the look-out is most satisfactory where the leg takes the lead, and gets well before the arm. Where the arm improves first the mind

is apt to remain affected. Just as the bodily trouble improves to a greater or less extent—so with the mind. The patient may halt all the remainder of his life after a stroke; so the mind may halt for the rest of his days. All depends upon the function of the cerebral area which is pressed upon; and the extent to which the pressure goes, and persists. In some cases where the recovery is imperfect the paralysis is due to degeneration of the motor nerve-tracts—along which messages have not been travelling, because of the mischief at the head office. Here there is usually rigidity, and the condition is spoken of as ‘late rigidity’ following a stroke. Or the muscles may waste, and so be unable to move when motor messages once more reach them. (Consequently now it is customary to use massage and electricity to keep the muscles healthy against the day when the motor messages may once more come to them.)

At times the injury is quite localised. The stroke may render the person totally blind, yet otherwise unaffected. Then the optic apparatus is damaged. Speech alone may be affected; not the mechanism of speech which is commonly involved in hemiplegia—but the speech itself. The patient cannot get out the right word for the thing meant, and calls it something else. Here the lesion is localised in or near the speech-centre, known as Broca's Convolution. (The existence of this speech-centre had been determined from clinical facts before Fritsch and Hitzig, and still more, our own countryman, Ferrier, had mapped out the brain, and discovered the function of each area). There may exist several forms of aphasia, each with its own features. A patient may be speechless, and yet may be able to write what he cannot say; he may be wordless, and yet convey his meaning by gestures and pantomime. He may use a wrong expression, as ‘worm powder’ for ‘cough medicine.’ He may only go wrong on an odd word, here and there; or be so hopelessly aphasic as to require to be sent to an asylum. Even then he, or she may re-acquire language slowly, by the education and development of the word-centre of the other cerebral hemisphere. The subject is one of weird and enthralling interest, but it cannot be dealt with further here.

What any one case will do is never absolutely certain. Recovery in all stages of incompleteness is attained at last; after

which the paralysis, such as it is, has no tendency to increase. Commonly a disabled hand alone tells of the injury done. When the stroke is due to a softened area the intelligence may be unaffected, and no loss of consciousness be experienced. Even a patient's intelligence may be unimpaired, while the capacity to speak is lost; and gesture by the unaffected side be the only means of communication with those around: while the eye is speaking as eloquently as ever. But when the stroke is due to true apoplexy, the blow to the brain is such as to abolish consciousness.

Serous Apoplexy.—Then there is serous apoplexy, or the effusion of serum within the skull. This may occur after excessive indulgence in alcohol; it may supervene in the course of some malady; it is undoubtedly apt to manifest itself in advanced Bright's disease. When uræmia is present, and the patient is unconscious, convulsed, and ultimately comatose, there is œdema of the brain, or serous effusion. It may be compatible with recovery, or pass on to death. For the pressure of the effusion may squeeze all function out of the brain.

Such, then, are maladies which truly belong to the circulatory system, yet which are constantly spoken of as related to the brain—which they certainly are, but not primarily. The brain substance is compressed by the presence of the intruder within the skull. The space being strictly limited and already fully occupied, the intruder can only exist at the expense of the original occupants.

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CHAPTER XXIX.

THE NERVOUS SYSTEM.

A NEW-BORN infant is a puling, weakly creature, which can do nothing for itself, requiring watchful care and assiduous attention for its preservation. 'Once a man and twice a child,' is an old adage. Just as there is a process of evolution of the brain as the child waxes, and acquires first the elementary arts of talking and walking, and then goes on in development; so there is a withering and waning of the powers in age, till at last a helpless bedridden condition is reached—a true involution of the nervous system. Anatomical correlations accompany this evolution and involution. The brain-cells of the infant are almost tailless, that is, they contain inherited matters, but there is no communication betwixt cell and cell. As the brain develops tails appear; and in the brain of the adult these tails grow and cross, and put cell into communication with cell, till a perfect network of cells and connecting tails can be seen when a section of the brain cortex is placed under a microscope. These are the anatomical substrata of 'trains of thought' of 'associated ideas.' When the memory begins to fail, a man says of something, 'I know it, but I cannot call it to mind just at present,' and after a while says, 'I have found it.' The connecting tail of direct communication has become worn out; and a circuitous route to that cell in which the matter is lodged is essential to the act of remembrance.

It is as though a traveller journeying on the highway to a certain town finds a bridge has fallen in, and so the way is barred; he turns down some remoter country road and reaches his desired goal by a longer and more tedious route. Further, in the aged, where brain-failure has been marked in life the brain-cells are found denuded of tails, presenting a smooth rounded outline

looking like a club on The cells have once more become tailless as in early infancy. (As this view may seem fanciful and far-fetched to some readers, I may fortify my position by referring to Dr. Wilks's work on 'Diseases of the Nervous System.' In discussing the connection of mind and matter, he says: 'It is impossible for us to see a physical process as of a motion in our brain-cells, changing into a mental one, as the latter is altogether subjective, but it does not follow that there is not a material movement of the kind, which results in what we call consciousness.' He quotes from Dr. Draper and Oliver Wendell Holmes, both of whom have upheld the view that 'the starry brain-cells' are the seat of 'microscopic photography.' The latter says, 'Memory may, therefore, be a material record, and the brain, scarred and seamed with infinitesimal hieroglyphics as the features are, engraved with the traces of thought and passion.' Dr. Wilks concludes: 'Of course this is all speculation, and almost as unintelligible as any other theory which attempts to explain mental processes by physical changes; but if there should be any truth in it, we might further observe that there are reckoned 600,000,000 grey cells in the brain, which would allow fifty every minute in a long life to receive impressions.'*)

We know at least that the brain-centres cannot communicate with the periphery, if there is any block in the communicating nerve-fibril tracks. When the backbone is broken and the spinal cord is pressed upon, all power and sensation in the parts below the fracture are lost. So a man has 'phantom limbs.' On a cold morning a man will complain of feeling a cold aching in his left little finger—his left arm having been amputated years previously. An impression is received in the brain coming along the nerve-fibril which ran to, or rather from the little finger, and so is referred to the little finger when such member no longer exists. As there are recognised nerve-tracts in the cerebro-spinal nervous system, so there are these microscopic nerve-tracts in the brain; only we have not yet become equally familiar with them. In the nervous arrangement there is a microcosm within a macrocosm.

* Those readers who wish to see these caudate cells, and form some idea of these 'starry brain-cells,' and connecting tails, will be able to do so conveniently by procuring a little work by the writer, 'Animal Physiology for Schools,' published by Isbister and Co., 56, Ludgate Hill.

Special senses begin to give out first. The sight is dimmed, and spectacles become necessary. Or the hearing fails first, and the individual is deaf; one perhaps only hard of hearing, while another is stone deaf. We know less of the failure of taste and smell. The hand forgets its cunning, while the step loses its elasticity; locomotion is impaired, and feats of agility are no longer possible. Waning power shows itself everywhere. '*Non sunt vires in senectute,*' wrote Cicero. A process of withering is going on. The intervertebral cartilages are absorbed, and the back becomes rounded instead of being erect. The bones become more brittle, the muscles shrink. So it is with the nervous system. There is an obsolescence going on in it. This is effected by a development of the connective tissue (or packing material) with a reduction of the true nervous elements. The nervous tissue shrinks, and there is some fluid in the perivascular spaces belonging to it. The walls of the bloodvessels supplying the brain become harder and more brittle; sometimes more, or less, obstructed by atheromatous plates growing on their inner wall. On section the rigid arteries gape, looking like sections of goose-quills. These brittle arteries are liable to snap, giving apoplexy, as we have just seen. But there are also distinct brain-maladies set up as the outcome of this combined condition.

There is waning power, which manifests itself at first in a manner somewhat different from what might be expected. The highest centres are the last to be developed and the first to go. The process of involution starts with the highest qualities of judgment—by paring them down. The individual begins to manifest preferences, likes and dislikes, instead of the once sound judgment. There is very commonly, too, a development of self-confidence—as if the powers were waxing stronger, instead of becoming feebler. There is an impatience of contradiction, as if this necessarily involved a doubt about their capacities, in persons in this condition. They become more susceptible to obsequiousness and flattery. There is an element of wilfulness present, and an inclination to take their own way at all hazard. There is, too, a suspiciousness of those who do not implicitly believe in them, or agree with them; while they are easily misled by those who cajole them. These modifications of the mental powers, this impairment, is spoken of as senility. This senility is the bane of

the system of presbyters, or elders. Where a number of senile personages act in concert, their conduct is usually such as to demonstrate what has just been said above. The mental moods come out plainly; as is seen in the facility with which a good-looking young matron will turn the committee of an institution round her finger—provided that committee consist exclusively of grey, or white-headed men. It is exemplified in self-electing oligarchies of senescent persons, as the Royal College of Physicians of London for instance—which is little removed from an intellectual mummy swathed in rags and cerate. It is often markedly present in the chairman of a Board of Guardians, or chairman of Quarter Sessions. When possessed of power, senescence is apt to reveal itself in unfairness, or loss of judgment—in partiality that is. If to this be added a gouty taint, especially if there be alcoholic indulgence too, there is a mental attitude produced which seems to find a positive pleasure in torturing those in its power. Indeed, such an individual is a perfect contrast to those calm considerate old people one comes across, who seem to devote the remainder of their days to making others happy. And there is no one who takes a more charitable view of the shortcomings of others than those old people whose own lives are unstained by vice or folly. Senility is not a mere question of time or years. The mind is more impaired in one person at seventy than in another at ninety. Dotage, as the mental impairment of the aged is termed, shows itself comparatively early in some persons; and an old person is often found quite fatuous, while the bodily powers are fairly good, and the health excellent. While in others again, there is a complete break-down of the physique, while the mind remains clear and judicial. The failure of age indeed manifests itself variously in different persons.

Softening of the Brain.—A premature dotage is seen in persons who are the victims of what is called ‘Softening of the Brain.’ (Before proceeding further, an explanation is desirable. The term ‘softening of the brain’ has been, and still is by the bulk of the profession and the laity, applied to the condition about to be described; while among pure pathologists it is restricted to localised areas of softening—due to a plug, or embolon in the nutrient artery of each, or other cause of local malnutrition). Softening or Ramollissement of the Brain is a term applied to

general brain impairment, which is not rarely really caused by the opposite condition of induration, or hardening—spoken of as disseminated sclerosis. Putting aside the pathological aspect of the subject, and keeping in view only its clinical features, softening of the brain may thus be described. A man usually over fifty, a hard worker, begins to find that an error creeps into his calculations; his speculations begin to go wrong, or his columns of figures do not add up correctly. Or he forgets his appointments. He finds, too, that his work begins to feel harder, and perhaps his sleep is not so good. He sees his doctor, who advises a holiday and rest. This is taken, with the result that all is as of yore, and the mind regains its self-confidence. But after a time that 'missing leaf' (as one City man happily termed it), begins once more to crop up; and the error in the calculations to betray itself. The individual does not like the idea of 'giving up' or 'being shelved,' and struggles on; with what inward feelings is best known to himself. If he can 'take it easy,' and partially retires from his work or duties, an arrest in the downward progress may occur, and the condition be one of *in statu quo*; and the individual enjoy life so long as there is no tax upon the brain, on which the impairment reveals itself. Unfortunately, too frequently the condition steadily advances, accompanied by financial difficulties caused by losses made before the brain-condition becomes suspected. Straited means and a failing brain often go hand in hand. There is little of the caprice of dotage, but rather impaired power; with irritability and exalted sensitiveness to sounds, as if the patient could not bear them. There may be abnormal sensations, some pricking or formication, some numbness in the limbs, or swimming in the head. The memory is invariably impaired. The condition deepens until the person becomes quite childish, or fatuous; and the intelligence seems a blank—there are indeed a great many leaves missing in the book! There is loss of muscular power, a growing palsy, with or without spasms or convulsions. It is no uncommon thing to meet such a person being wheeled about in a Bath chair.

It may be well to set against this 'softening of the brain,' what Dr. Da Costa terms 'Exhaustion of Brain Power;' and by so doing the family resemblance betwixt it and the early

stage of brain-softening will at once be recognised. Dr. Da Costa thinks it is 'encountered among professional men, or those engaged in laborious literary undertakings. This sometimes comes on suddenly, with signs like those of collapse; more generally it is slower in its development. Its manifestations are a slight deterioration of memory, and an inability to read or write, save for a very short period, although the power of thought and of judgment is in no way perverted. Nor is the power of attention more than enfeebled: the sick man is fully capable of giving heed to any subject, but he soon tires of it, and is obliged from very fatigue to desist. He passes sleepless nights, is subject to ringing in his ears; cannot bear much exercise; is troubled with irregular action of the heart, with a frequent desire to urinate, and with neuralgic pains in the face, or a feeling of soreness in the head; but he does not lose flesh, and his digestion is uninjured. Many remain in this condition for months, and then slowly regain their health.' There is in brain-exhaustion a more simple, a purer lowering of power than in early brain-softening; otherwise the two are much alike. And the question might be raised: 'Is not at times brain-exhaustion an early stage of brain-softening?' The two are sufficiently alike to make rest in either an imperative matter; lest a more advanced condition may become established.

At other times the decay of the nervous system in elderly persons assumes another aspect, and has other features. There is not such marked impairment of the intellectual processes as there is decadence of the motor processes. The condition is one of cerebro-spinal sclerosis, spoken of commonly as 'creeping palsy.'

Creeping Palsy.—Here there is loss of decision in the step, as the first symptom. The gait is altered: a languor seems to fall over the legs. The step grows shorter. Then the feet are not lifted, and the walk becomes a shuffle—like that of a man with loose slippers down at heel. The pace is slow. As the disease advances, the person cannot step out the length of his own foot, and progression is slow. By this time the intellect is usually affected, and there is a general untidiness in the dress. The clothes are unbrushed, and often soiled. The trousers may be imperfectly buttoned, or the waistcoat 'a button awry.' Yet the

individual can still chat about the weather and light topics, though the capacity for solid brain-work has gone irrecoverably. Finally, the individual has to keep the house, and commonly dies of pneumonia—that pneumonia which is so apt to cut off old infirm persons.

Paralysis Agitans.—Or there is another form of senile nervous decay affecting the motor area, and that is paralysis agitans, or 'shaking palsy.' Here there is a marked alteration in the upper limbs. The hands first are unsteady, then the shake is obvious and noticeable at a glance. The walk becomes rather a slow feeble run, the body being bent forward. The intellect is affected, and the individual is rather childish; while a sort of helplessness, with reliance upon others, is manifested. Sometimes the speech is affected, and the words are 'clipped;' or the utterance is thick, or drawling. Sometimes the patient feels heat, or numbness, or 'pins and needles' in the limbs. Paralysis agitans is a malady which runs a slow course. Sometimes a species of improvement sets in, which, however, never fulfils its promise. In some cases the head is the part first affected, and shakes more markedly even than the upper limbs; and perhaps this is more marked in women than in men. Sometimes the agitation becomes very general. The lower limbs may become so affected that the patient cannot stand. Not unfrequently the lower jaw drops, and permits of the saliva dribbling away—the fallen jaw shaking like the rest of the body. Sometimes the patient survives till a condition of great helplessness is reached, while the sphincters fail in their function, ere the sufferer is worn out. The shaking is always aggravated by any emotion.

Vertigo, or otherwise swimming in the head, or dizziness, or giddiness, is a distressing symptom frequently complained of by old persons. It has various associations, and may depend upon the heart, which falters, so that the blood-current to the brain is cut down, and the brain becomes unsteady, just as the gas flickers when the pressure is low in the main; while at other times it is connected with vascular fulness, and is the precursor of an apoplectic attack. But it is much more commonly the former than the latter, and is rather relieved by tonics, including digitalis, than by depressants; 'and, consequently, more benefited by measures adapted to improve the strength and promote the

circulation in the brain, than by a plan of treatment calculated to lower both.'—(*McLachlan.*) The character of the pulse, and the condition of the heart, will determine the line of treatment to be adopted. If it be accompanied by signs of debility, bodily or mental, then tonics are indicated. At other times, vertigo follows the suppression of some habitual discharge, as bleeding piles; and then purgation seems a rational line of practice. In some persons, vertigo is a persistent symptom, and 'gouty subjects are peculiarly liable to it.' At other times, it is linked with indigestion and constipation, and is greatly relieved by attention to these matters; while as an acute trouble, it is certainly frequently gastric in origin, and caused by food, improper in quantity or quality. Yet it is rare, however, in actual diseases of the stomach.—(*McLachlan.*) At times, it is no doubt due to spasm of the encephalic arterioles—set up by irritation in the viscera, or by impurities in the blood. The posterior cerebral lobes of the brain and the cerebellum are fed by the vertebral arteries, and these have special nervous connections with the viscera. This fact, together with another, viz., that the posterior lobes of the brain are the seat of subjective sensations, and of our well-being or malaise, stand in a suggestive relationship to each other; and we can readily understand vertigo from visceral conditions. As the cerebellum seems the seat of our relations to space (*Ross*) and our surroundings, the whole subject seems to hold together in a suggestive manner. At other times, there is a vertigo connected with the semicircular canals of the ear—where there is also some deafness, and a marked tendency to reel to one side rather than the other. This form of vertigo is termed *Menière's disease*.

It seems that vertigo is an outcome of alcoholic indulgence; especially if there have been actually delirium tremens; and is one of the troubles of old toppers. It is, too, found with epilepsy.

Epilepsy is rather a disease of early years than of the decline of life; though it begins to show itself again when old age is reached. It is not so marked by convulsive movements in elderly persons, and is of a quieter character altogether. An old person will have a 'fit' in church, but there is none (usually) of that convulsive struggling seen when the fit occurs in a young person. Sometimes a small twitch may pass over a group of muscles, but usually there is no spasm. Such attacks as true epilepsy, or 'falling

sickness, are distinguished from a mere swoon or fainting fit. When convulsions appear in an uræmic stage they are very serious, and as the coma deepens into death the convulsive seizures wane in energy. But those uræmic convulsions, however they may resemble epileptic seizures, have a pathology of their own, quite away from the genuine epilepsy of the aged. These last are due to unstable conditions of the motor centres, which partake of that structural impairment which spreads through the whole nervous system in advanced life. Their usual accompaniments are vertigo, confusion of thought (impairment of the intellectual area of the brain), and depression of spirits or irritability of temper (disturbance of the bodily-sensory area). Sometimes they occur at intervals for a considerable period, and when such is the case there is danger of the nervous system becoming exhausted, and the *status epilepticus* being induced and leading to death. Sometimes the brain-power generally becomes impaired, and the aged epileptic becomes silent and morose. At other times, as was the case with 'the Iron Duke,' the energies are unaffected to the last. In some cases the impairment in the motor centres is manifest in a languid unsteady gait.

Noises in the Ears.—These are a great trouble to many aged persons. They may, or may not coexist with deafness; but they are due to another cause than the deafness. The portion of the temporal bone in which is located the cavity of the internal ear is of dense hard structure, hence its name 'petrous,' or rock-like. Over this bone, on its inner surface, lies the internal carotid artery. When this vessel is unfilled and vibrates on the hard bone, then sounds are produced like the rushing of water—the noise of severe hæmorrhage. When the vessel is tense (the tight artery of granular kidneys) noises are produced, as whizzing, buzzing, or knocking. If the vessel be atheromatous this would be still more likely to happen. When full doses of quinine are given, then the noise may resemble the ringing of bells (cinchonism). In some cases it may depend upon some disturbance of the auditory apparatus itself. According to its cause, unfilled or tense carotids, so is its treatment. Digitalis in the first case, and a mercurial pill with a seidlitz powder in the latter, are indicated. At times, however, these noises in the head are very trying, and very intractable.

Paraplegia.—Just as a patient may suffer from paralysis of one side (hemiplegia) from injury to the motor centres of the opposite cerebral hemisphere; so he may suffer from paraplegia (paralysis of both lower extremities) from disease in, or around the spinal cord. The brain is comparatively rarely injured by disease in its coverings; while the spinal cord commonly suffers from disease in the structures around it. Placed in a long bony canal, it is liable to be affected by any injury to the osseous column. Any growth of bone within the canal presses upon the cord, and deprives it of its conducting power. Disease of membranes in that limited canal quickly affects the nervous column. The nervous structures themselves, too, are liable to disease. Apoplexy is rare in the spinal cord; but venous congestion is common. Whenever there is fulness in the abdominal veins the plexuses of the spine, and spinal cord are implicated. Syphilitic gummata may develop within the spinal canal, and compress the cord. Such is more likely to happen, however, in young than in elderly persons. According to the morbid condition on which it depends is the amenability, or intractability of paraplegia to treatment. At times paraplegia is hysterical; but that form is seen rather in young females than in old women. It is a curious fact (or at least asserted to be a fact) that if the tail-bone (os coccyx) be broken, there follows paralysis in both legs.

As to the course of paraplegia, it depends upon the cause in each case. Many paraplegic persons enjoy a fair share of interest in life, especially where the means of having an attendant exist. They can ride in a carriage or a Bath-chair, or an invalid couch, and so see much of what is going on around them. Of course they are very helpless; but frequently they are very active with their arms. Some draw and paint, and so find an interest in life, or they while away many a tedious hour with a book. Ladies do fancy-work. And all can talk and listen.

Whether the sphincters are interfered with or not, depends upon the seat of the disease, or injury. And the same holds true of the generative organs.

One-sided paraplegia is found when one column of the spinal cord is alone affected.

Sciatica.—Sciatica is well known as linked with rheumatism, gout, and exposure to cold. It may, too, depend on a load in the bowels.

It seems connected with severe exertion at the time when bodily degeneration is liable to occur (*Anstie*). It is due to true neuralgia in other cases; and commonly is the result of a neuritis, followed by effusion into the nerve-sheath—when the pain becomes less severe, and the limb is moved with difficulty, while sensation is impaired. Or it may have other associations, and be a part and outcome of disease of the nervous system above it, and then is intractable; especially when of syphilitic origin and long established. According to its origin must it be treated.

It is not generally known that elderly persons are liable to neuralgic affections, due often to gout, or waste-laden conditions of the blood. Romberg said: 'Pain is the prayer of a nerve for healthy blood;' and a very exquisite sentence this forms. Healthy blood depends on quality as well as quantity. The neuralgia of young persons is commonly due to poverty of blood. In the elderly the blood is unhealthy by the presence in it of waste matter in excess. Consequently tonics and hematics form the appropriate treatment of the neuralgia of the young. Depurative measures which cleanse the blood of the excrementitious matters in it, are requisite for the treatment of the neuralgia of old persons. When the blood has been cleansed, then tonics may be necessary—but not until then! A brisk purgative is often effective, especially when the sciatica is on the left side; and a generation ago croton-oil was greatly in vogue for the treatment of sciatica. The use of the hypodermic syringe is now common, and certainly gives relief. But such relief by morphia is not the cure of the condition upon which the sciatica causally depends. Fat in some form is always of service in the treatment of neuralgia, in young or old.

Vesical Irritability.—This is often a great cause of suffering to elderly persons of both sexes. It prevents their going into society; it may prevent many from going to church; it interferes with railway travelling, especially with trains which make long runs, and on railways where the comfort of passengers is not studied—and there are such railways. It is the plague of their lives with many old people. It is very apt to be aggravated by any vegetable tonic, as strychnine and quinine, for instance. It is best relieved by hyoscyamus or belladonna.

The opposite condition, or inability to empty the bladder, also

is common with old persons of both sexes, but mostly men. Sometimes the call is frequent because the bladder is not emptied. Incontinence of urine is apt to be found to be really due to a full bladder, much to the surprise of the patient (p. 166).

Strangury is a painful sense of desire to empty the bladder, with inability to do so. According to McLachlan it is 'very often produced by suppressed or retrocedent gout.'

Mental Derangement.—Not unfrequently the mind becomes specially affected in elderly persons, requiring their being placed under control. It is usually a harmless, feeble sort of insanity, with a tendency to depression. Excitement is rare. It may occur; but rather as an exhibition of temper, than anything else. The aged lunatic will be seen fumbling at the handles of the doors of a corridor, striving to get away under the impulse of a delusion, and be petulant from failure; but that is about all. Usually there are delusions with mental impairment. A lady may be under the impression that she has no dresses to wear; an old gentleman believes that he has lost his money, and is a pauper. Or there may be only such a monomania, and the general intelligence be good. Where there is no bodily infirmity as well, mental alienation in the aged is compatible with considerable length of days; especially with the care taken of their inmates in most asylums. Indeed, the lot of an old and insane person is by no means a hard one, whether in a private asylum or in the public institutions of the country—though he is often a piteous object in his infirmity.

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CHAPTER XXX.

DISEASES OF THE SKIN.

THE skin becomes liable to certain diseases as years accumulate. Nor can any surprise be felt at this, as the skin becomes profoundly modified in old age.

‘As years advance the skin gradually loses the delicacy, softness, high organization, and elasticity observed in the prime of life, and becomes dry, rough, tawny, corrugated, and scaly in old age. Those changes are partly owing to the absorption and attenuation of its different textures, the wasting and disappearance of the subjacent adipose and cellular substances, and of the progressive induration and contraction of its sebaceous and sudoriparous glands, the result of diminished vascularity and impaired organic and animal sensibility. Its important functions are thereby impeded, absorption and perspiration are interrupted; the lungs, kidneys, and liver are called upon for additional efforts to throw off the impurities retained in the circulation, which would otherwise be excreted from the cutaneous surface; and many diseases of these organs in advanced life are protracted by, if not due to, the inefficient discharge of its salutary offices.’ Such is the expression of Dr. McLachlan. With such changes in its condition no wonder if more marked changes amounting to actual disease are commonly found in it. As to the last matter, the maladies in other organs due to, or aggravated by the condition of the skin, this is certainly true as regards the kidneys. And with elderly and old persons a freely acting skin, when it is found, is always of good import. This is readily understood when we remember that ‘the constituents of sweat are those of urine.’ The imperfectly acting dry skin can afford no help to kidneys which are failing in their function.

Prurigo Senilis.—Itching of the skin is one of the troubles of the old ; indeed, Dr. McLachlan goes very much further, and says of *Prurigo Senilis*: ‘Embittering existence by the “maddening” itching that attends it, almost unceasingly harassing the sufferer, and sometimes, in its intensity, depriving him for weeks together of rest, it occasionally breaks down the general health, and fatuity itself is said to have flowed from it.’ Such is the statement of an authority whose language is ever sober, and who knew well what he was talking about. Such aggravated cases have not come under my own personal notice, yet I have seen *prurigo senilis* torture an old person desperately. Scratching gives some relief, but comparatively little ; and local applications are unsatisfactory. We know that itching of the skin is one of the phenomena of jaundice ; and we know that *prurigo senilis* is common with persons with gouty kidneys. In fact the liver-products—whether urine solids, or bile acids—when retained in the blood set up itching in the skin, as one of their consequences. Whether they accumulate in the skin, or not, it is impossible to say ; but about the fact there is no question. And certainly a blue pill at bedtime, and a seidlitz powder in the morning, will give magical relief in *prurigo* ; in some cases at least. Apple vinegar has been vaunted as being of great service in the relief of this condition. Where it is linked with renal inadequacy, and the accumulation of nitrogenised waste in the blood, as it commonly is, then the reduction of the albuminoid elements of the food, and the use of uric acid solvents, suggest themselves as a rational practice.

Pruritus Ani.—Sometimes the fundament is the seat of itching. It is sometimes so terrible as to be all but intolerable, and is said to have driven some of its victims to suicide. Its causal associations with the liver are well-known ; and the treatment spoken of above as good in *prurigo senilis* is useful in *pruritus ani*. Various sedative applications, as opium, aconite, borax, cucaïne are more or less useful : but perhaps the solution of corrosive sublimate is the most trustworthy.

Pruritus Vulvæ.—In women the external genitals are not unfrequently the seat of much itching. Some have become almost maniacal in consequence of the irritation. In young women, and, for the matter of that, older and even old women, a condition

amounting to ~~libiniphomania~~ is not rarely induced. Relief is sought which leads to self-abuse, which gives some temporary respite from the nuisance. Various and many are the measures which have been resorted to in this morbid condition. Where there is dryness of the parts, fomentations with warm water containing poppy-heads are indicated. An ointment of calomel and opium may be used after the fomentations; or a solution of corrosive sublimate. Borax of course is always worth trying. Hydrocyanic, or prussic acid is often useful. Chloral hydrate, or the bromides locally suggest themselves. So does cucaine. When the pruritus extends up the vagina, as it is apt to do in elderly women, it is more troublesome; and an aged woman, instead of being all but sexless, is tortured by sensations to which the ardor venereus of youth is but child's play. Here injections of water as hot as can be borne form the most soothing measure to adopt; and the water may be medicated by any of the agents just mentioned. Vaginal medicated pessaries are, too, of much value.

Where pruritus vulvæ is linked with the act of urination, then it is clear that the removal of any irritant urine which may remain on the vulva is indicated. Warm-water fomentations are good; and if the water contain some carbonate of soda, or borax, it is all the better. Lithates in the urine sometimes are the cause of the irritation. At other times the presence of sugar in the urine is the offending irritant matter; and very irritating it is with some women.

Herpes.—Old persons are not uncommonly attacked by 'shingles,' or *herpes zoster*. The sharp stinging pain (a North-countryman would use the word 'swidching') along the nerve tract is followed by an outbreak of small vesicles in clusters. These vesicles when fully developed attain the size of a split pea. The clear fluid in them first changes, and then dries up, and looks like a scab—indeed is one—which comes off in time, leaving the surface beneath red. Should these vesicles become ruptured a raw surface is left, which is apt to be very intractable to treatment. The patches, or clusters of vesicles run round one side along the track of an intercostal nerve, as a rule; but sometimes they go to the shoulder, and, if lumbar, down the thigh. The eruption is unilateral, and there is a vulgar impression that if shingles should

extend to both sides, the patient will die. The pain is very sharp, and the sense of heat with it marked. What is not generally known is that the stinging pain may be felt without any eruption. (Herpes is really a nervous skin disease.) Or at times the eruption dries up without any cessation of the pain. Once in the early days of my apprenticeship this occurred in a surly old fellow, a patient of my father's. Chancing to call one day (my father having told me to call and ask how he was if I was past the house), and inquiring how he was, I was saddled with the blame. No explanation that I was in no way connected with the case had any weight with him. He persisted to my father 'that it was all my ignorance;' and to the end of his days he held a most contemptuous opinion of my professional capacity. It was all my fault that the pain did not take itself off with its companion the eruption, in his opinion; and he stuck to it!

As a neurosal affection, herpes requires for its successful treatment vegetable tonics, quinine, and strychnine, with phosphoric acid. Citrine ointment, or white precipitate ointment are good; but a solution of corrosive sublimate best aborts the waxing vesicles, and dries up the full-sized ones very effectually. Shingles often attacks hale old men; and in one instance the patient was eighty-six, yet an active, vigorous old man; and it was the first time he had ever in his life consulted a medical man.

Eczema.—This is the commonest malady of old persons of this series, and gives frequently much discomfort, and always much trouble. It may be localised, or, less commonly, general. The front part of the lower-third of the legs is its most usual seat. But it may settle anywhere; not even excepting the scalp, and the sides of the fingers.

As an acute malady, it consists of an outburst of vesicles which do not carry with them the sharp pain of herpes. These dry up and disappear. But as chronic eczema, the disease extends deeply into the skin, a profuse discharge is set up, which irritates the surrounding skin, and deep and extensive chaps and fissures are found. There is no pain, but the itching is sometimes severe. 'In certain situations the pruritus is wholly unbearable, and excites the wildest paroxysms.'—(*Erasmus Wilson.*) At other times the discharge is not great, and is purulent, collecting into scabs. At other times it is not present at all, and the skin exfoliates in large

flakes. ~~No matter how it is,~~ or where it is, it is a great trial to the patient. 'That the eruption is occasional, and not unfrequently salutary there can be no doubt, and the cure of chronic eczema is sometimes succeeded, as in other cutaneous eruptions, by severe pectoral ailments, and still more alarming cephalic symptoms, vertigo, and apoplexy itself. The propriety of attempting its removal is therefore occasionally a question of no mean importance.' Such is the opinion of Dr. McLachlan; and the reader will not be surprised to learn that the worthy doctor holds eczema 'to be a common complaint in gouty habits.' Consequently, not rarely when the complaint seems yielding to treatment, a sudden aggravation of it may set in.

The great treatment locally is alkaline lotions, with opium, especially where the itching is considerable. As to the internal medication, it is that of the gouty habit—whether of the 'Norse' or the 'Arab' type. If the patient be of full habit, lithia or potash, or both combined, will give relief. If spare, then alkalis are not so well for him. Arsenic is useful in all cases. If the condition is cachectic, or the patient much reduced, then tonics and suitable food are indicated. Sometimes the consequences of curing the eruption are such that the patient wishes for it back again—however little he likes it.

Very old persons are sometimes troubled with scurf, or dandriff. While, if the health be badly broken down, lice may develop on the patient; and cannot be destroyed, even by the most scrupulous care on the part of the attendants. This used to be spoken of as 'the swarm;' and there are few parts of the country where there is not some story of an aged and unpopular magnate who is said to have died under those circumstances.

Ulcers.—The skin in old age is liable to the lesions called ulcers, which may attain a considerable size. Here the legs again are the favourite locality. They are divisible into two main classes: (1) the indolent ulcer, and (2) the irritable ulcer.

The indolent ulcer is liable to attain a large size. The surface is excavated, smooth and glossy, pale in hue, and sometimes there are a few granulations. The discharge is thin and scanty. Around the margin of the sore is a 'wall, dense, white, callous, and like a high ring of cartilage.' There is little suffering with it, and 'both sore and margins are comparatively insensible.' The

removal of this cartilaginous ring is the first measure to be adopted; and then strapping the leg from below upwards is the next. There are surgical matters of treatment which cannot be gone into here.

The irritable ulcer is shallow and superficial, and its edge thin and everted. The discharge is thin and acrid. 'Pain is constant; always considerable, often excessive.' It is linked with constitutional states. 'Along with the ordinary symptoms of the constitutional form—more especially restlessness, want of sleep, loss of appetite, emaciation, and general disorder of secretion—there is often a remarkable peevishness of temper unhappily combined.' Is there any room for wonder that the irritable ulcer is linked with gout? A friend of mine in my early professional days once asked me about an old lady, a patient of his, with an irritable ulcer. Like a certain other female—who 'had an issue of blood for twelve years, and had suffered many things of many physicians, and had spent all that she had, and had nothing bettered, but rather grew worse'—she had for eighteen years sought relief from the most eminent surgeons at home, and on the Continent; but without avail. Bearing in mind what my old surgical teacher, Joseph Bell, had said about the frequency of the irritable ulcer in gouty persons, I suggested potash and colchicum. Under this and simple water-dressing, the ulcer healed in less than three weeks.

The relations of gout to suppuration are such that an antagonism almost seems to exist. Yet recently, in a case mentioned before, an old lady had for months suffered from a cold abscess of the right hip, another in her wrist; both of which had burst and discharged their contents, and then stubbornly remained *in statu quo*. There was also a bag of pus at the insertion of one Tendo Achilles. Various lines of energetic treatment had failed to produce any effect. It was clear that there was some special condition underlying this obstinacy; and it struck me it was gout. She was put upon potash and colchicum, with small doses of opium, with the gratifying result of immediate improvement setting in and being maintained, though the healing process was slow. The ulcers on the hip and wrist entirely healed over, and the foot was well enough for her to be up, when she took some malt-liquor—plus an east wind—with the result of upsetting

her liver, with lithates in her water, the re-opening of one ulcer to a slight extent, and the threatening of a pus-formation at one of the sterno-clavicular articulations. The condition was relieved by a mercurial, and the alkali and colchicum. These cases show, that (despite the fact that gout, much as it haunts the articulations, rarely leads to matter) there are instances where suppuration is associated with gout, or lithiasis. And also demonstrate the wisdom of the words of the late Friedrich Theodor von Frerichs, M.D., which are to be found at the back of the title-page of this work.

The treatment of irritable ulcer is that of local sedatives, amidst which pencilling with nitrate of silver is one; and the general treatment. 'Whatever the local management, let it never be forgotten that an indispensable, and often by far the most important part of the treatment, consists in remedies directed to the systemic condition. If this be neglected, no local applications will be of any permanent avail. The ulcer in most cases has sprung from, and is maintained by, an evil state of constitution, and only by eradication of that origin and maintenance can it be removed.'—(Miller.)

CHAPTER XXXI.

OBESITY.

MANY persons are actually too stout either for health, or comfort ; some persons worry themselves about their corpulence without occasion. There are families of which all the members are bulky, and weighty ; while in other families all are slight, and light. You can no more reduce the former to the dimensions of the latter, than you can feed the latter to the proportions of the former. In many cases the individual might as well worry himself about his stature.

But granting all this, there still remains a great deal of superfluous weight in the world—of which its possessors may well wish to be rid. There is that kind of corpulence associated with the obese pothouse-keeper where large quantities of food, larger quantities of liquors, and the lack of exercise have transformed a light man into a heavy man ; and impaired his life from an insurance point of view. Much the same thing is to be seen in brewers' draymen, with their thick limbs and red faces ; who do so badly in hospital if they meet with any accident of moment. All have seen it in corpulent ladies who live well, and lie warm ; who take carriage exercise only, and are scant of breath if they climb three stairs. In all these cases there may be a superabundance of fat in, and upon the heart ; but that is of less significance than the general condition. The blood is always charged with nitrogenised waste, whether the urine be clear or laden with lithates. Such persons are fed to repletion, and like the lazy overfed monk of old, they ought to have less sleep and more exercise. They remind one of the fat Italian priest, the victim of gout, who was taken prisoner by the Turks and converted into a galley-slave. This position might not be an enviable

one by any means; but he regained his health and lost his gout as the outcome of his new regimen. Some approach to his later condition would be desirable with many stout persons. The large, lazy, corpulent woman, whose lethargic state always suggests the idea of a fat cow chewing her cud, is of the lymphatic diathesis; and the type of obese people. If she be a mother she was liable to floodings at her confinements. When she reaches the menopause she always falls into feeble health, has a 'weak heart;' and not uncommonly does not long survive that epoch in her existence. All such persons are of 'too full habit,' to use a rather antiquated expression, and too corpulent.

On the other hand, there are bulky families, broad-built, massive, muscular, and well-covered with fat. Such persons are not lethargic; but, on the contrary, are often very active, especially mentally; and when a fat man is lively he is usually a very active-minded person indeed. He will certainly not be of this kind if his corpulence is the blended outcome of repletion and want of exercise. In such naturally heavy persons, corpulence is not altogether undesirable; but they may weigh a couple of stones more than is good, or comfortable for them, and it becomes desirable to reduce them.

Before discussing the different plans in vogue for the treatment of corpulence, it may be well to say a few words about the production of fat in the body. Fat is mainly formed by, and from the saccharine elements of our food. The negroes of sugar plantations, when the sugar-cane is ready to be pressed, are allowed unlimited quantities to chew (on the principle 'thou shalt not muzzle the ox that treadeth out the corn'); and though the labour is severe, they grow fat and sleek at this time. The excess of the saccharine elements of our food is stored up as body-weight, mainly as subcutaneous adipose tissue; but not solely. Anyone who will take the trouble to look into a butcher's window will see that the red flesh of the fattest meat has much fat interspersed throughout it. And all cooks know the superior quality of the lean meat which has come from a well-fatted animal. Compare the tongue of a well-fed ox with the lean tongue of the reindeer, and the presence and absence of fat will soon be apparent. Of the development of fat from the carbohydrates of our food, there can be no doubt, when these are taken in excess of the body-

needs. It is also probable that fat to some extent is linked with the albuminoid elements of food ; but this is a matter still *sub judice*. As to the formation of fat from the fatty elements of our food, we are in the dark. Of course it will at once be pleaded that persons get fat on cod-liver oil. Certainly they do ; but there is a fallacy in that argument. If the oil be burnt to maintain the body-temperature, the carbohydrates may be stored as fat. Fat is essential to healthy tissue-formation, and the tissues of the phthisical improve on cod-liver oil. Of that fact there can be no question. But all the same it is very doubtful if fat be deposited in the body as fat. Recent physiology can say nothing ; what it points to is fat going (1) to build up healthy tissues, and (2) being burnt as body-fuel. With such conclusion harmonises the clinical fact that fat need not be prohibited in the dietary of the corpulent : a very important matter.

Before proceeding with what is the appropriate dietary for corpulent persons, a few words may be said about the reduction system now known as 'Bantingism.' Some twenty years ago Mr. Banting reduced himself some two stones, much to his comfort and delight, by a plan suggested to him by a medical man, viz., by avoiding all hydrocarbons, and living upon albuminous food only. No sugar, no starch. So far so good. But unlimited albuminoid food carried with it the dangers involved in albuminoid excess, —which have been so insisted upon all through this work. Such excess of albuminoids overruns the capacity of the liver to deal with it, and then follows in its wake renal disease. The danger of Bright's disease being produced by Bantingism is no theoretical or fanciful one. It is a real, practical danger ; and hundreds of corpulent persons have gone to a premature grave from following the unsound principles and dangerous practice initiated by Mr. Banting. Mr. Banting himself was aware of my objections to his views, and vowed he would come over to the West London Hospital some day and have it out with me. But he never carried out his project, so I cannot give his defence. Nor can I guess in what it would have consisted. Possibly he might have pleaded his own case ; but as it is not on record of what malady he died, he may possibly have fallen a victim to his own views. A swift case of lithiasis complicated with albuminuria came under notice a little time ago, where a corpulent man of sixty, in fair health,

was induced to adopt Bantingism merely as a whim. The cause and result were too closely linked to leave any doubt that the attempt to transform himself into a carnivorous animal led directly to his death. Probably his kidneys were the seat of some granular change when the alteration in his dietary was commenced. From this, and other cases, the danger to the kidneys from an excessive albuminoid dietary is, to my mind, clear and unmistakable; and the adoption of Bantingism by persons already the subjects of incipient Bright's disease a very hazardous practice indeed.

How, then, may the reduction be safely attempted? In one case well-known to me about the time Mr. Banting's system was attaining its first notoriety, the individual reduced his weight four stones and a quarter in seven months, without apparent detriment to his general health; but with the result that consolidation of the apex of the left lung came on,—whereupon the attempt was carried no further. Here the dietary consisted of pickled herrings, Dutch skim-milk cheese, brown bread toasted, and vegetables, including potatoes; all in strict moderation. This was a much less risky plan than Mr. Banting's; but then it was infinitely less attractive. It involved self-denial, which Mr. Banting's plan scarcely does. The consolidation of the lung told that the plan had been carried quite far enough; and further partial starvation would in all human probability have led to the morbid lung-tissue breaking down, and the individual perishing prematurely of self-inflicted phthisis. Louis Cornaro has left on record an autobiography written after he had passed his hundredth year, in which he tells of the evils which were fast overtaking him, when he put himself on a dietary consisting of twelve ounces of food, mainly vegetables, and fourteen ounces of light wine, daily; on which he lived in good health for fifty-eight years (p. 110). Mr. Wood, a miller of Billericay, for eighteen years lived on sixteen ounces of ship-biscuit made into a pudding daily; by which means he reduced himself some ten stones, and was 'metamorphosed from a monster to a person of moderate size; from the condition of an unhealthy decrepit old man to perfect health, and the vigour and activity of youth.' Other cases are on record where the reduction of bulk was more remarkable than in the case of Mr. Banting; which, with those given above,

show that a moderate amount of starchy food is not objectionable in a reduction regimen. Indeed, where the food is mainly starchy, as with the poorer Irish and the Hindoo, the amount that must be taken to maintain the health is very large. A dietary which contains a moderate amount of farinaceous matter, with vegetables and fat, is that which is likely to procure a reduction in the bulk of the obese with the least possible drawbacks.

The most recent writer on the reduction of corpulence is Professor Ebstein, of Göttingen, who has evidently given considerable attention to the matter, and who sums up as follows: 'The permission to enjoy certain succulent things, always of course in moderation, as, for instance, salmon, pâté de foie gras, and such-like delicacies, reconciles the corpulent gourmet to his other sacrifices. These consist in the exclusion of the carbohydrates. Sugars, sweets of all kinds, potatoes in every form, I forbid unconditionally. The quantity of bread is limited at most to from 3 to 3½ oz. a day, and of vegetables I allow asparagus, spinach, the various kinds of cabbage, and especially the legumes, whose value as conveyers of albumen, as *Voit* observes, is known to few. Of meats I exclude none, and the fat in the flesh I do not wish to be avoided, but, on the contrary, sought after. I permit bacon fat, fat roast pork and mutton, kidney fat, and, when no other fat is at hand, I recommend marrow to be added to the soups. I allow the sauces as well as the vegetables to be made juicy, as did Hippocrates, only for his sesam oil I substitute butter.' This scheme of Professor Ebstein is sound and sensible; and the following extract from the letter of a corpulent Scotch doctor tells that it is effective:

'I carried out Bantingism most vigorously, and not only lost two stones in weight, but very nearly my life. Begbie insisted upon my stopping it. While upon that plan I felt languid and good for nothing; and in order to get along at all had to take no end of wine and spirits. I soon got heavier than ever, and ultimately weighed upwards of twenty-one stones. When in Edinburgh, at the University Tercentenary, I first heard of Ebstein's views. I cannot tell you what my weight was, but certainly I would weigh over twenty stones. I started, and followed Ebstein's directions *to the letter*, with the result in a few months that instead of every exertion being burdensome, I can

walk with perfect comfort ; and not only so, but I could soon run up long steep stairs, and now I can dance reels as easily as I could do fifteen years since. I feel very much more comfortable. I never touch sugar, although lately I have taken potatoes and some lean meat, as I found I was diminishing my weight too rapidly. My appetite was failing a little, but now that I have somewhat relaxed the Ebstein regimen, I am all right again. The last day that I was weighed was December 5th, when I was seventeen stones seven pounds. I am now in my sixtieth year.'

This is a fairly satisfactory testimony to what may be done ; and the worthy doctor mentions Ebstein's name in his prayers—when he says them. Certainly he is an altered man, and that too for the better. As to his activity, it is really wonderful compared to what it was before he commenced this regimen. I am in a position to say that all this has been accomplished without any detriment to his health, or impairment of any organ. While the substitution of fat for lean meat will prolong his days ; though granular kidneys have marked him as theirs, and will drop him (in all probability) into his grave some day,—though not near at hand I hope. Certainly Ebstein—who oddly enough is treading in the footsteps of Hippocrates—is a truer prophet for the obese than Mr. Banting : and his plan is free from the obvious drawbacks of Bantingism. But a certain restriction in quantity as well as in kind of food is essential to success ; and self-denial must be practised.

There is a certain fatness, however, seen in females at the change of life which has features of its own. Just as some girls at, or soon after puberty become fat and pasty, and even chlorotic ; so some women at the end of their reproductive life,—as if the adipose tissues waxed at the expense of the muscles, become corpulent ; and not only that, but weak as well as fat. There is often such breathlessness as to suggest some disease in the walls of the heart ; and in some cases there is actually much debility in the heart, with dilatation of its chambers. In some cases the condition goes on unrelieved until the patient sinks of exhaustion, or with the symptoms of a failing heart. Whether at times there is superadded a taste for alcohol, is a matter on which experience may differ ; but my experience has been somewhat mixed. The debility forbids the taking of much exercise, and

the cases are often intractable. If the patient be put upon a dietary rich in albuminoids, there underlies this the risk of injury to the kidneys. If the dietary be not sustaining, there is the risk of further debility. Great attention to the regimen is necessary, and the medicinal treatment should consist of tonics and hæmatics. And hæmatics do not consist of iron solely. In one case which came under my notice a few years ago, the lady grew fatter, and paler, and weaker under a course of steel. She suspected Bright's disease, and certainly was of gouty habit. When she consulted me the necessity for first cleansing the blood before giving iron, was firmly impressed upon me. I put her upon strychnia and potash, and at once she began to improve. The fat disappeared, and the colour came back to her cheeks, while her power of locomotion was greatly improved; and she became restored to her wonted health and appearance without any resort to chalybeates. Some years later she was seen well and strong, and in excellent spirits. Here the fatness and the breathlessness were equally and alike due to defective oxidation from a deficiency of blood-corpuscles; and the building up of blood-corpuscles involves the removal of the specific taint in the blood (when such exists) quite as much, or more, as the furnishing of iron to the blood; and certainly must precede the administration of chalybeates.

CHAPTER XXXII.

GEROCOMY.*

FROM what has been said in the preceding chapters it will be quite clear to the reader that the management of elderly and aged persons, hygienically and medicinally, involves some special knowledge—as well as consideration for them.

In the first place it must be ever remembered that elderly persons, however infirm or decayed, 'have had their day;' and that, however shorn of strength they may be in body or mind, they deserve consideration at our hands, and even if childish are utterly different from the child who is being taught the lesson of obedience. However childishly wilful and capricious persons may become in 'second childhood,' it is neither right nor proper to address them in language suitable enough for a child. It is to me a very painful spectacle to see the aged intellect—robbed of its whilom strength, and painfully conscious of its weakness—chafing under the coarse admonitions of a younger intellect, far beneath what it itself once was, as it feels acutely; but in all its early vigour. Its fear is mingled with a species of contempt; but it obeys. The attendants upon aged persons, whose minds are infirm, should be chosen with special reference to their power of sympathy, and their capacity for consideration. Of course, all observant medical men are decided upon this matter, and set an example in their own behaviour towards old people.

Often, too, old persons are irritable, and require solicitous attention without noise or fuss. Irritability is the precursor of extinction in all nervous tissue, and inability to bear noise, etc., is found in cases of premature mental failure. Perhaps, too, at

* (Gr. *Geron*, an old man, and *komeo*, to take care of.) That part of medicine which treats of the proper regimen for old people.—*Ogilvie*.

times old persons are exacting ; but we must bear with them— as we hope younger persons will bear with us when we in turn become old and frail.

There is a great difference in the dispositions of old persons, not only in their natural character, but in their acquired traits. Old people whose lives have been pure are the kindest and most charitable people in the social hive. On the other hand, where the walk in life has been crooked or vicious, probably no critics are so keen-sighted and quick to detect any impropriety or failing, or are so suspicious of others. The old grandame, who has not been able to blot out all memory of her own youthful escapades, has a keen scent for any possible or potential misconduct in her juniors. Mrs. Transome, when an aged woman, 'once more lived through the passions of her youth in her fears.' Does anyone who has read 'Felix Holt' suppose that any *lâche* in a tenant's daughter ever escaped Mrs. Transome's lynx-eyed vision? Old men who are suffering from the consequences of the sins, or vices of their early years are not specially tolerant of what they regard as 'the folly of youth.' When they are tortured, as by a urethral stricture, they have no longer any sympathy with that early indiscretion in which it took its origin. Indeed, they would have forgotten all about the folly, if it were not for this painful remembrancer jogging their memory a good many times a day. They bitterly look on at the initial proceedings of what—they have learnt—is a long chain of untoward consequences, and say with the Ettrick Shepherd :

' In joy and in glee
Your revels shall be,
Till a day shall arise that we darkly foreseee.'

And indeed a great many of the troubles of elderly persons, especially among the more affluent classes, are due to early passion on the one hand, and excess at table in middle-age on the other. The first gives stricture ; the second, those bowel troubles which often embitter the existence of the aged. No wonder then their 'winters of memory' make them unsympathetic with their juniors 'sowing their wild oats.' It is, however, comparatively rare to find old persons troubled with the later consequences of syphilis. It was all very well for Prof. Sigmund to declare to his class at Vienna, 'A man may acquire syphilis and be cured of

it, he thinks. I tell you nothing of the kind. If a man once acquires syphilis he dies syphilitic, and at the day of judgment his ghost will have syphilis.' This may be true, but I doubt it. The low class of Viennese, old and poor and broken in constitution, may carry syphilis to their graves; but such is not the case in Englishmen of good natural constitution, and well nourished. Any more than the prognosis of valvular affections of the heart in well-to-do English private patients is that of the same maladies in the Vienna hospital patients. It is needless to point out that there are a large series of geronic troubles from which old ladies are free.

Food.—From all that has been said, it is obvious that the food of the aged should not consist too largely of albuminoid materials. It is the more necessary to insist upon this, as the idea is so widespread, and so deeply rooted that the flesh of animals is at once the most digestible and the most sustaining of food. The lesson preached all along in these pages is that of the many dire consequences of a blood laden with nitrogenised waste. The tissue-repair of the system in age does not require much albuminoid material. A little proteid food will meet that actual necessity. The rest is *luxus consumption*. It was all very well for Isaac to crave after savoury meat before he died; the very fact shows that he did not often get it; and that the eating of this meat was the preparation for an important family ceremony. The pottage for which Esau bartered his birthright (a mess of lentils and vegetables) was in all probability the staple food of the primitive people. Indeed, Canaan was not looked to as a country of beeves and butcher's meat, but of 'corn and wine,' and as 'flowing with milk and honey;' while the excursions into Egypt from time to time tell of a corn-eating race. Bread and milk and honey formed an admirable dietary for longevity,—especially with a dyspeptic race.

The food of the aged, indeed, should be once more the food of the nursery. Farinaceous matters with milk, or messes with lentils, *i.e.* caseine, either in animal or vegetable form; the most easily assimilable of all forms of albumen; possessing, too, the least tendency to the formation of uric acid. Again, let it be insisted upon that a great deal more albuminoid matter than the system requires can be eaten with impunity, so long as the liver retains the power to convert the excess into soluble urea. But

when this power is waning, and a degraded activity takes its place, the tendency is to form uric acid or urates; alike but sparingly soluble. Consequently, if more meat be taken than the system requires, then the proportion of waste matter in the body must be abnormally large. It may seem unnecessary to insist upon this again and again *usque ad nauseam*: but 'the heart of man is deceitful above all things and desperately wicked: who can know it?' Jeremiah found: and so is his palate! Bread and milk and honey form a typical meal for aged persons. And one old gentleman I knew well in my early days as a bright nonagenarian, active alike in mind and body, lived largely on this very food. To many, of course, such a dietary would be so monotonous, they would probably decline eating altogether; still, it is a type of what the dietary ought to be. Farinaceous materials, porridge, hominy, shredded maize, the A B C cereals, the Farina Cocta, boiled with milk, should form the first item of breakfast. This might be followed by bread and butter, and honey or jam. Then luncheon should consist of a little fish, with some real melted butter, or some well-mashed potatoes in which the cook has not been a niggard with her cream; followed by a milk-pudding, and some fruit. At tea, a cup of tea with good milk or cream, and a biscuit, may be taken. Then dinner should run on something like this line: A good soup with cream or marrow in it, rather than strong stock; a sweetbread, or fish, a little chicken or game; a milk-pudding, or a cream shape; with a nip of cheese and a digestive biscuit. Wine, 'the milk of the aged,' need not be prohibited. A glass of Port, Madeira, or Marsala (according to the means) may be taken at luncheon, and double that quantity at dinner. If the person is a teetotaler, then some of the tonic drinks now on sale may be taken. In cold weather, on getting into bed, some treacle posset is indicated, or some equivalent. Then there arises the question of something in the night. A little hot milk with some Mellin's Food, or Malt Extract in it, may be put into a hot-water jug with a lid to it, and this be covered with a stout 'tea-cosy,' in the bedroom, so as to be at hand in the middle of the night. The 'cosy' will retain the heat, and by such means all taint of the bedroom is obviated. Such would be an ample dietary of suitable materials. Better than 'the flesh-pots of Egypt!'

There seems to me too little fruit as a rule allowed in the dietary of old persons—and young ones too, some would say. Perhaps a considerable quantity of fruit to one unaccustomed to it may derange the bowels ; but then it comes within the limits of human possibilities to avoid this. A certain quantity of fruit daily would be good, and would keep the bowels open. In summer and autumn fresh fruit is available ; in winter and spring there are the store fruits, dried fruits, and tinned fruits—much superior to tinned meats, and the ‘apple-rings.’ Or fruit can be stewed and served up with milk-puddings. This would not add much to the cook’s labours ; but it would diminish the necessity for physic—if not the doctor’s calls ! As to pastry, and meat, they are unsuitable : the first from the difficulty of its digestion, the latter from the inability to get rid of it in its waste form. Such meat as is taken should consist of white meat, fish or fowl, and game. Fat is often repugnant to the palate, but it is capital ‘fuel-food’ ; and that is what old folks mainly require. They do best with it (fat) in milk : though Ebstein’s notion of marrow in soup is not a bad one. There exists no objection to it so far as the stomach will tolerate it. Indeed, the food of the aged would present no great difficulty if it were not for the gustatory nerves of the palate ; but these are important matters when the terminal twigs of other peripheral nerve-endings are losing their sentient power ! The organism has comparatively little to live for—as to sensuous matters at least.

One great trouble with elderly and aged persons is the tendency to flatulence. And this must be borne in mind in the culinary arrangements. Seasoning is a great matter of the cook’s craft. Chefs know it ; but the family cook does not. The latter, who delights in ‘plain joints—roast and boiled,’ is too often utterly unfit for her position. Her sense of superiority in knowing what is good, and proper, is often but the confidence of ignorance ; and the British cook is the most prejudiced of her race. She is fond of her salt-box, but is sparing of her condiments. If anything has to be prepared for an invalid, her capacities are taxed, and her products are unsatisfactory ; and the day is not far distant when, if anything of this kind is required, a junior female member of the family must prepare it, as in the days of yore. Sapid dishes can be made, if the care and trouble requisite for their preparation

be given to them. If such dishes have to be made in addition to the family dinner, probably the cook will give notice; and all householders know what a dreadful catastrophe that is. Perhaps if it is something of which her favoured policeman happens to be fond, it may have a prospect of becoming *un fait accompli*. Condiments cannot be added after the food is served; they must be in the dish when sent up to table, if they are to be there at all. A little care, a little attention to what she is doing, would enable the cook to cope successfully with her *sapid* dish; but, then, is it fair to expect so much of her? A good old-fashioned plan of adding condiments to food without offending the palate was to make a pill or two of bread-crumbs and cayenne-pepper at table; and, so guarded, the carminative worked well. Some gourmets used to carry a small bottle of Nepaul-pepper with them perpetually, so as to be prepared for any emergency in the way of lack of flavouring, when dining where much seasoning was eschewed.

The dental arrangements of old persons are not nowadays so good as they were of old, and this matter must not be overlooked. As a consequence, 'spoon-meat' becomes once more requisite. Meat should be minced fine as collops; as minced meat made of meat which has been previously cooked is decidedly indigestible, fresh meat should be used. Such meat may be flavoured with curry and eaten with rice, or be mixed with some floury boiled potato. For those who like them, different forms of German sausage, from Gansleber Wurst downwards, are a suitable food—rich in fat. *Pâté de foie gras* is also a good compound. (Ebstein approves of this comestible; and it certainly is a very digestible food, albeit English people seem to have some prejudice against it—just as some unthinking persons are surprised at toffee being advised for an ill-fed child.) Liver-compounds are all, indeed, fit and appropriate food for elderly persons, provided that there exist no personal or individual reason against them. Oysters are good, and a fitting food. The mere list of foods which could be enumerated would be of little use to the reader; and if he would know more of the matter, he will find many dishes given in 'Food for the Invalid' (p. 136).

Clothing.—The great tendency of aged persons is to become chilled. They generate heat but imperfectly at the best; and

their heat-regulating arrangements are stiff, and work slowly. Consequently, if placed where heat-loss is rapid they chill. This matter should ever be borne in mind; and the clothing should be arranged accordingly. Their clothes, then, must be warm. But the powers are impaired, and any weight of clothes would be burdensome; so their raiment must be light—as well as warm. Heavy overcoats are out of the question; and furs are the fitting outdoor wraps of the aged of both sexes in cold weather. ‘One good under-shirt is equal to one great-coat,’ is an adage in common use. The underclothing must be warm and comfortable, both with men and women. It is always a mystery to me, when looking into the windows of shops, to contrast the warm underclothing for men in the hosier’s window—with the comfortless under-vestment on show in the windows where ladies’ underclothing is sold. Yet women do not generate heat more readily or in greater quantity than men. The goddess Fashion must have something to do with it. Good warm woollen underclothing from the neck to the wrists and ankles, is surely as desirable for the one sex as the other. Grant that the female skin is more sensitive than that of the male, the difficulty can be overcome. Where the means exist, silk underclothing can be adopted. Where they are wanting, a cotton garment (say combinations) can be worn next the skin, and over that the warm woollen vest and drawers. There is an old-fashioned objection to ‘women wearing the breeches;’ but that does not literally mean they are not to wear substantial drawers. Of course the white bisected garb which goes by that name can be worn over the woollen raiment to meet æsthetic views. But seriously, and all joking apart, the underclothing of woman is truly defective and insufficient! There can exist no question about it. And it is time woman was really made man’s equal in this matter.

The skin is apt to give off odours in age, despite the utmost cleanliness, and so the underclothing acquires an objectionable smell; but this can be met by wearing two sets of underclothing, each on alternate days. And the same holds good of the stockings and shoes. By being exposed to the air, and especially in sunlight, they are rendered fresh and sweet.

Then as to outer clothing. Old people are often impatient; and if they become warm, or heated with any exertion, off go their

overcoats, or cloaks, without regard to consequences. Hence the importance of a sufficiency of underclothing. First, because this would permit of a lighter and less exhausting overcoat, or cloak, being worn ; and secondly, because, if so protected, an indiscreet doffing of the outdoor wrap would be less likely to be followed by untoward consequences. For elderly men a good sealskin waistcoat with quilted back and sleeves, forms a capital garment ; which cannot easily be laid aside in an irritable moment. It is not heavy, and may be worn in the house very often in cold weather. Certainly it can always be donned when going out for a walk. Old people are fond of stopping in their walk—because they feel locomotion trying to them ; but they do not always care to avow their motive. They wish to admire the view : or maybe some anecdote or narrative suggests itself to the garrulity of age ; at any rate a halt is made, that is the fact. If the wind be blowing keenly the halt may be fraught with disastrous results. Knowing such propensity, it is well to guard against it by a judicious choice of clothing ; and such a waistcoat is a great comfort, especially if made as a Viennese tailor would construct it. A fur-lined coat is essential for carriage exercise if the weather be at all cold.

But many old people are averse to adopting such change of raiment as befits their years ; they do not wish to be thought to be growing old ! Consequently it is often a matter of some difficulty, involving patience and persistence, to get them to assume sufficient clothing to meet their defective heat-production. The use of furs among ladies has long been general ; but amongst men in England they are only beginning to make their way. Their cost was once almost prohibitive, but now they are reasonable in price. With the warm fur a heavy cloth is not required ; and a thin tough cloth which will not readily tear is the best material for the outside. For medical men themselves getting in and out of their broughams in cold weather, and visiting the warm apartments of the sick, such a coat in winter with many is indispensable to comfort and the avoidance of colds. Still more is such a coat of incalculable value in any sudden call in the evening or the night. Elderly medical men not only neglect themselves in this respect, but they too often set a bad example to others. One whom I attended on his deathbed told

me, as the cause of his illness, the fact that he had to get through his round quickly one day in order to catch a train; and just succeeded in doing so. The train was in the rural station as he drove up, so he hurried into a carriage. After the train moved off he discovered the cushions were wet; but there was no changing compartments till he reached the next station. He had on only the ordinary overcoat; and the result was the district lost a valuable life, and a good unselfish man perished prematurely. One elderly patient had a good deal of travelling early and late by train along a river; and anyone who has travelled late or early under such circumstances knows what chilly work it is. He was induced to wear long Wellington boots warmly lined, and a fur overcoat; and since then has ceased to be a source of profit to the profession. The use of fur overcoats is as judicious in the cold of Great Britain as elsewhere; for if less intense it is more trying on account of the dampness which accompanies it. It is not by any means necessary to have a long fur, a short fur is quite sufficient. It is a great comfort to have a collar of good fur, as beaver for instance. Such coats are admirable whether for driving, or railway travelling.

Under this heading come the matters of gloves and shoes. A medical patient once pointed out the relations of gouty deposits in the hands and feet to the low temperature of these parts. 'They are often chilled down below the deposit-point of the lithates,' was his view. And it has always seemed to me a rational view. Warm fur-lined gloves are an excellent hygienic arrangement for elderly persons in cold weather. Of course, again, we see the difference in warmth betwixt men and women's apparel. A pair of warm gloves lined with lambs'-wool for a man can be bought at any glove-shop. But such a glove for ladies is not to be procured (speaking from experience), except as sealskin gauntlets. Of course a lady who studies her appearance—and what sensible woman ever forgets this (see Charles Kingsley's 'Hereward the Wake,' chap. xxxvi.), or other woman, without paying the penalty for it—naturally objects to large hands; albeit a large capable hand is no bad quality in a woman. Even lined gloves are little in vogue with ladies, who on the other hand wear muffs; which said muffs are very comfortable for carriage exercise—and a muff-warmer in very cold weather is said

to be comfortable. Whether a muff in walking is preferable to lined gloves is probably one of those matters on which ladies will stand no dictation from the ruder sex.

Then, as to footgear; again one is treading on delicate ground with the fair sex. A good warm shoe with a stout sole is a great comfort to the foot. If that foot be a gouty one, the stout sole saves the great-toe joint from much strain upon it; which a thin sole permits. In cold weather the upper-leather should be of 'grain-hide,' which is thick and penetrated with oil, so that it resists water well. If the shoe be large enough to carry a good cork-sole, it is all the better. Button-boots, or even Wellingtons, are very comfortable, and in sloppy weather are to be preferred to shoes and gaiters. As to ladies, they can sometimes be induced to wear a stout shoe with a double sole; but not as a rule. Again we see the sacrifice to appearance. Foot-warmers for travelling are requisite with the light shoe. Goloshes are ungainly, but useful. While felt overshoes are comfortable; but are only adapted for dry cold, and therefore are rarely used in England. The wooden sole often added to a boot for winter in old days in the North ('spring clogs') was a capital measure to keep the feet dry and warm, especially on clay soils.

Then comes the matter of headgear. The present chimney-pot hat holds its own, despite the obloquy and abuse which have been showered upon it. It has at least the advantage of fairly meeting all weathers—winter storm and summer sunshine. But it is imperfect in either extreme; and perhaps ere long fashion will permit of various headgear to meet various seasons, and atmospheric conditions. In ordinary weather, without wind, the felt-hat is pleasant to wear. It is scarcely to be hoped that a fur-cap in winter and a felt-hat in summer will ever be sanctioned by Mrs. Grundy in England.

As to ladies' head-coverings, it is not possible to discuss them seriously from a scientific point of view. Any married man who has heard a discussion on bonnets betwixt two or more ladies, will recognise the futility of any attempt to lay down a principle on which a lady's bonnet, or hat should be constructed. To do such a thing would be as gross an outrage on them as would the presence of a woman be to men at a freemasons' gathering. A lady may suffer from severe facial neuralgia on any exposure to

the weather; but Fashion may sternly decree a bonnet which does not extend in front of the ears: the victim bows to her lot. Another may endure much discomfort in her crown from the sun, but a plume of feathers over her hat, or bonnet may be as forbidden to her as a male caress to a vestal virgin. Is there not the parasol for her! The main principle of headgear is to protect the head against sun and the weather; and this is more, or less efficiently done by any form Fashion may dictate, or permit.

Bed-clothes.—The bed and its coverings are deserving of attention in the case of the old. The luxurious feather-bed has gone the way of the stage-coach; and now mattresses and spring-beds are in vogue. The old feather-bed was injurious, as fostering pelvic congestion by keeping the body too hot; and Fleetwood Churchill has pointed out how much feather-beds encouraged menorrhagia, and the incurability of any case where the patient stuck to her feather-bed. Leucorrhœa, the bane of many women, is also fostered by feather-surroundings. The spring-mattress is the most desirable of all materials on which to lie. While the coverings of the bed should be light and warm. The heavy quilts of the past, and the heavy hap-harlots of pieces of cloth sewn together and lined, are disappearing; and light eider-down bed-covers are taking their place. Whatever is the cover it must be warm,—for, as pointed out before, the old are a chilly race.

When the patient cannot lie down flat in bed, as is the case in bad heart-mischief, and some other conditions, then several pillows have to be placed at the back, and the patient propped up thereby. Where there is such case, or where the sufferer has often to sit up to cough, it is well to put the patient into a stout flannel shirt, so as to protect him, or her, from chill. With the impatience of age old folks will fling aside the bed-clothes if they be too hot, or feel these too heavy; and then catch cold by the exposure. When such patients have to get up in the night it is well to cast a blanket round them; to keep the bed warm by replacing the clothes; and to put the top pillow to the fire. When the patient gets into bed this warm pillow should be placed so that his back will rest against it. Thus the patient does not get chilled. If in addition a bran pillow of convenient size be kept ready by the fire, to put to the patient's chest in front when getting into bed, or sitting up to cough, it is still

better. In paroxysms of palpitation such outward warmth over the heart is often most serviceable. The bedroom should be kept well-aired, yet warm. It should be spacious if possible. The larger it is, the less frequently need the air in the room be changed in order to preserve good ventilation. A small room involves either imperfect ventilation, or draughts; one of the two is unavoidable. Then a fire should always be kept up during the small hours of the morning. All medical men and nurses know the tendency for the lamp of life to flicker out about two in the morning. When an aged person is confined to one room,—that room ought to be the best in the house. Further, if it could command a view which would interest the invalid, it is better still. When the world shrinks to one room, little matters become of comparative magnitude.*

Baths.—An allusion has been already made as to the condition of the skin in old age (p. 283), and to the odours often given off by it. Consequently, in order to keep them sweet, scrupulous cleanliness is essential. The body should be sponged over with soap and water daily: this being done with the least possible exposure. The bath is often desirable. Where the odour is strong, some combination of carbolic acid and suet might be rubbed over the trunk and limbs. Such pinguid investment keeps the body warm in cold weather,—while the smell of the carbolic acid covers the body odour.

Regimen.—So long as exercise can be taken it should be taken, as a hygienic measure. As long as a ramble round the curtilage is feasible, it should be indulged in daily. When the stroll cannot extend beyond the garden, let such stroll be taken every day the weather will permit. It is good for the limbs, it is desirable for the viscera that exercise be taken. Cicero thought the advance of old age could be retarded by proper exercise; and that senescent persons should and could fight against the oncome of old age. And, probably, there is a good deal in what he says. On the other hand, some senile persons wish to persuade others and themselves that old age is not making itself felt, by taking more exercise than their powers are fairly equal to. The amount

* All medical men ought to have some personal knowledge of the subjective attitude of a patient confined to one room, in order to comprehend the situation.

which ought to be taken, and can safely be taken, must be determined by the medical attendant in each case. It should not be in excess from over-anxiety on the patient's part; nor insufficient from the patient's indifference. A gentle gale fanning the cheek, the leaves dancing in the sunlight, the pure fresh air drawn into the lungs at each breath, combine to produce a desirable result; and form a healthful surrounding for the aged person, whose time is mainly spent in the house. Just as old Martin Poyser stood at the gate, and watched the younger folks going to church, when the immortal Mrs. Poyser remarked: 'Ah! I often think it's wi' th' old folks as it is wi' the babbies; they're satisfied wi' looking, no matter what they're looking at. It's God A'mighty's way o' quietening them, I reckon, before they go to sleep.' They are satisfied to look on at the busy life in which they no longer can take their part.

One thing is important with old persons, and that is, they should neither get caught in rain, nor hurry unduly home, nor to shelter to avoid it; the one is apt to give them cold or even sharp pneumonia, while the other is apt to put too much strain on senile tissues. My own private opinion is that of old people found dead in their beds, a large proportion of them have made some effort the day previous of which (with the reticence of age) they have dropped no hint. And especially is this the case where the heart is found in diastole, and full of blood. Of course, too, dwellers in towns must be careful about running after omnibuses and trains. Anyone who knows Cannon Street Station on a Saturday afternoon, can readily realize the indiscreet efforts made by men—old enough to know better. A minute more, or less would make all the difference. 'Knowledge comes, but wisdom lingers' indeed.

All straining at stool is specially deleterious; and if the bowels do not move readily, it is well to desist from the attempt and await another call. And in connection with this matter something may be said as to proper places for old persons. In the country the privy is generally hidden from view by foliage. After rain this is wet, and when brushed wets the passer-by. Usually the place is cold and damp, and unfit for a delicate person, or an aged person to occupy. A night-chair, or a Moule's earth-closet should be provided in some room in the house for

nights, and wet days, in the country. When patients are confined to their room, they often catch cold by going to the water-closet; and one such case of pneumonia, ending fatally, came under notice while writing these pages. In many respects old persons are like children, they delight in a little wilfulness, and seem incapable of calculating consequences. Some one must be thoughtful for them; and even then they like to break rules when the opportunity offers.

It is well, too, to have some convenience for emptying the bladder at hand. One old patient died from rushing out one evening after dinner into the wet. Had some convenience been at hand he might have lived for some years longer.

For travelling, a travelling urinal is almost unavoidable in these days of fast trains, with long runs and brief stoppages. For old persons and invalids this haste is a trial. If the railway companies would put on saloon carriages with lavatories for such expresses, the public, or at least a portion of it, would be very grateful. The present arrangements of the London and South Western Railway Company leave much to be desired as regards the comfort of the invalid; and yet many of the best towns along their service live by invalid visitors; who also form a section of their own best patrons. If proper arrangements were made many persons would go to the South Coast who now refrain from doing so because they 'dread the journey.'

When elderly persons (like invalids) make a long journey, they ought to go to bed at once on arriving at their destination. A warm bed in a well-aired bedroom should be prepared for them. If this were practised many an untoward event would be obviated. To take a meal ere retiring in a new abode—whose draughts and hidden iniquities are no more known than are the morals of the maid-servant—is often the cause of the illness for which the journey gets the blame.

And a warmed bed is a comfortable thing for aged persons ordinarily. They are slow in movement, and are apt to get chilled in the act of undressing. A good fire in the room, a warmed nightshirt (often of flannel), and a warmed bed with a hot bottle in it, are what old persons ought to have. Getting warm before the fire in the day-room, before going to a cold bed in a cold bedroom, is a practice which defeats its own end.

~~Then, again, they should not~~ get up till the day is 'aired.' They should have some food, the room should be got ready with a comfortable fire burning, and their day-clothes put before it to warm, before the dressing process should commence. Specially is all this desirable if there be much cough, and raising of phlegm when assuming the erect posture.

Medicines.—The aged are like children in the matter of medication, and require special knowledge for their successful treatment. There are two great main points to be minded with them: one, what is not to be done; and one, what is to be done. What is not to be done, is the giving of iron recklessly. It rarely agrees with old people; in fact it is not untrue to say that the tolerance of iron diminishes as the years roll on. Of infinite value during the time of growth, of little less value in adult life, when degenerative changes set in iron is of comparatively little value; and when it seems to be indicated should be taken in small quantities and be well diluted, as the ferruginous waters of springs. In mal-assimilation with the liver out of order, iron rarely or never agrees; and such is usually the state of affairs in the aged when anæmic. Then what has to be done is always to give carminatives with the medicine. They will not endure cold medicines. Say it is a mixture of quinine, sulphate of magnesia, phosphoric acid and plain water. This will not do at all! But if some tincture of capsicum, or spirits of chloroform be added, or the vehicle be mint water, then all is different. If purgative mineral waters be taken, let each dose be taken in, or with, hot tea. If a laxative pill be in use, it should contain capsicum, or some essential oil, or galbanum. Old people are like ladies at the menopause in this respect, and will not have medicine which 'lies cold on the stomach.'

Then what are they to have? asks the reader. Certainly the question is a very proper and pertinent one. They do well with the carbonate of ammonia, with strychnine, quinine, and alkalis. Where gout lurks in a case, a little iodide of potassium with some citrate of potash is of use. In rheumatism, chloride of ammonium with guaiacum seems the proper remedy for most cases. In bronchitis, the most convenient medicinal combination is that of strychnine, ipecacuan, and capsicum, in compound squill pill, or galbanum pill, as the case may be. Podophyllin can easily be

added in the required quantity if a laxative be indicated, and does not make the pill too large. Of course there are many agents, and lines of practice beyond what is given here ; but what is said is worthy of attention. Sweet spirits of nitre is a favourite medicine where the water is scanty, either alone or with broom-tea. Buchu is a capital vehicle for other medicines where there is any irritation in the urinary tract. But it should be fresh made, not a concentrated preparation. Indeed, this holds good of all vegetable infusions. Just as a cup of tea is best when fresh drawn, so it is with medicinal agents. The prudent practitioner will never be without his infusion-jar. The aroma of buchu is at first rather startling, but familiarity soon makes its presence unnoticed. Or a compound of a bit of gentian, a scrap of quassia, a piece of orange-peel, a nip of ginger, and a peppercorn, with hot water poured on and allowed to stand awhile, is fragrant and palatable. It is neither waste of time, nor labour to have such fresh infusions made when wanted ; and the last should be made daily when an elderly person needs an appetiser. Of course sulphate of magnesia, or quinine, or strychnine can be added, if required. Especially is such practice desirable with patients in a good position in life, who have had experience of medicines sent out by the leading London dispensing chemists—who always use fresh infusions. If such fresh infusions are not made, the patient is apt to have his private opinion about the quality of the country doctor's drugs ; and it is not in their favour. Unguents and ointments should all be carefully made. I once got undeserved obloquy showered upon me (not in my hearing) by an old gentleman, a patient of my father's, about some white precipitate ointment. His valet, who told me about it, had put the pot out on the window-sill, and forgotten it was there ; the night was frosty, and after that the sharp crystals hurt when the ointment was applied,—and the blame was laid on me for carelessness in the making of the ointment ; when really it had been very conscientiously prepared. On another occasion I got into trouble very innocently. A lady, a patient of my father's, liked her quinine as nearly plain as possible, only just that amount of acid that would dissolve it. When I took the reins, on my father's death, a little tincture of capsicum seemed to me a good and desirable addition ; but the untoward consequence of this was she told everybody my drugs

were below the mark of those of my father. When the rumour reached my ears the explanation was not far to seek; and though no capsicum ever went into her mixture after that, I never quite regained her confidence. The youthful medical reader must excuse my pointing out such details,—but it is so easy to make a mistake; and often so difficult to put matters right afterwards. I was reared in a rural surgery, where there was no chemist within seven miles; and what I learned in my apprenticeship has not yet slipped from my memory. Indeed, my opinion is still to the effect that it would be a good thing for all medical men to have a little training in a surgery; even if their aim in life is ophthalmic practice.

Trouble in the pelvic organs is common in later life. Gravel and piles, rectal trouble, and prostatic trouble, are every-day affairs with the medical man in good practice. *Cascara sagrada* (if a good preparation) is held in high repute by some elderly persons, who say they 'cannot say too much for it.' A warm aloetic pill at bedtime is the favourite remedy with others. And pill-formulæ, originally prescribed by Abernethy, or Brodie, are still to be found treasured up in many households. There is nothing very marvellous about the prescriptions, as a rule, but they are held in great honour all the same. Why the formula should be preferred which has been written by a surgeon rather than a physician, is a dark matter on which it is impossible to throw any light. Jäger gained much repute by curing an Austrian princess of constipation by ordering her black coffee every morning. But into the black coffee her maid put some tincture of senna—a matter of which no hint was dropped to the lady.

There is one matter connected with practice among the upper classes on which a word may be said for the benefit of junior readers; and it is this—they have heard so much of medical mistakes, of persons who went to their graves from the medicine rather than the malady; they actually know so much about remedial agents, that no medical man familiar with them likes to give a dose of medicine which by any chance might do harm, and, therefore, not very likely to be large enough to do any good. Once, on pointing this out to a deceased peer, he looked hard at me, and soon after perished under a fashionable medical man with a handle to his name; where, if he had been a hospital

patient, he would have done well,—for his dose of digitalis would have been effective.

In fact, there are many little matters to be learned for successful practice with old people—who delight in their maladies, and with whom the doctor stands before anyone else (the most profitable of all patients in private practice)—which have to be learned through mistakes. The matter is never thought about until the deed is done. Calumba is a very beautiful bitter, but it does not keep in summer weather; and few men know this otherwise than through some of it going bad, and the patient asking the medical attendant to smell it. After that experience no further mistakes are made—with calumba at least.

Then, again, it is well for the practitioner, when called in to an elderly person, a stranger, to remember that the patient is taking the measure of him while he is carrying on his professional examination. There is the temporary, and permanent treatment of many cases. The first thing to be done is to give the patient relief—that is securing the first rung on the ladder of acquaintance. Say it is an old gentleman with gouty pains and a troublesome cough. A blue pill, with potash and lithia, might be the opinion of a town consultant as to his needs; but probably a practitioner at a fashionable health-resort, called in for the first time to such a patient, would give him some colchicum and paregoric,—with enough of tincture of cardamoms to cover the opalescence produced by the paregoric. And this last would be much more to the patient's mind. Having gained his confidence, then the other line might become possible; whereas, if the medical man had led off with it, he would have forfeited the patient's confidence,—and consequently lost sight of him.

Another great matter is not to regard any detail a lady may enter upon as too trivial for attention: anything is trivial which is ignored. Perhaps amidst the handful of chaff there are one or two pickles of corn, only to be found by using the riddle; and by sifting her talk in like manner, something really of importance may be found which fits into its place when the latter is found. Perhaps a trifling detail may turn out a very suggestive matter. Some ladies are riddles (in the other sense of the word), only to be made out by care, and pains; yet worth it all when you do come to understand them. When a lady says, 'Well, it is a

comfort to find some one who understands one's case,—even if there is nothing to be done,' her speech tells of confidence gained.

And in dealing with elderly persons it is well to remember that the intellectual powers are waning, just as the body is decaying : and that suspiciousness is one of the characteristics of waning power, and so an attitude of guarded watchfulness in behaviour is essential ; and yet it is well to avoid such attitude as will arouse, rather than allay the suspicions. If a man is naturally inclined to 'run cunning,' an acute old lady just beginning to feel her faculties a little untrustworthy—is about the last person to be imposed upon. Indeed, in dealing with aged persons, force of character and honesty of purpose are as essential to success as professional knowledge. Old people have their ways : and it is well to know them, and to study them ; and this can be done without any sacrifice of principle or dishonesty of purpose. If they are suspicious, it is well to let them see that you are not trying to take any advantage of them ; and that your conduct is inspired by an unselfish interest in them, and a sincere desire to be of service to them. A man's knowledge may be limited ; but he can at least act honestly—if he tries. And it is principle underlying practice, which gives a medical man's opinion weight with elderly persons ; they have had experience of the world, and learned to take the measure of persons ; and in dealing with them it is well to be of full stature in principle,—even if somewhat short of that in intellectual power, or professional knowledge. A medical man who stands well with his elderly patients is a man worth knowing.

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