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HEALTH, BEAUTY, AND THE TOILET.

BY A LADY DOCTOR.

THE THIRD EDITION

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LETTERS TO LADIES

FROM

A LADY DOCTOR.

BY

(THE LATE)

ANNA KINGSFORD, M.D. (PARIS).

AUTHOR OF "THE PERFECT WAY IN DIET," &C., &C.

THIRD EDITION REVISED.

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PREFACE.

THE following "Letters to Ladies" originally appeared, between the autumn of 1884 and the spring of 1886, in the columns of *The Lady's Pictorial*. The success they enjoyed, and the large amount of correspondence to which they gave rise, suggested the advisability of reproducing them in a collected form as a manual for popular use. They have, therefore, been revised and remodelled for this purpose, and are now, with considerable additions and improvements, offered to the general public.

The writer trusts that her name and medical diploma will constitute a sufficient guarantee of the good faith and serious intent with which the book is put forth. No lady possessing any scientific qualification, has, hitherto, so far as she is aware, interested herself specially in the study of the "cosmetic arts," or attempted to instruct her sex on matters connected with the improvement and preservation of physical grace and good looks. Yet the demand for such

instruction is universal, and, obviously, one who is both a woman and a doctor, competent to understand at once what is required, and the most efficient method of supplying it, is, from every point of view, the fittest exponent of the subject.

Advice on "beauty and the toilet" would be impertinent and unbecoming in a member of the sterner sex, while ladies who lack the advantage of a professional education labour under considerable difficulties when dealing with questions which involve technical knowledge of anatomy, physiology, chemistry, and hygiene. It is hoped that the want indicated will be met by the present manual, and that its use may save many ladies the embarrassment and expense of personally consulting a physician on matters which they feel to be trivial from the medical point of view, and difficult to explain to the masculine intelligence, but of which the importance to themselves is, nevertheless, considerable. In such dilemmas, recourse is often preferably had to quack remedies or to deleterious pigments and washes, with a result that not infrequently shows itself in subsequent irreparable damage to the skin or grave disturbance of the health.

Care has been taken, in compiling the following "Letters," to recommend only those cosmetics and specialities which have either been personally tested by

the author, or are known to be wholesome and beneficial. Discretion has also been exercised in regard to the advertisements included in the book, which have been selected with the view of supplying a convenient *vade mecum* for the assistance of readers in search of suitable and safe adjuncts to the toilet

CONTENTS.

HEALTH, BEAUTY, AND THE TOILET.

I.

ON OBESITY.

My dear Julia,—Your account of your struggles with the demon of obesity is really amusing, and were it not that you might consider me heartless, I should be tempted to poke fun at you about the various and incongruous dietary experiments you so graphically, and withal so dismally, record. Indeed it is laughable to think of you in the character of a female Sancho Panza, compelled at the stern bidding of science to relinquish the enjoyment of your favourite dishes. And, notwithstanding all these heroic sacrifices at the shrine of Comfort and Beauty, you add pathetically, that you believe you are growing fatter than ever! And no wonder, considering the injudicious manner in which you appear to have regulated your daily *menus*. "Nothing," you plaintively aver, "but bread and potatoes, with a milk soup or tapioca pudding!" Why, Julia, such a regimen as that, is, under the circumstances, sheer suicide! Instead of checking your disorder, you are doing your utmost to aggravate it. Dire indeed

might the results of such "treatment" prove were it to be continued a few weeks longer.

But before I proceed to details in regard to diet I must stop to answer your questions about specific medicines for the mitigation or removal of obesity. On this point my advice will be emphatic. Abjure all drugs, patented or otherwise. Hitherto your general health has been fair, you have not suffered from headache, lassitude or faintness. But I cannot promise you a continuance of so satisfactory a state of things if you have recourse to chemical preparations, of the nature and action of which you know nothing. There is a more excellent way of treating your infirmity than that you contemplate, and even though it should prove a little more troublesome than the operation of swallowing twice a day some unknown compound, the method I am about to expound to you has at least the merit of absolute safety, besides being surer, because more permanent, in its effects, than any merely medicinal treatment.

Obesity is, as no doubt you know, produced by the accumulation of fat in the cellular tissue of the body, and it is an infirmity due usually to hereditary predisposition, often combined, as in your case, with a persistent and incorrigible placidity of temper. The really sad thing about you, Julia, is that you are never seriously disturbed or ruffled about anything. You are plaintive sometimes, it is true, under circumstances which would render ordinary human beings wholesomely indignant, but you do not know what it is to be nervous, worried, or fidgety. If it were in the power of science to change your temperament, and to endow you with a tolerable portion of the fretful and irritable idiosyncrasy of your sister-in-law, Lady Teazle, your deliverance from the burden of a too generous *embonpoint* would be assured

without further trouble. But as we no longer live in the days of enchantment, the remedy I shall suggest will necessarily be less radical and immediate in its operation, though, I trust, scarcely less efficacious.

And first, my dear friend, you must resolve to become an early riser. Yes, you must positively forego your extra hour in bed after the maid has "called" you; you must take your early cup of tea while dressing, and not while reclining delightfully inert among your pillows. Your hours of slumber must be restricted to seven, and immediately after completing your toilette you must, in fine weather, go out into the garden and take a brisk walk before breakfast; or, should it be wet, you must employ yourself vigorously for half-an-hour with some such game as battledore and shuttlecock, or even undertake a serious bout with little Fanny's skipping-rope. When you have quite exhausted yourself, go and breakfast, beginning with ripe uncooked fruits if possible,—figs, nectarines, greengages, grapes. Take no milk or cream in your tea, drink it weak, and *very sparingly*. You might advantageously adopt the Russian custom of putting sliced lemon instead of milk in your tea. I assure you this is very refreshing. Perhaps it would be too much to ask you to dispense altogether with sugar, but, indeed, you must considerably reduce your allowance of it, as well as of bread. Bear in mind that your mortal foes are, chemically speaking, the *carbo-hydrates*, or in more homely language, all sugary and starchy aliments. Eat biscuits, rusks, or toast rather than ordinary bread; avoid farinaceous dishes, such as sago, tapioca, vermicelli, macaroni, &c.; take no sweets or pastry of any kind, and never taste cocoa, beer, or liqueurs. Drink toast-and-water at dinner, or, if you prefer it, lemonade, into half a tumbler full of which you

may put a small pinch of bicarbonate of soda. But do not drink more than half a tumbler full of liquid at any repast; in fact, the less liquid you consume, the better.

Drinking notoriously increases corpulence, especially if indulged in between meals. The mineral waters of Châtel Guyon are said to be efficacious against obesity; and the Friedrichshall bitter water, Tarasp, Æsculap and Hunyadi Janos are recommended for the same purpose. Probably their beneficial action is chiefly owing to their aperient qualities, for no habit of body so surely promotes obesity as that of constipation. If you are subject to this complaint, I recommend you to make a practice of taking, every morning before you leave your room, instead of tea, which is astringent, a plateful of stewed prunes, soaked figs, or ripe pears.

Green vegetables you may eat at discretion, but potatoes, on account of the large quantity of starchy matter they contain, should be wholly excluded from your dietary. White fish, grilled or baked (not salmon or cod), raw fruit, salad, pickles, and vegetables, such as tomatoes and herbaceous *légumes*, should form the staple of your food. Vinegar and oil may enter largely into your salad-dressing, and your dishes may, if you like, be flavoured with onion, sage, mint, or parsley. I do not think you will be inclined to partake too freely of such aliments as these, so it is hardly necessary, my dear Julia, to counsel you against over-indulgence as to quantity. If you find it necessary, however, to add more substantial dishes to your *menu*, you may eat about five or six ounces daily of game or poultry, preferably *cold*. All forms of pork, ham, and bacon must be scrupulously avoided.

Dr. Ebstein, who is an authority on corpulence, does

not prohibit the use of fats, butter, oil and foods generally included under the term *hydro-carbons*, but only of sugary and starchy aliments, the *carbo-hydrates*. Let me add a special word of warning against *white* bread, and particularly the spongy form of it known as *rolls*. They are both indigestible and constipating. Eat toasted *brown* bread, or if the bread be perfectly light and dry you may dispense with toasting it. But in either case let it be *brown* bread, and prefer it stale or at least a day old to new. Remember, the bran is what you need, and you may, with advantage, add bran to ordinary "seconds" flour.

I do not know whether you are accustomed to take wine; if so, a single glass of Bordeaux or sherry at dinner, is all that in future you may permit yourself. And if you can dispense even with this, so much the better. Trousseau, a celebrated French physician, advised his corpulent patients to take at each meal two grammes (thirty-one grains) of bicarbonate of soda; or fifty grammes (one ounce and three-quarters) of lime-water (liquor calcis) in case the soda should be found objectionable. But as lime-water is usually administered in milk, and has, moreover, very often an undesirable effect on the digestive processes, I think the bicarbonate of soda preferable.

Three meals a day, breakfast, lunch and dinner, are quite sufficient for you. Do not indulge yourself in any stray cakes or cups of tea between your regular repasts. If you dine at seven and retire for the night about half-past eleven or twelve, you may take a light supper of wine and water (Bordeaux), and some rusks, toast or biscuits. But be careful not to exceed the regulation half-tumbler full, and let three or four rusks or biscuits suffice. So much for diet.

Now, when you return to town, you can add to this

regimen the important treatment afforded by Turkish baths. I recommend to you two such baths every week, followed by *massage* or shampooing, and a fragrant cup of coffee in the cooling-room afterwards as a stimulant and restorative. But until you are within reach of these luxuries, you must content yourself with the morning and evening performance of a series of simple gymnastic evolutions, consisting principally of jumping and trotting on one spot—moving as though you were running briskly, but without advancing. While you practise this exercise your hands should rest on your hips, and you should be undressed, or at least, without your corset. On coming out of your bath you, or your maid, if she is expert, should rub, knead, and pound all the fleshy parts of your body with the hands, slowly and vigorously, but not with force sufficient to bruise or hurt the skin. These exercises and frictions ought to be continued until you are tired; and as you get used to their performance, the duration of each series may be lengthened. When you are efficient in them, half an hour's such exertion will not be found too fatiguing.

Of course if you like to have a Turkish or vapour bath in your own room so much the better and more comfortable for you. A portable Turkish bath complete has been invented and patented by Dr. Thomas Maccall, under the name of "The Matlock Domestic Turkish Bath," and was on view at the Health Exhibition at South Kensington in 1884. Vapour baths are comparatively inexpensive, and can be conveniently administered by a very simple and easily adjusted apparatus, sold at prices ranging from £1 1*s.* to £4 4*s.*, according to the fittings. Neither gas nor hot water pipes being needed for these baths, they are easily conveyed from place to place.

For the *massage* after your bath, you can, if you wish, substitute gymnastics or practice with the dumb-bells, remembering, however, that *massage* is, by far, the more efficacious. Your maid could easily take lessons of a trained attendant at any good Turkish-bath establishment. Especial attention should be directed to kneading and manipulation of the abdomen, care being taken not to hurt or bruise the internal organs. While the *massage* is being performed, you should lie on your back, covered only with a loose wrapper, and having your muscles in relaxation. A good deal of the necessary shampooing and kneading you may do with your own hands, especially over the chest and abdomen where another person, if new to the work, might possibly hurt you.

Lastly, before you begin to carry out my suggestions, have yourself weighed, and test the results of the treatment by periodical weighings every fifteen days. You ought, if you faithfully attend to the directions given, to lose, every three weeks, from two to four pounds weight. When you are able to take your weekly Turkish baths, the process of attenuation will be greatly facilitated. But, of course, you must persevere courageously, not allowing yourself to be lured from the path of duty by tempting *menus* or insidious offers of "good things" which you know to be forbidden. You must sternly compel yourself to rise by seven; and never, my Julia, permit your inherent indolence to interfere with the regular performance of your gymnastic feats. Remember and act up to the laudable spirit of the Pythagorean maxim:—"Fix upon that course of life which is best, and custom will render it the most delightful."

II.

ON LEANNESS.

My dear Psyche,—The question contained in your letter is one which but few physicians have yet attempted to answer. No treatise, so far as I am aware, has appeared on the subject, medical and lay writers alike seem dumb to the appeals of the Attenuated, and even the vendors of patent medicines have not shown themselves equal to the occasion. Yet, surely, many people would be glad to know "how to grow fat," and would, like yourself, willingly put into practice any reasonable system calculated to round their angles and so endow their figures with a graceful and symmetrical *embonpoint*.

Well, I will undertake the task, and to the best of my ability will construct for your edification a code of simple rules, by observing which I believe you may in a few months' time augment the proportions of your now somewhat too slender and aërial form.

Naturally, you will expect to be told that the regimen to be pursued is exactly the reverse of that which I prescribed for Julia. Broadly speaking, this is the case; but it is quite necessary to specify the details of the treatment to be adopted, otherwise you would certainly omit some very necessary precautions, and would find yourself at a loss in regard to your choice of a suitable dietary. And first, let me point out to you that it is

extremely difficult, in this era and centre of perpetual motion and constant excitement, to prescribe conditions favourable to an effectual fattening process. Of course, all other things being equal, country life is more conducive to *embonpoint* than any other; for in the country, hours are more regular, letters, telegrams, and similar worries less frequent, sleep more undisturbed and prolonged, and the general current of existence smoother and more peaceful in its flow than is possible elsewhere. The most favourable of all *milieux* for the development of adipose or fatty deposits is to be found in the repose and indolence of the Eastern harem. And, indeed, as of course you know, the life of the harem is especially arranged and directed with a view to the promotion and preservation of the plumpness of its inmates. The model Ottoman beauty is rotund, and even shapeless. European taste would deem her figure wholly unpresentable. Oriental ladies are fattened for matrimony, as we of this Western world fatten pigs for the market. And, for both ends, the means employed are substantially the same,—indolence of habit, frequent feeding, and absolute quiescence of mind. An animal of fidgety temper never fattens well; nor do nervous and anxious persons ever "put on flesh" to the same extent as those of an even and placid disposition. Worry and cerebral activity induce rapid oxidation of material, excess of secretion at the expense of the economy, and hence waste of tissue and attenuation. Almost all active, inventive, and conquering races are of lean habit, while inert and meditative nations exhibit a tendency to obesity. Of the first class the Yankee affords a good example; of the second, the Turk. And the "bearings" of these remarks, as the illustrious Captain Cuttle was wont sapiently to observe, "lies in the application thereof."

The first step towards growing fat is, therefore, the encouragement of an easy and equitable temper, and this part of my prescription you will probably find by far the most difficult to carry into effect. It will not suffice to be placid, as it were, by "fits and starts;" you must endeavour to set up a fixed habit of placidity, avoiding fret and mental irritability as you would vinegar. For, indeed, worry *is* moral vinegar, the acrid action of which will effectually neutralise that of the oiliest and blandest regimen possible to devise. With this premise understood, I now proceed to the easier and more strictly hygienic rules of treatment necessary to be observed.

You must retire early to rest, and lie in bed as late in the morning as, consistently with your duties, you feel yourself entitled to do. Before rising, take a cup of warm boiled milk, or of milk and cocoa, well sugared. Let your bath be tepid, and dress leisurely. At breakfast drink more boiled milk, chocolate, or cocoa; not tea or coffee. Eat mashed potato prepared with butter or cream, *purée;* or, if you prefer it, sweetened wheat or oatmeal porridge, the finer the better. *Revalenta Arabica*, or, preferably, the more expensive but far nicer *Racahout des Arabes* may be recommended as an occasional variation. I know of no food more delicious and delicate than this latter preparation, but it requires care in cooking. Bread, not too stale nor too coarse, should be eaten rather than toast, and the monotony of butter may be advantageously relieved by honey or cream cheese. At lunch, take as a beverage, slightly warmed milk, to which should be added an equal part of Apollinaris or soda water, unmixed milk being difficult of digestion and likely to cause considerable discomfort. Take care, too, that the milk has been previously boiled, a precaution that, under no circumstances, should be omitted. Cream,

too, should be scalded before use. Do not eat meat at lunch, but take potatoes, either steamed or baked in their skins; eggs, poached, rumbled, or in omelettes; tapioca, sago, vermicelli or custard puddings, macaroni, cheese, salad served with plenty of oil, but no vinegar or pickles. At dinner, a glass or two of champagne will do you no harm, and may even assist and promote digestion. Begin with some vegetable soup, such as lentil, pea, potato, pumpkin, vermicelli, or carrot, made with a milk stock, and sweetened freely. Of fish you may eat plentifully, especially of cod, turbot, mackerel, and oysters. Flesh-meats are not commendable; eat sparingly of them, reserving your appetite for the puddings, sweetmeats, and fruits, in which you may freely indulge. Some of my patients, anxious to acquire a seemly plumpness of contour, have renounced the use of flesh-meat and poultry altogether, and adopt instead a diet composed of fish, eggs, soups, milk, vegetables, fruits, farinaceous meals, grains, and sweetmeats. They find this diet most satisfactory, and more than ample for their needs. Of all flesh-meats, bacon and ham are the most fattening, but other considerations are strongly against their use, and I do not therefore recommend them.

Avoid all acid drinks, and patronise largely the sugary and oily forms of food. Eat sparingly of salt, but plentifully of mustard, which is a natural stimulant, and favourable to the processes of digestion. If you can take an occasional siesta after dinner, or earlier, do not deny yourself that luxury. Two great secrets of the science of fattening are these:—1st. Eat very slowly, and masticate thoroughly every mouthful. 2nd. Let your meals be frequent. The harem ladies eat all day long; they amuse themselves with bonbons and dried fruits as English ladies do with embroidery. Take after-

noon tea with plenty of cream and sugar in it at five o'clock, and a cake or two at the same time.

Your daily exercise should be regular and moderate. Horse exercise is to be preferred to every other. But if you cannot ride, take an hour's walk at a moderate pace along level ground, or should this again be impossible, at least be careful to avoid fatigue. Singing is a helpful form of exercise; it involves the introduction into the lungs of a large quantity of air, a habit of retaining it, and an energetic series of contractions of the expiratory muscles. Thereby the walls of the chest are rendered more elastic, and nutrition of tissue is accelerated by the activity of the pulmonary exchanges.

When attenuation is excessive, when the ribs protrude, when the elbows and knees exhibit the shape of the articulation of the joint, and the face wastes, and the shoulder-blades and breastbone show themselves distinctly under the skin, then special medical advice should be sought, for thinness so pronounced as this indicates disease. Your case, however, is probably far removed from the skeleton stage, and judicious attention to diet and habits of life will, no doubt, accomplish all that you wish. Remember, regularity must be your watchword. Everything must be done leisurely and with calm, all hurry and disturbance being calculated to interrupt and impair the orderly processes of digestion and assimilation.

III.

ON CLOTHING.

DEAR PAULINE,—Your ideas regarding the hygiene of clothing appear to me to be so rudimentary that the best thing I can do will be, I think, to categorise for you methodically the different kinds of fabric chiefly employed in making garments, and their various properties, considered from a scientific point of view.

Materials used for clothing are divisible, in the first place, into two groups,—those of vegetable origin, such as linen, hemp, cotton, and caoutchouc, and those of an animal nature, as wool, cashmere, furs, feathers, hides, and silk. Now, to all these materials belong certain physical characteristics—differing for each variety—which may be ranged under three distinct heads, *i.e.*, calorific properties, texture, and colour.

You ask me how you are to know what kind of stuff and what "make" is likeliest to prove most suitable for winter wear; why linen is often recommended to be worn next the skin in hot weather, merino in cold, and so on. Such questions can only be answered by putting you in possession of certain facts ascertained by science in regard to the qualities of the various dress fabrics in common use. Caloric, as no doubt you know, is the learned word for heat, and by the "calorific properties" of any material is meant simply its heat-producing

qualities. The human body, the temperature of which is normally superior to that of the surrounding atmosphere, would lose a great part of its warmth were it not for the action of the clothing worn. This action is twofold; in the first place, garments act as a screen, by opposing themselves more or less to loss of heat by radiation from the surface of the skin; secondly and indirectly, by intercepting between themselves and the skin a layer of atmospheric air, which air, being a feebly conducting agent, diminishes still more the loss of bodily temperature. On the other hand, by inverse action, clothing prevents the overheating of the body by the solar rays, and thus opposes the absorption of exterior heat. Vegetable stuffs, such as flax materials which include all varieties of linen, cambric, and batiste; cotton materials, such as calico, muslin, and so forth, conduct heat better than animal fabrics. The conducting power of wool, merino and silk is very small; that of furs, feathers, and down is still less, so that you see at once what is the answer to your question about wearing merino vests in cold weather. Merino, or indeed any kind of feebly conducting fabric, such as spun silk for instance, shuts in the heat of your body, and the warmth thus accumulates and remains in a fixed quantity; whereas when you wear linen, the radiation from the skin is much greater, and your temperature is correspondingly lowered.

Moreover, according to the conducting, emitting, and absorbing power of different stuffs, the cutaneous transpiration of the body varies; feeble heat conductors, while accumulating the warmth of the skin augment its transpiration; strong heat conductors, on the contrary, diminish this transpiration. And here I must stop to remind you that transpiration is not necessarily liquid.

Perspiration is simply the condensed state of the vapour of the cutaneous transpiration or exhalation. The skin is always breathing through its two or three million pores, and is thus continually discharging a considerable quantity of invisible vapour, so that were the whole body to be varnished in such a way as to prevent this evaporation, death would ensue. This once actually happened in the case of a child who had been gilded from head to foot in order to represent a golden cherub in a religious procession. The application of the gold-leaf closed the orifices of the skin, suppressed its transpiration, and the child died asphyxiated.

Fabrics retain in their meshes, or at their surface, more or less of the moisture of the atmosphere. Usually those stuffs which retain the most are coolest, and consequently in certain seasons they expose the wearer to the action of chills and humidity, and should be carefully avoided by rheumatic persons. Science distinguishes between that part of the atmospheric moisture which impregnates the tissues without causing them to feel damp to the touch, or allowing itself to be squeezed out, and that part which is retained by capillary action, and which gives the fabric a moist feel, and can be wrung out of it. Linen materials are more apt to retain humidity than hempen stuffs, and these last than cotton. Cotton absorbs most moisture without becoming damp; flannel and woollen materials absorb most by capillarity, and therefore more readily assume a feeling of humidity; but as this humidity evaporates gradually, it does not determine any sudden chill.

Again, woollen and silken stuffs, as well as furs, feathers, and caoutchouc, develop and retain electricity. Hemp, linen, and cotton are, on the contrary, good conductors of the electric fluid. A silk or merino jersey,

worn next the skin, will often "crackle" audibly when removed from the body at night, especially if the weather be dry.

The more air a fabric encloses in its meshes, the warmer it is, because, as I have already pointed out, air is a very poor conductor of caloric. Therefore, all loosely-made tissues, woven of thick, "fluffy" material, such as tricot, garments made of knitted wool or silk, or of mixed cotton and wool, are invariably warmer than close-made stuffs, not because in themselves they are warm, but because they imprison and retain in their interstices a considerable quantity of air. The same observation applies to the warmth of feathers and fur trimmings, and of quilted linings, whether the padding employed be cotton wadding or down.

A word may be useful here in regard to the value of fur clothing. Hides in their living and natural condition are permeable, and permit the system of the animals to which they belong to retain the normal temperature and healthy function of the various organs by means of free glandular action. But dead hides, stripped from the carcase, and having undergone an astringent and hardening process, called "tanning," have lost their permeability, they no longer admit ventilation, and, if worn as clothing, they tend to repress transpiration, and to shut in beneath them the exhalations of the body, which, consequently, condense as perspiration on the surface of the skin, and render it clammy and unclean.

A suggestion has recently been made that fur garments might be rendered more hygienic by perforating them here and there with small holes, so as to admit of the access of the air to the skin. But such an artifice would probably result in making the clothing draughty and

chilly rather than hygienic; and it is, therefore, I think, better to eschew garments of hides altogether, or at least to wear fur only as trimming on cloth, plush or velvet material. Moreover, the fur trade, and especially that branch of it known as the seal fishery, involves very great cruelty, and this consideration ought not to pass for nothing with good women. There are few worse barbarities in the world than those which are perpetrated in the Arctic seas on the gentle and intelligent seals. It would wring your heart to read of these things, Pauline, and I am sure you would never wear a seal-skin again. When they first came to my knowledge, I had a seal dolman in my wardrobe, but I could never put it on afterwards; so I got rid of it at the first opportunity, and have never bought a strip of fur of any kind since. Nor have I suffered from the cold in consequence; for with woollen materials, soft, thick plush, so like fur, without its inconveniences, velveteen and feathers, I keep myself quite sufficiently covered in winter-time, and gain in the warmth of my garments what I lose in weight. For, among the inconveniences of fur must be reckoned the heaviness of the hide, and the fatigue it consequently causes to the wearer.

Feathers are quite light, and, being sewn on to a permeable foundation of cloth or canvas, they are thoroughly hygienic clothing. Ostrich feathers, the prettiest and most effective of all, are obtained without cost of life or pain. The birds which furnish them are kept in large numbers at ostrich farms, and once a year their feathers are taken by clipping the quills at a short distance from the skin. If the quills were to be pulled out forcibly, the bird's health would be injured, and the feathers might not grow again; therefore as the ostriches are reared and preserved for the sake of their plumage, the

owners do not resort to this barbarity, but by avoiding the laceration of the birds, avoid also their untimely death and injury to their health.

For bed-clothing in winter-time I think you will find knitted or woven wool coverlets preferable to duvets, which, being less pervious, often cause excessive perspiration and headache if spread over the body at night. For the same reason duvet petticoats and jackets for day-wear are objectionable. By the way, remember that if you want to be warm in bed, you must not heap all your coverings *over* it, but see that a thick Austerlitz blanket or tricot is placed under the lower sheet, between it and the mattress. Your spine needs warmth even more than your chest, and this must always be borne in mind, in making a bed as well as in dressing.

Nor is the colour of garments a detail to be overlooked from the hygienic point of view. The celebrated Benjamin Franklin, having placed some scraps of cloth of similar texture and size, but of different colours, on a bank of snow, under a bright sun, found that of all of them a piece of black cloth sank deepest, and that white cloth did not sink at all. Hence he concluded that the black cloth had become hotter than the rest, while the white had remained cold, and, consequently, he assumed black bodies to be the best and white the worst absorbers of radiant heat. But his reasoning was incomplete, for the chemical constitution of colour has as much to do with the matter as colour in itself, and in some cases white radiates and absorbs far better than black. It will not therefore surprise you to find that scientific people are by no means agreed in opinion about the relation of colour to warmth. Stark and Coulier, who have made a special study of the subject, think that the influence of colour is not the same in regard to the radiation of heat

from the body, and to the penetration of solar heat from without. They hold that black garments radiate the maximum of caloric, and that white ones best retain the heat of the body, protecting it equally well against the exterior temperature, so that such garments are always the best to wear, alike in hot and cold weather; for in hot weather they absorb less solar heat than black or coloured dresses, and in cold weather they retain better than these last the animal warmth of the surface of the skin. Certain it is that in very severe latitudes, the fur and feathers of wild creatures are almost invariably white or silver grey. The Polar bear, the ermine, the Arctic fox and Siberian dog are examples. On the other hand, white flannel is usually found cooler than coloured by cricketers and boating men; and white cotton, muslin, and linen are worn for the same reason by the inhabitants of tropical countries. Other hygienists of repute—Rumfort and Home—hold a different opinion, and counsel the use of black garments in hot climates. For my part, I think that although in this respect, as in so many others, "doctors differ," experience amply proves the superior coolness of white clothing, and I therefore decidedly endorse Professor Tyndall's view that "black dresses are more potent than white ones as absorbers of solar heat" (*v.* Professor Tyndall's lecture "On Radiant Heat," delivered before the Royal Institution of Great Britain, January 19, 1866). In the Polar regions there is but little solar heat available, therefore Nature clothes the Arctic animals in white, in order to retain the bodily temperature and prevent a too rapid radiation. The same motive is applicable to the wearing by ourselves of white woollen apparel and furs in winter, when the sun's rays have but scant power.

I have a few words to add on the subject of colour and

texture in relation to the absorption of miasmatic emanations and organic contagia. Black dresses are said to be less safe from this point of view than any other. Next in order comes blue, then green. Yellow absorbs very little, and white least of all. Animal tissues retain the minute floating germs of disease longer than vegetable fabrics, and harbour them more readily; contagia are longer preserved in wool and in silk than in cotton or linen. Consequently the light-coloured print dresses worn by hospital nurses are well chosen for their purpose, while the black cloth costumes of the doctors are, on the contrary, highly dangerous as a means of spreading infection. Hildebrand, in his remarkable work on contagion, says that a black coat which he had worn when visiting a patient suffering with scarlet fever, after having been laid aside for more than a year and a half, was taken by him into Podolia, and, on being put on there, immediately communicated the disease to himself, and spread it in the province in question, where, until then, scarlet fever had been almost unknown. *Verbum sat sapienti.*

IV.

ON THE COMPLEXION.—I.

My dear Laura,—I am entirely of your opinion that it is the duty of our sex to be beautiful. I should indeed be sorry were the intellectual advantages, now so widely extended to women, to lead them to despise or depreciate the cultus of the laughter-loving goddess. But I do not anticipate any such catastrophe. The only results of education in this direction will, I believe, be to add wise discretion and scientific knowledge to the methods employed for the creation and preservation of physical charms, and to correct tastes and tendencies out of harmony with the best and truest types of human loveliness. Many toilet washes and unguents now in use will be discarded when their unwholesome and injurious effects are understood, and other cosmetics, more favourable to health and to the perpetuation of beauty, will be adopted. And thus an intelligent and skilful art will become the handmaid of Lady Venus.

It will take more space than can be devoted to one letter to set forth all that I have to say on the subject of cosmetics. It is a subject covering very wide ground, and must be handled in sections. I propose to speak first of the complexion and its treatment, and then to pass on to the consideration of the hair and of minor topics. In order that you may fully appreciate the

meaning and application of what I have to say I will briefly recount to you the structure and functions of the skin.

The skin is composed of two layers, the *derma* or true skin, which lies undermost, and the *epidermis* or cuticle, which covers and protects the derma. The latter, on its upper surface, takes the form of *papillæ*, minute conical bodies ranged in orderly rows, and composed of elastic tissue, which changes shape under the touch of cold or of heat, giving rise to the appearance called "goose-skin." The derma contains, besides arteries, nerves and veins, myriads of small glands opening by means of tubes on the free surface of the cuticle. Through these tubes the processes of transpiration and perspiration, described in one of my former letters, are carried on. There is great danger in arresting these processes, whether by internal check, or by the application of artificial varnishes laid over the surface of the epidermis. Within the true skin the hairs also have their roots, and appended to them are innumerable sebaceous glands secreting fatty matter, which serves for the nutrition of the hair. The cuticle is moulded on the papillæ of the true skin, and consists of flattened scales agglutinated together and superposed in layers, like tiles on a house-top. The upper layers are more flattened, transparent, and dry than the lower. The external scales are continually desquamating or falling off, and are replaced, as they disappear, by those beneath, which in their turn harden, perish, and are shed.

The variation of colour in the hue of the complexion which causes one person to be blonde and another sallow, is due to the presence of pigment in the cells of the cuticle. As the cells approach the surface and desiccate, the colour contained in them becomes paler. The nails

and hair are peculiar modifications of the epidermic tissue, consisting essentially of the same cellular structure as that membrane. These descriptive observations in regard to the skin will render it easy to understand why the application to it of any kind of paste or drying wash, containing precipitate, is certain to prove harmful. The health and beauty of the skin depend mainly on the cleanliness and freedom of its transpiratory pores. If these be choked up and loaded with foreign matter it is obvious that the regular functions of the skin cannot be fulfilled, and the result will, sooner or later, show itself in the accumulation of black deposit in the orifices of the glands, red blotches, due to deranged circulation, and even grave disfigurements arising from the deleterious action of certain chemical ingredients used in the composition of such cosmetics.

Before speaking of the local treatment necessary to secure and retain a good complexion, a few words must be devoted to the diet and hygiene of beauty.

Three meals a day should suffice—breakfast, lunch, and dinner; or, if dinner be taken instead of lunch in the middle of the day, then supper should be eaten not later than three hours before going to bed. For breakfast I recommend pure coffee, unmixed with chicory, and boiled milk, in the proportion of half-and-half of each. Toast or bread—preferably brown—with a frugal allowance of butter, should accompany the *café-au-lait*. The toast must not be eaten hot, nor the bread new, and the butter must be not salted, but fresh. Water-cress is strongly recommended as an adjunct; it is a great purifier of the complexion. If water-cress be not obtainable, then let dandelion be eaten, or lettuce, endive, beetroot, or any other freshly-prepared salad. Oil may be freely used as dressing, but not vinegar, for which, if acidity is desired,

lemon juice should be substituted. After the salad, porridge, hominy, frumenty, or wheatmush will be found agreeable to most tastes. Bread and milk is also wholesome. Honey, baked apples, jam, lightly boiled or poached hen's eggs, are all commendable. But every kind of salted and pickled food is to be excluded from the meal, whether fish, flesh, or fowl. No raw or smoked meats can be tolerated, and all such things as anchovies, Bologna sausage, every form of pork and ham, *pâté de foie gras* and other greasy and rich compounds must be rigorously avoided. Approximate the *regimen* adopted as much as possible to a milk, fruit, and farinaceous diet.

At lunch and dinner drink filtered water, or good sound claret, but not more than three wine-glasses full a day of the latter. Refuse cider, perry, and all beer and malt liquors. If claret be not liked, then take instead some light Rhine wine of good quality. Eat fish preferably to meat, mutton rather than beef, and poultry rather than game. Never take veal, ham, or pork, nor any dish containing tripe, liver, brains, or kidneys. Partake plentifully of green vegetables, such as spinach, cabbage, Brussels sprouts, cauliflower, seakale, &c., but be sure they are thoroughly well cooked, and are not served with much butter or salt. Remember that all greasy and salted foods are highly injurious to the complexion. Eschew pastry, and prefer blancmange, jellies, custards, and light puddings. Good cheese is not to be avoided, but do not eat rich or mouldy cheeses. All fruit is beneficial, and nuts will do no harm after a light meal. Supper may be regulated on similar principles. Be extremely careful to keep the bodily functions in perfect order, and never permit the least irregularity to pass unattended to. When medicine is needed, it is better to have recourse to vegetable oils than to saline drugs. On

no account take any form of mercury. When a health regulator is required, an excellent complexion medicine, quite tasteless and agreeable to take, may be prepared by mixing about two teaspoonfuls of flowers of sulphur with a teacupful of cold or slightly warmed boiled milk. Stir the powder well in the milk until a beautiful uniform primrose-yellow hue is produced, and no lumps remain. Take this medicine fasting, about an hour before breakfast.

Daily exercise in the open air is essential. Horse-riding and pedestrianism are preferable to driving. All out-door games are beneficial. Regular hours should be observed, heated rooms avoided, and great care taken to ensure efficient ventilation in the sleeping room. Do not occupy a bedroom without a chimney, and, when the weather is not too severe, let the window remain open an inch or two all night, the blind being drawn down over it. In summer it should always be opened about half a foot. Insects may be excluded by means of a piece of muslin or tarletane, fastened over the window-frame. Do not burn gas in your sleeping apartment, and, as much as possible, avoid using it elsewhere. Take care that the regular circulation of the body is in no way hindered. Let your corsets be light, and loosely laced, so that you can move freely and bend yourself with perfect suppleness. Nothing is so productive of flushing of the face, ears, and nose as tight lacing. Wear no garters, but fasten your stockings up by means of suspenders to your corsets. As much as possible let your garments be hung from the shoulders rather than from the hips, and do not heap flounces, cushions or horsehair "improvers" about the loins. Keep your feet always warm. If they tend to be cold at night, provide yourself with a hot-water tin, and wear woollen socks in bed. If the feet become

cold in the day-time, put them into hot water, and rub them briskly afterwards with a rough towel; or wear felt boots and let your feet rest in a foot-muff while you sit. Persons of defective circulation, whose hands and feet are apt to be cold, should wear silk mittens and woollen stockings. If wool cannot be borne next to the skin, let silk stockings be put on under the woollen ones.

Next in order, after the consideration of diet and hygiene, comes that of the local treatment of the skin.

When living in London, where the atmosphere is generally impure, the frequent use of vapour and Turkish baths will be found an advantage. If the former are employed, the face must be well steamed as well as the rest of the body. In the country an ordinary bath taken every morning will suffice, but the face must be washed separately, *in rain water*.

The secret of a beautiful complexion is said by those who ought to know, to lie in the exclusive use of *rain water* for washing purposes. The beautiful Ninon de l'Enclos, who at eighty years of age was still capable of inspiring the tender passion, never used for her face any other cosmetic than rain water. It used to be provided for her by her perfumer, who furnished it daily in sealed stone jars. Diane de Poitiers, a "professional beauty" of the French Court in its most gallant days, is said to have used the same magic liquid. Dew water enjoyed a similar reputation in the days of our great grandmothers. No doubt the secret of this excellence is to be sought in the fact that most spring or river waters are more or less loaded with chalky and other substances, earthy and alkaline salts, from which *soft* water—such as rain and dew—are free. The property of "hardness" in water is due to the alkaline salts—lime and magnesia. These salts combine with the stearic, or fatty, acid of soap, and

form an insoluble stearate of lime, than which nothing can be worse for the complexion. For this stearate of lime is of a greasy nature; it is precipitated in, and fills up the pores of the skin, which ultimately widen and crack under its influence. No amount of washing in hard water can remove this precipitation; hence the skin can be perfectly cleansed only in rain water, or in water from which the chalky alkaline salts have been artificially removed.

The artificial method known as "Clark's softening process," is thus applied: In a wooden tub prepare, by means of mixing ordinary water with slaked lime, a sufficient quantity of lime water to fill a gallon measure. When the water has dissolved all the lime it is capable of dissolving, let the mixture rest, and a perfectly transparent lime-water will be thus produced, which can be drawn off by a syphon from the subsided lime. Next add to this gallon of clear lime water about nine gallons of the chalk-water you wish to soften. Carbonate of lime will be immediately precipitated, causing the mixture to become turbid. In about six hours or less, if the vessel containing the water is kept perfectly still, a deposit of white matter will be thrown down, and a perfectly pure and agreeably soft water produced, which can be used with comfort and safety for washing purposes.

A far less cumbersome method, however, and one that is thoroughly suitable for adoption in even the most modest domicile, is that of M. Maignen, who has patented his invention for softening hard water under the name of "Anti-Calcaire Powder." The reagents of which this powder is composed throw out of solution and precipitate all the mineral salts usually present in hard water,—carbonates, sulphates, and metallic elements, rendering the liquid entirely soft and innocuous. This really invaluable preparation is sold at an extremely cheap rate

in tins of various sizes, and is quite as useful for cooking purposes as it is for the toilette. Drinking water can be purified of earthy salts by means of the powder, and afterwards filtered for table use,—a great and indeed almost inestimable boon for dyspeptics or persons suffering from gout, goitre, or kidney disease. To soften water for the bath or basin, for toilet purposes, the Water Softener prepared by Mr. Mason (see p. 31) is very valuable, and also most pleasant to use. It is a delicately perfumed powder, slightly pink, a pinch of which is simply stirred in with the hand at the time of using the basin or bath. It removes both "permanent hardness"—due to sulphate of lime—and "temporary hardness"—due to bi-carbonate of lime, which is called temporary because, by boiling the water, the bi-carbonate is destroyed and the insoluble carbonate thrown down. It is quite harmless to japanned, painted, or earthenware vessels.

Twice or thrice a week the face may be washed with Pears' soap, applied in the form of a lather by means of a flesh-glove made of Turkish towelling. Fullers' earth may be used instead of soap, by sprinkling a little on the hand or washing-glove and rubbing the skin with it. It must be well washed off afterwards. One of our most celebrated "professional beauties" uses an Oriental preparation of this character every night. I prefer Pears' soap myself, although, it is true, I am not a "professional beauty." On no account should any kind of medicated soap be employed, containing such substances as tar, carbolic acid, sulphur, and so forth. A well-known medical man, who has long been senior-surgeon to St. John's Hospital for Diseases of the Skin, says of such soaps that they are not merely useless, but that they often do a great deal of active mischief. "The more purely negative a soap is," says this eminent authority,

"the nearer does it approach perfection. It is essentially in this respect that Pears' soap excels. The skill of the manufacturer, when treading in the right path, is taxed to rid soap of all extraneous matters, so that it will cleanse the skin without injuriously affecting it. . . . I have reason to think that Pears' soap is the best because it is the purest that is made, an opinion vouched for by the strictness of chemical analysis. So effectually for medical purposes has the process of purification been carried out, that this soap, when made into a lather, can be applied even to the surface abraded by eczema." ("Hygiene of the Skin," by J. L. Milton.) A delightful and fragrant lather for the complexion—or indeed for the whole body—is made by putting into a small jar a ball of Pears' scented soap, upon which is poured a little hot soft water, which, by means of a fibre whisk (such as those commonly used in Turkish baths), is beaten up into a creamy froth. A soft flax washing-glove should now be dipped into this delectable mixture and rubbed firmly over the skin.

Some ladies, instead of soap or fullers' earth, use "virginal milk" or another cleansing lotion. Virginal milk, which is an old fashioned cosmetic and costs little, is prepared as follows: Take a quart of rose water, orange water, or elder-flower water, and add to it, drop by drop, stirring all the while, an ounce of simple tincture of benzoin. This emulsion smells deliciously, and looks like cream. The lotion is improved by the addition of twelve or fifteen minims of tincture of myrrh and a few drops of glycerine. Be sure you get "simple," not "compound" tincture of benzoin for this lotion, else it will be spoilt, for the "compound" tincture contains aloes and other ingredients quite unsuitable for use as skin "beautifiers."

After washing, the face must be carefully dried with a soft towel, and may then be powdered, but not with the ordinary violet or nursery powder, which is a great deal too coarse and *voyant* for toilet purposes. Suitable powders are variously made with bases of rice, nut, starch, flour, oxide of zinc, talc, and nitrate of bismuth. Fay's *Véloutine* has a bismuth basis, and is adhesive and effective, but I do not recommend it for daily use, because its continued application is apt to irritate delicate skins. Nor is it always possible to be sure that all bismuth powders are pure. Arsenious acid is apt sometimes to be present in preparations of this mineral. All cosmetics made of or containing carbonate of lead are essentially dangerous. I give the preference to "Poudre Doctoresse," an exquisite complexion powder prepared at my request by Mr. Mason, whose address is on the next page, from a recipe of my own. It is a talisman against sunburn and freckles, and also against the flushing apt to be produced in heated assemblies, &c. It can be had in pink, white, and cream tints.

On going to rest at night, the face should be again washed in soft water, and having been dried, cold-cream may be rubbed over it from forehead to chin, with the hand, and then wiped off with a soft towel. Do not go to bed with the face greasy. It is better not to trust bought cold-cream, but to prepare it oneself if possible.

The following is a good formula:

Pure white wax	1 ounce.
Spermaceti	2 ounces.
Almond oil	½ pint.

Melt these together by a gentle heat in a glazed earthenware pot, then add:—

Glycerine	3 ounces.
Otto of roses	12 drops.

Stir till nearly cold, then let the mixture settle.

This is the basis of most of the toilet unguents so largely sold. Of course, any kind of perfume can be added to give an agreeable odour, and a smaller quantity than that given in the above recipe can be prepared, the proper proportions being observed. The ingredients should be thoroughly mixed together over a spirit-lamp, and stirred with a glass or silver spoon while melting.

It is by no means necessary or advisable to use this unguent every night. The frequency of the application should depend on the condition of the skin. If you prefer an emulsion to a "cream," you cannot have a better cosmetic than "Emulsine of Cucumbers," a fine milky lotion prepared under my own direction by Mr. Mason, Pharmaceutical Chemist, Bank Plain, Norwich. This emulsine is composed of carefully chosen emollient ingredients, combined with pure cucumber juice, and is, in my opinion, the safest and most effective preparation that can be used for softening and preserving the skin. Mr. Mason sells two qualities of this emulsine, thick and thin, the former of which is best adapted for the removal of wrinkles, and for giving firmness and tone to the flesh. It should be applied after washing, and well rubbed into the skin with the fingers, after the manner of a "shampoo" lotion. Afterwards, the face should be dried lightly, and powdered with "Poudre Doctoresse." The thinner emulsine is an excellent emollient for use in summer-time, and as a preservative from tan, peeling of the cuticle, and flushing. The virtues of cucumber juice as a whitening agent are well known. Steaming the complexion—which may be done by means of a small portable vaporising-lamp, or an ordinary kitchen steamer—is excellent treatment for the preservation of the skin, especially when the glands of the cuticle are blocked and the surface of the epidermis is inclined to

look greasy and yellow. The action of the steam should be helped by friction with the hand; gentle and regular manipulation designed to restore or promote elasticity and tone in the small organs of the skin. Five or ten minutes' good steaming and shampooing two or three times a week will materially help to obviate premature wrinkles and to keep the cuticle in a fresh and youthful condition, by promoting healthy action of the glands and freeing them from accumulated dirt, and the products of stagnant secretion in which acne and "blackheads" originate. It is better to make use of the steam-bath at night than in the morning, so that any chance of chill from subsequent exposure to the outdoor air may be avoided.

Messrs. Allen & Sons, Marylebone Lane, Oxford Street, are selling a toilet steaming-lamp, especially prepared under my directions, for the purpose above mentioned. This lamp is also suited for the treatment of wrinkles, the vaporisation of essences, and other toilet operations.

V.

ON THE COMPLEXION.—II.

My dear Laura,—You will, of course, understand that although I believe science can do much in regard to the creation and preservation of beauty, I do not for a moment suppose that it can in any way supersede nature Some happy people are born beautiful, with skins like milk, and cheeks like china roses, and scarcely any aid is needed from science to keep this natural loveliness in repair. But the majority of women are not so blessed; and some, even if they enjoy a tolerable endowment of good looks during youth, begin to get actually plain when mature age sets in. It is, therefore, in the interests of the majority, and not of the exceptionally fortunate, that chemistry and medicine are taxed to furnish the feminine world with the means of sovereignty. As for you and me, my dear Laura, we both belong to this honourable majority, and neither of us is strong-minded enough to dispense with scientific assistance in regard to our toilette. I wish, you see, to be quite frank; and, moreover, in order to inspire you with the greater confidence, and to add weight to the suggestions made in these letters, I will justify my good faith by assuring you that I shall not recommend the use of any wash or unguent which I have not either personally tried myself, or which is not for sound reasons entitled to confidence. And here let me say, parenthetically, that, in my opinion, one of the

raisons d'être of the medically educated woman lies in the direction of the valuable service which her special knowledge enables her to render to the cultus of beauty. No male physician can be expected to sympathise, as does a woman, with the ardent desire which all of our sex have to be lovely, and to arouse love in others. Even though his science may be equal to the task of supervising the toilette of his fair patients, he is always prone to dismiss the topic of cosmetics and complexion lotions with a professional and somewhat disdainful "Pooh-pooh, my dear Madam, what do you want with such things? Take my advice, and leave them alone!" Wherefore, anticipating some such response, ladies do not care to consult the family doctor on these very delicate subjects: and thus, wanting instructed guidance, they follow their own fancy in regard to the choice of "fards" or powders, often, thereby, unwittingly ruining or defacing the natural charms which it is their aim to enhance.

All the masculine sex are amenable to the effects of beauty, but they would rather not know its secrets. Instinctively they feel that the fascination of a trick is gone for them when once they learn "how it's done." What if the slaves of the drawing-room nymph should be initiated into the mysteries of her morning and evening devotions to Queen Venus,—should behold the jugs of distilled and perfumed waters, the pots of cold cream, the rose vinegar, the preparations for the vapour bath, and all the other insignia and adjuncts of the sacred rites made ready by the attendant priestess? No, we do not show these secrets of the "Bona Dea" to men; we do not even talk about them, but for the greater number of us they are, nevertheless, necessities, if we mean to reign, and to hold in the world a power and place that shall sustain our moral influence upon it. For if a bad

woman, endowed with beauty, can yet command the hearts of men, what may not a good and noble woman do, possessing the same inestimable gift? Barbara Palmer, Duchess of Cleveland, the wildest and wickedest of Charles the Second's favourites, was once—at a time when her rapacity and lavish expenditure were creating disturbances at Court, and disaffection in the whole country—stopped in her carriage by a furious mob, and assailed with maledictions, hootings, and hisses. The people loudly charged her with the burden of the excessive taxation which the nation then had to bear, and threatened her with personal violence. But Barbara was no coward, and she knew the power of beauty. Opening her coach door, she stepped out into the midst of the exasperated crowd, and looked proudly round on the sea of malignant faces. Instantly the mood of her assailants changed. Her beauty conquered and disarmed them. "Blessings on your handsome face!" they cried; and bursts of cheers rang out from throats outstretched to curse and revile. Could a beautiful woman have a greater triumph than that—to paralyse the wrath of the howling mob, wither the imprecations on the lips of desperate men, and convert foes into friends by the magic of a single glance?

That is what beauty has done for bad women. But beauty and goodness together—ah! that is the power of the angels. What a pity it is, however, that to mortals it is only permitted to be fair for so brief a span! Few women retain the fulness of their charms long after thirty. As a rule, Time is kinder to *blondes* than to *brunes*, but he is gallant to none, and forty finds all of us conjugating our past tenses with a touch of sadness. "It was, it has been, it might have been!" Alack, why cannot we, like the story-book princesses, who had

fairy godmothers, remain young and handsome for a hundred years?

You are not yet forty, my Laura, nor even thirty-five, but it may perhaps "advantage" you, as the old English writers would say, to know beforehand what you should do to defend yourself against the encroachments of the enemy. For instance, if you would prevent the formation of wrinkles, and keep the skin of your face from falling into furrows and crows' feet, I advise you to make a practice of rubbing the forehead and cheeks with the hand, using rosewater and glycerine, or some other simple lubricant to facilitate friction. Rub in a direction contrary to that which the wrinkles threaten to take; vertically if the lines are forming horizontally, and *vice versâ*. Continue this operation for fully five minutes at a time, changing hands in case of fatigue, and using an even, firm and gentle pressure.

In my opinion all so-called "skin tighteners" are inefficient and injurious. If you will reflect on the cause of wrinkles, you will easily see that they cannot be cured or prevented by means of outward application. The skin of the face wrinkles exactly for the same reason and by the same mechanism that the skin of an apple wrinkles. The pulp of the fruit under the skin shrinks and contracts as the juices dry up, consequently the skin, which was once tight and smooth, now being too large for the contents, puckers and lies in folds. Similarly, when the subcutaneous fat of the cheeks and brow, which in youth is abundant—especially under the eyes and at the corners of the mouth—begins to be absorbed, and to disappear, the cuticle, which so long as this fat lasted remained smooth and even, begins to shrivel, and fall into lines, because it is no longer exactly fitted to the lining which was formerly beneath it. No astringent, applied to the

outside surface of the skin, can remove wrinkles so caused. The only way in which to treat them is to anticipate their formation by a strictly hygienic and tonic method of life, assisted by the mechanical friction already recommended, and a happy and hopeful disposition of mind. The mere presence of youth in the heart will often suffice to keep old age from the face, and to baffle the efforts of Time.

A common complaint, variously associated with plethora, constipation, and debility of the general health, is *seborrhœa*, or greasy skin. This unpleasant affection is caused by want of tone and elasticity in the sebaceous glands, which either secrete abnormal quantities of oily matter in excess of natural use, or else, being blocked at their orifices by want of cleanliness, swell here and there, and constitute little black or white heads under the cuticle. The latter form of the disease is a kind of *acne;* and of this I shall speak more particularly in a future letter. But greasiness of skin may exist without the complication of black or white points on the face, and constitute a very persistent and ugly malady.

Of course, it must be treated, like other skin disorders, mainly by careful general hygiene. Laxatives, in the shape of fruit early in the morning, saline mineral waters, and dandelion and water-cress salads, should be taken, with outdoor exercises, hydrotherapy, particularly douche baths, tepid or cold, according to the season, vapour baths, and abstinence from hot crowded rooms and rich foods. In almost all skin complaints, from the simplest and most trivial to the most complicated and serious, climate is a consideration of the utmost importance. Warm, moist, relaxing climates are injurious in nearly all such cases, and, on the contrary, removal to high, dry and cold altitudes, such as the climate of Switzer-

land affords, will almost immediately alleviate and often cure even the most obstinate skin complaints.

Apart from general treatment, on the necessity of which I cannot too much insist, it is advisable to use certain local remedies. For the affection we are now considering,—greasiness of the skin,—stimulating and astringent washes are needed, in order to restore tone and vitality to the relaxed glands and to brace and retract their flaccid orifices. For this purpose I recommend the use of white wine,—Greek or Rhine wine,—costing about two shillings the bottle. Bathe the face with it morning and evening. If the skin is not very fair, red wine,—Medoc claret,—commonly called "vin ordinaire," may be used. Of course such wines as sherry, port, and madeira are inappropriate. If the application of wine as a toilette lotion be objected to, the following wash may be substituted :—

Dried rose-leaves	1 ounce.
White wine vinegar	½-pint.
Rose-water	½-pint.

Pour the vinegar upon the rose-leaves, and let it stand for a week ; then strain, and add the rose-water, throwing the rose-leaves away. The lotion may be used either pure by dabbing the face with the corner of a napkin that has been wetted with it, or by putting about a tablespoonful into a cupful of rain-water.

If the oiliness of the skin is excessive and requires more specific treatment, a lotion, composed as follows, may be applied two or three times daily :—

Sulphate of zinc	2 grains.
Comp. tincture of lavender	8 minims.
Water (distilled)	1 ounce.

Mix for a lotion.

Other astringent lotions may be used with the same

object, but the above is the best I know of. In some cases, it is necessary to wipe the skin with a soft rag impregnated with benzine before using the lotion, so that it may come in contact with the cuticle, otherwise the excessively greasy state of the skin would prevent the beneficial operation of the astringent.

Ablutions with toilet vinegar, friction with flesh gloves, electric brushes, and local steaming are all good methods of treating *seborrhœa.*

Of vinegars, I recommend as the best I know the vinaigre de toilette of the "Société Hygiènique." Vinegars for the complexion are frequently made with diluted acetic acid, into which are infused rose-leaves, lavender, verbena, or some other fragrant substance. Toilet vinegar should be used much diluted, and is best employed after the ablutions of the morning, for the purpose of cooling the skin, of removing the tendency to greasiness, to which some sallow complexions are liable, and of bracing the epidermis. Vinegar must not, however, be used when soap has just been applied, because the acid of the vinegar will decompose the soap, and injury to the skin will result.

Never use any kind of liquid wash for the face containing metallic powder in solution, or earthy substances, such as chalk; for such cosmetics, drying on the skin, cause it to contract, form a solid coating over the cutaneous glands, and will, if frequently employed, prove a fruitful source of wrinkles and crows' feet. Under the influence of such applications the skin hardens, shrivels, and becomes blotched and roughened.

Next time I shall write further on the subject of the complexion, giving directions in regard to the use of toilet preparations for specific treatment of the skin.

VI.

ON THE COMPLEXION.—III.

DEAR LAURA,—You ask me what rouge is made of, and what I think of its use.

The best rouge-powders are variously prepared from carmine—extracted from cochineal,—carthamum (also called "*rouge d'Espagne*"), and orcanet. They are either mixed with *talc de Venise*, or prepared as solutions. Rouge of a commoner and inferior quality is made of vermilion or red sulphur of mercury. This last substance is extremely dangerous, and should never be laid on the skin. With regard to other rouges, their use is a question of taste rather than of health.

Carthamum powder, which is the best of the vegetable group of colouring matters, is extracted from an annual herbaceous plant known as the "bastard saffron," by means of an alkaline solution, from which it is precipitated by a vegetable acid, such as lemon-juice, under the form of flakes of a brilliant pink hue. This pigment is soluble in a small quantity of alcohol, or in ether, to which it gives a beautiful red tint. When used for the toilette it is usually prepared as a powder, which is made adherent by mixing it with *craie de Briançon*, also known as *talc de Venise*. This talc is a colourless silico-aluminate of magnesia, containing a little potass; it is unctuous to the touch, easily pulverised, and quite inoffensive in its action on the skin. Indeed, it is frequently used in

surgery as a dressing for open wounds, on which it readily exercises a beneficial and healing action. No better recommendation than this can be offered for its use as a toilet cosmetic. *Vinaigre de rouge* is made of carmine, suspended in vinegar, by the aid of a little mucilage.

The best of the liquid rouges, "Bloom of Roses," is made as follows:—

Powdered carmine	1½ drachms.
Liquid ammonia	5 drachms.

Put this mixture into a stoppered bottle, set it in a cool place, and agitate it occasionally until complete solution. Then add, with agitation,

Rose water	8 ounces.
Rectified spirit	1½ ounces.

previously mixed with—

Essence of rose	2 drachms.

Lastly, dissolve in the mixed liquid—

Fine gum-arabic	½ ounce.

and, in a few days, decant and bottle the mixture.

Carmine, the colouring agent used in the above preparation, is entirely soluble in liquor of ammonia, hence its purity is readily determined by this test.

"Rouge crepons," consisting of white woollen crape or fine cotton wool which has been repeatedly soaked in the above solution, and allowed to dry, are commonly used in Spain and elsewhere on the Continent. The crepons are rubbed on the cheeks until the desired tint is obtained.

As to what advice about the use of rouge a "medical woman" ought to give, that is rather a delicate question to determine. I do not think there is any moral harm in trying to make oneself look one's best, and I fancy a

great deal of nonsense is talked about "paint" and so forth, even by people who do not scruple to lace tight and to adopt the most artificial and insincere manners. Few of us see any wrong in adorning our persons with beautiful fabrics, jewels, and metals, the object of which is to enhance whatever charms we possess naturally. Some of us powder our hair with gold or diamond dust for the same reason, and I do not know why, if it suits us, we should not equally powder our faces with pink and white. The really important point of the contention is that the powders so used should be perfectly innocuous to the skin. I have already pointed out to you how unwise it is, and for what reason, to use any kind of complexion wash containing mineral precipitates, but the moderate employment of simple preparations, whether white or coloured, such as those I have indicated, appears to me to be justified both by hygiene and morality. Pallid faces, and skins which have lost the first flush of youth, are often greatly improved by a little judicious "getting up," and it is not the least of a woman's duties to look fair and pleasant, and to adorn the world. The details of these little artifices, however, ought not to occupy us very seriously. They should be lightly "thrown in," so to speak, as an artist here and there throws in a bit of bright colour to enliven and perfect an already finished landscape. "Not too much attention, but just attention enough," as they say at "Toole's," should be the ruling axiom of the toilette. A true woman thinks first of her heart, secondly of her mind, lastly of her personal appearance.

After this little homily, you will, no doubt, be ready to hear what I have to say about the specific treatment of the skin, concerning which I promised you in my last letter to give some account.

Broadly and generally speaking, all disorders of the skin should be treated by vapour baths, taken regularly once a day, or three or four times a week, according to the necessity of the case. To this treatment it is necessary to add rigid temperance in both eating and drinking, regular hours, and daily exercise, good ventilation, and the exclusive use of rain-water for ablutions of the skin.

As I have already given sufficient directions in regard to these matters, I will not further recur to them. It must also be borne in mind that sea air and sea bathing are injurious in all forms of skin eruption, and that patients residing at the seaside should remove to inland residence before commencing a course of treatment for cutaneous disease. In many cases irritable and eruptive skins will be completely restored to a healthy state by this single measure. In others, the adoption, for a few weeks, of a *milk diet* is advisable; or, whether this be practicable or not, the use of fermented drinks and of butcher's meat should be at least discontinued.

The commonest form of face eruption is acne, or "black points." The parts most frequently affected are the nose, cheeks, and chin. As you are no doubt aware, these black points are caused by the deposit of morbid material in the glands or follicles of the skin, these follicles becoming thereby distended, and not infrequently inflamed. But you are wrong when you speak of the matter contained in them as "grubs." The contents of the affected follicles are not "grubs," but simply sebaceous or greasy matter secreted by the glands themselves, and discoloured by exposure. It is the shape of the glandular sac which causes the contents to take a worm-like appearance when pinched out. True, certain medical writers describe under the name of "demodex" a minute parasite which is sometimes found inhabiting

the skin follicles, but the "demodex" is microscopical, and does not give rise to acne. I do not think it is advisable to squeeze out the "black points." This practice constitutes treatment of the symptom only, and the morbid secretion will speedily renew itself after each such operation. Acne can only be successfully cured by careful attention to general diet and habits, assisted by the use of steam baths, and shampooing of the affected parts of the face with the hand while in the bath.

It is best to have these steam baths early in the day, but never immediately after breakfast or any other regular meal.

In addition to the general rules just prescribed, the following lotion may be used as a cure for acne, dipping a soft rag into the preparation, and rubbing it firmly over the pimples night and morning:—

Sulphur præcip.	1 drachm.
Spt. Rectificati	1 ounce (mix).

This mixture must be shaken before use. While employing the lotion, an occasional dose of flowers of sulphur should be taken in warm milk before breakfast. The face must be washed night and morning, before using the lotion, in very hot rain water.

Another astringent lotion is also useful, as follows:—

Sulphuris præcip.	℥ss.
Etheris sulphurici	℥iv.
Spiritus vini rect.	℥iii. ss.

Misce et fiat lotio.

Sometimes, instead of flowers of sulphur it is better to take the medicine in the form of pills—*Pilula Calcii Sulphidi*—two or three daily. A lotion made as follows, proves efficacious in many obstinate cases of acne:—

Blanched almonds	1 ounce.
Bitter almonds	2 to 3 drachms.
Distilled water	½ pint.

of which make an emulsion; then strain, stir, and add gradually

Bichloride of mercury (powdered) . 15 grains.

previously dissolved in half a pint of distilled water. After mixing all these ingredients, add to the whole, enough distilled water to make the entire mixture exactly a pint. Take care that nothing metallic or alkaline touches the liquid. Use it by moistening a corner of a napkin or soft towel with the mixture and dabbing the face, especially over the black spots.

When acne assumes the form of small hard distinct pimples, occurring in groups on the forehead, chest and back, they are best treated by stimulating lotions consisting of equal parts of strong spirit and water, or of vinegar to which a third part of water may be added. At the same time it is essential that the use of coffee, ale, beer, wines (except Burgundy), and all rich, greasy dishes should be abandoned, as well as indulgence in pastry, hot rolls and pickles. Fresh and stewed fruit, water-cress, dandelion or lettuce salad, and green vegetables, plainly cooked, should be plentifully eaten, *brown* bread being substituted for white. The sleeping apartment must be well ventilated, and the patient must strictly abstain from all unwholesome and improper habits.

A peculiar form of acne known as "*acne molluscum*" sometimes appears on the forehead and about the nose. It has the aspect of tiny seed-pearls imbedded in the skin, and is due to the obstruction of the sebaceous glands which, unable to rid themselves of their contents, distend and become hardened and prominent. These glands must be opened with the point of a needle, and the concrete mass pressed or picked out. The empty sack of the gland may then be bathed or dabbed with a little toilet vinegar or spirit and water.

Herpes is a troublesome eruption frequent in children and young persons. It appears in the form of red patches, of irregular shape and variable size, causing great irritation and a sensation of burning. After a day or two—sometimes in a few hours—there arises on the patch a cluster of very minute blisters or vesicles. These blisters rupture, and a scab, ultimately becoming yellow and shrivelled, forms above the patch. Usually herpes occurs at the corners of the mouth, and is then called *herpes labialis*. The best cure for this complaint is milk-diet, with a dose, now and then, if needed, of castor oil. It is not necessary to use any local application; the eruption will quickly disappear under the effect of the general treatment.

Nettle-rash, or *urticaria*, consists of little red wheals on the skin, like those which are raised by the stroke of a whip. The eruption is accompanied by a tingling and pricking sensation, recalling that produced by a stinging-nettle,—whence its name. Acute nettle-rash is generally due to indigestion, caused by the eating of some food which the patient has been unable to assimilate, as, for instance, shell-fish, lobster, crab, prawns, *potage bisque* (made of cray-fish). Some persons suffer from nettle-rash after taking oatmeal, or even eggs. The chronic form of this eruption is almost always connected with internal disease, and in such cases, of course, medical advice should be sought. In the acute form, the following lotion will give useful relief:—

Carbonatis ammoniæ . . .	1 drachm.
Plumb. acetatis	2 drachms.
Aquæ rosearum	8 ounces.

If the rash be caused by inappropriate diet, it is advisable to begin the treatment with the administration of purgative medicine, such as a dose of castor oil, or

some cooling saline, after which care should be taken to avoid eating food likely to prove indigestible, such, for instance, as shell fish, preserved meats, salted viands, and greasy dishes, especially pastry. Green vegetables should be largely partaken of, salad *au naturel*, and ripe fruit. When the eruption is connected with habitual acidity of the stomach, the administration of bicarbonate of soda will be found beneficial. Quinine is also a useful medicine in intermittent forms of the rash. The chronic form due to special functional or organic disorder of the liver or to disease peculiar to women, necessitates medical examination and treatment.

Flushing of the face and other forms of transitory redness usually indicate a general perturbation of the health. Anæmia and plethora both shew themselves in this way. In the first case tonics, nourishing food, with plenty of oxygen and exercise, are needed; in the second, aperients, refrigerants, and, if possible, manual work, or active pedestrianism. In both cases, care should be taken that no bandages, laces or ligatures impede the circulation in any part of the body; the sleeping chamber should be thoroughly ventilated day and night; and every morning, before leaving the bedroom and while still fasting, a couple of ripe pears, oranges or figs should be eaten. If these cannot be procured, stewed prunes or grocer's dried figs soaked in water overnight and thus rendered soft and swollen, may be substituted.

Flushing is sometimes checked by bathing the face in very hot water, or putting the hands and feet in hot water, the action of which may be enhanced by the addition of a handful of mustard powder. Excessive nervousness and hysteria cause flushing, because the small vasomotor nerves which control and regulate the cutaneous blood-vessels are disorderly in their action, and

relax or contract spasmodically, and in obedience to irregular and morbid stimulus. In such cases, flushing is but a symptom, and cannot be treated effectively apart from the malady which causes it. Hot drinks, such as tea, coffee, or negus, are very likely to give rise to flushing, and should be avoided by persons who are subject to the complaint. Indigestion again, is a common cause of transitory burning and suffusion of the face. Eating rapidly, reading, writing, or otherwise using the eyes and brain actively during or immediately after a meal, are all frequent provocatives of flushing. Both mind and body should be rested for a quarter of an hour or more after a meal. Gentle exercise in the open air, however, is better than a "nap" in an armchair.

As for "tan" or freckles on the skin, these pigmentary discolorations are of two distinct kinds,—summer or sun freckles, and winter or cold freckles. The first are ephemeral, the second chronic. For summer freckles, Lait Antéphélique, or Antiphelic Milk is a good remedy. This lotion can be bought everywhere pretty cheaply, and it is therefore superfluous to give a formula for making it. But if you want recipes of your own, try the following:—

Sal-ammoniac (powdered) . . .	1 drachm.
Distilled water	1 pint.
Eau de Cologne	2 fluid drachms.

Mix, apply with a rag night and morning. Or this, which is more decided in its action:—

Bichloride of mercury	6 grains.
Hydrochloric acid (pure) . . .	1 fluid drachm.
Distilled water	¼ pint.

Mix and add:—

Rectified spirit Rose water } . . .	of each 2 fluid ounces.
Glycerine	1 ounce.

Mix, and use night and morning. In cases where sunburn does not assume the form of spots, but simply discolours and browns the skin uniformly, the following formula will be more appropriate :—

Fresh lemon-juice	Equal parts.
Rose-water	
Rectified spirit	

Mix these together; next day decant the clear portion and strain it through muslin. Bathe the face night and morning with the lotion, wiping the skin afterwards with a soft towel.

A quarter of an ounce of white rose-leaves, steeped in a quarter of a pint each of fresh lemon-juice and brandy for about three hours, and then pressed, strained, and decanted, makes a good lotion for whitening the skin. It is best to decant the day after infusion.

For cold or chronic freckles and tan it is advisable to have recourse to other remedies. These discolorations are caused by disorder of internal organs, usually the liver, but sometimes they are due to uterine displacement or functional disease, or to ovarian tumour. In the latter cases they belong to a class of pigmentary discoloration called *chloasma uterinum*, and must be treated medically. If they are liver-spots they will be of a yellowish brown colour, with smooth surface, having tolerably sharply-defined margins. The forehead, temples, and region of the mouth are the most ordinary seats of the discolorations. As the stains are deposited beneath the epidermis, it is difficult to reach and remove them by superficial applications, but the following lotion may nevertheless be of service :—

Hydrargyri chlor. corrosivi	gr. v.
Ammonii chloridi purificati	ʒ ss.
Mist. amygdalæ amar.	℥ iv.

Misce et fiat lotio.

This mixture should be applied twice daily, and its action should be assisted by the use of an aperient "liver" pill, preferably of podophyllum.

Another useful form of *chloasma* lotion is the subjoined:—

Hydrargyri chloridi corrosivi . . .	gr. vi.
Zinci sulphatis	℥ ss.
Plumbi acetatis	℥ ss.
Aquæ rosæ	℥ iv.

Misce et fiat lotio.

If the action of this lotion be irritating, use an ointment thus composed:—

Bismuthi sub-nitratis	℥ i.
Unguenti hydrarg. ammon.	℥ i.
Unguenti aquæ rosæ ad	℥ i.

Misce et fiat unguentum.

Some persons are subject to the eruption on the face, neck, and arms of small pink spots, which appear suddenly, and in the course of a few hours, or a day at the utmost, subside. Very often these spots are mistaken for the stings of insects, because they are most often experienced in summer, and are usually isolated. The eruption is simple *erythema*, and is caused by indigestion, irregularity of the bodily functions, want of fresh air, or debility. It usually indicates the need of a tonic, and quinine may be taken with good results, either as a wine or in the form of a tincture. Other cutaneous eruptions, such as eczema, erysipelas, ecthyma, and so on, require professional supervision, and cannot safely be treated without it.

As for superfluous hairs, warts, moles, and other "accidents" of the skin, I must reserve what I have to say about them for my next letter.

VII.

ON SUPERFLUOUS HAIRS, MOLES, AND WARTS.

My dear Laura,—My present letter, in accordance with your request, will be devoted to the treatment of superfluous hair, moles, warts, and similar defects, whether occurring on the face or elsewhere.

Superfluous hair is of two kinds, and as the same treatment does not equally suit both, it is necessary I should distinguish between them at the outset. On the chin and upper lip, especially in women of dark complexion and mature age, it is not unusual to see a growth of stiff, isolated hairs, almost as conspicuous as those of the eyebrows, though not so close and numerous. The same kind of hair, but even more bristly in character, sometimes sprouts from moles upon the face or other parts of the person. The other kind of superfluous hair is called *lanugo*. It is mere down, soft, and usually very much thicker in growth than the stiff hairs above described. It grows upon the outer side of the arms, the anterior surface of the legs, and about the upper lip, chin, and lateral parts of the face, appearing usually at adult age, and growing more robustly on dark than on fair skins.

The methods by which superfluous hair of these two varieties may be removed are four in number. The first and most general method is that of applying a chemical depilatory. Depilatory powders, the commonest being

composed of sulphide of arsenic (orpiment) or of caustic lime, are used for the purpose of burning off the hairs, but the roots always remain uneradicated and the hairs reappear. Here is the very best depilatory preparation known to me, and I recommend it with confidence:—

Barii sulphidi	℥ ii.
Pulv. oxidi zinci	āā ℥ iij.
Pulv. amyli	

Mix with enough water for a paste, smear it lightly over the hairy part, and in from five to ten minutes wash it off, when the hairs will come with it. Sulphide of sodium also makes a good depilatory when thus formulated:—

Sodii sulphidi	℥ ii.
Cretæ præparatæ	℥ vi.

Mix and apply as above.

After using a chemical depilatory, a drop or two of sweet oil should be applied to the denuded surface, in order to allay the irritation and heat of the cuticle. The whole operation should be performed at the night toilette, just before going to bed, so that by the morning the local disturbance may have completely subsided.

The second method of removing superfluous hairs is mechanical, and is accomplished by means either of the tweezers or of a resin stick, heated to melting point, clapped on the hairy part, allowed to remain in contact with the skin a minute, and then sharply withdrawn. This method gives perhaps less trouble than the first, but it is decidedly more painful, and of its two varieties, the tweezers are, I think, preferable, especially when the hairs to be removed are stiff and few in number. Düsser's "Pâte Epilatoire" is the best adaptation I have yet seen of the mechanical method for cases in which epilation by tweezers would be tedious.

Next in order comes the solvent method, which, however, does not suffice of itself to remove hair, but facilitates epilation either with the tweezers or with resin. Its effect is to dissolve the natural fat of the hair follicles, and thereby render the hairs loose, and easy to pluck out. The solvent is thus composed:—

Ætheris	℥ v.
Spt. vini rect.	℥ ij ss.
Thymol	℥ ss.

Misce.

Lastly, we have the galvanic method, recommended by most medical writers on the skin, and recently brought into considerable vogue by Drs. de Watteville, Michel, Hardaway, Piffard, Fox, Duhring, Startin, and others. This method is called electrolysis, and is not applicable save by the skilled hand of an adept. It consists in the introduction of a fine needle into the hair-follicle and the destruction of the papilla by means of the galvanic current. The needle—usually either a very fine sewing-needle ground down to hair-like dimensions, or an ordinary "bead-needle," and attached to a small holder—is connected with the negative pole; the positive pole, with sponge electrode, being held by the patient. From six to a dozen cells of a recently-charged galvanic battery are requisite. The needle is introduced into the follicle without extracting the hair, which is loosened by the galvanic current, set in operation when the patient touches the sponge electrode. After the current has been in action for about half a minute or less, the needle should be removed. If the patient relinquishes the electrode before the needle is taken from the follicle, a shock will result. A slight froth accumulates about the follicle after the operation, and a little redness, sometimes followed by the formation of a small pustule, which,

however, soon disappears. No scar results, or ought to result, if the operator is skilful and experienced. As for the pain caused by electrolysis, it is not severe. Nervous persons are more affected by the process than others, and it ought not to be attempted whenever the patient exhibits fear or hysterical tendencies. The sensation caused by the current is really disagreeable only when brought to bear on the region of the upper lip and other acutely susceptible parts. This method is the *only one* by which hairs can be really eradicated, and even by this method a single operation does not always suffice. If the base of the follicle is not reached by the needle, the hair will sprout again, and another sitting will be necessary.

Now that I have described to you in detail the four modes at present known of treating superfluous hair, you will easily see why I began by establishing a distinction between lanugo or down, and separate stiff hairs. Electrolysis is applicable only to these last. Applied to mere down it would not only be an intolerably tedious process, but the time and trouble it would involve would cost a fortune. Isolated and conspicuous hairs on the chin or upper lip may be very conveniently removed by the galvanic battery, and, as we shall presently see, the same method is equally useful in dealing with hairy moles; but for the removal of soft downy hairs, chemical and mechanical depilatories constitute the only available means of treatment.

And now let us turn to the consideration of moles, warts, and other "beauty-spots." These blemishes are sometimes merely pigmentary, sometimes both pigmentary and hairy. They may be elevated above the skin, or level with it. Usually they are congenital, and are then known as *nævi* or birth-marks, but, under some

circumstances, they develop in childhood or even later. The colouring matter which constitutes them is deposited in the deeper portion of the subcuticle, so that a scar usually results if they are removed either by the knife or by the actual cautery—hot iron. Ligature by means of a silk or silver thread tightly wound round the root of the excrescence is a method applicable to large pendent warts, which, thus treated, shrivel and drop off, when the base can be cauterised with a nitrate of silver stick. Common warts, without a pedicle, may be removed by repeated applications of strong acetic acid, nitric acid, caustic potash, lunar caustic in pencil, tincture of chloride of iron and hydrochloric acid. In applying any of these remedies, care must be taken not to touch with them the surrounding skin, else a stain and scar may result It is best to isolate the wart or mole before putting on the caustic, by spreading a thin layer of soft wax or spermaceti over the adjacent surface. All the agents enumerated are liable, it must be borne in mind, to leave permanent marks behind them, and, in the case of moles on the face, these marks may after all prove to be more disfiguring than the original blemish.

Children and young people who suffer from abnormally moist hands, a feeble constitution, and general debility of health, sometimes have multiple warts of various sizes on the hands and fingers. In the treatment of these the internal administration of arsenic and other medicines is often advisable, combined with the local application of a paste made of precipitated sulphur, glacial acetic acid, and glycerine in equal parts. This paste must be freshly made at the time of using, and spread evenly over the warts. But the best of all treatments for the removal of moles, warts, and other pigmentary or excrescent blemishes is electrolysis. The mode of operation is the

same as that just described in the case of superfluous hairs, only that when applied to solid growths of skin more than one sitting is invariably necessary, and the duration of the galvanic action should be continued as long at a time as is found bearable. "Port wine" marks, which usually are amenable to no other treatment, may be removed in a similar manner, so also may *nævi* of other kinds, liver-stains, obstinate freckles, and even local skin disease, when independent of general ill-health. Affections of the cuticle characterised by thickening or infiltration are those which best lend themselves to the influence of the galvanic current. The powerful modification thus produced on the circulation, absorption, and nutrition of the tissues may even, Dr. de Watteville thinks ("Practical Introduction to Medical Electricity"), be brought to bear successfully on such forms of dermal affection as acne, eczema, neurotic baldness, chilblains, and herpes.

Electrolysis is especially valuable as a cure for cutaneous vascular formations, whether congenital or acquired. This kind of skin complaint is not uncommon, often appearing in mature life and in connection with acne or some other generalised affection of the kind. It consists of patches of dilated blood vessels situated in the subcutaneous tissues, irregular in shape, and varying in colour from dark purple to bright pink. These patches may appear singly or in numbers on any part of the face or person, but they are most commonly seen on the nose or cheek. Their aspect is that of a fine network of distended veins, tortuous and serpentine in appearance, and more or less distinctly outlined. The affected part often burns and assumes a shiny look. Vascular marks of this character, whether recent or congenital, can be entirely eradicated by the galvanic battery, after all other

known methods of cure have been vainly tried. Moreover, the use of caustics, blisters, heated irons, and knives often causes suppuration, is always more or less painful, sometimes, indeed, violently so, and is liable, after cicatrisation, to leave disfiguring scars. The pain caused by electrolysis is, as already stated, slight, and with some patients amounts merely to a disagreeable sensation; in every case it ceases immediately after the removal of the needle, and scarcely ever scars. Sometimes the cuticle which has been the seat of the nævus or of the mole assumes a thick white coagulate appearance, but this is not conspicuous, and is wholly unattended by contraction of the skin. The eradication of small and superficial formations, whether protuberances or vascular patches, by electrolysis, is never followed by permanent marks when the operation is ably performed. Considering, therefore, the manifest advantage of this method of cure, its rapidity, simplicity, safety, efficacy, and superior results, as well as the absence of all hæmorrhage, and the insignificance of the pain caused by it, I think it hardly worth while to trouble you with further details of other and less commendable modes of treatment.

VIII.

ON THE HAIR.—I

Dear Laura,—I propose in my present letter to preface the subject of the treatment and toilette of the hair by a brief account of its structure and physiology, so that you may the better understand the practical advice and suggestions I shall afterwards make.

Hairs, whether growing on the head, or on any other part of the body, are modifications of the cuticle. Every hair consists of a root, which is implanted in the skin, a shaft, or elongated portion, projecting from the root, and the terminal point. At the extremity of the hair-root is a bulbous enlargement, lighter in colour and softer in consistency than the stem; this bulb is contained in a follicular or sack-like involution of the cuticle, called the hair-follicle. Some hairs are more deeply implanted than others; the rule being that the longer the shaft, the deeper is the seat of the bulb. Thus the hairs of the head have roots embedded in the subcutaneous cellular tissue, while the fine hairs on the upper lip, and on the limbs, have short follicles reaching only into the superficial layer of the derma. When a hair is plucked from its follicle, the inner lining of the latter usually adheres to the bulb and is torn away with it, forming what is called the root-sheath. Every hair follicle has two layers, an outer or dermic, full of tiny blood-vessels and nerve filaments, and an inner, or epidermic. Open-

ing into the follicle are the orifices of the sebaceous glands, in which is prepared the oily matter whereby gloss and smoothness are imparted to the hair.

Do not suppose that the root of the hair is, like the root of a tree, the actual source and origin of the hair. A tree plucked up by its root cannot be reproduced on the same spot; unless replanted, it is for ever removed, and the place where it grew will know it no more. But a hair plucked up by the root reproduces itself, because its true point of derivation is not in its bulb, or so-called root, but in the dermic layer of the follicle containing the root, and in a small vascular papilla continuous with this layer, and known as the *matrix*. The cells formed by this matrix are always being pushed upwards into the follicle and massed together, so as to constitute the tissue of which the hair is spun. Most hairs are composed of three tunics, or tissues; some of two only. The outermost tunic consists of thin flat scales, having an imbricated arrangement, and capable of being detached from the inner layers by means of a strong acid, such as sulphuric acid. The next tunic is fibrous; its cells are elongated, and contain pigment granules, to the number and quality of which is due the distinguishing colour of the hair. The inmost layer, absent in fine short hairs, and ceasing altogether towards the point, even in the strong hairs of the scalp, is more opaque and deeper tinted than the fibrous tunic. It consists of fat granules and colouring matter lodged in large firm cells. A magnified transverse section of a hair shows the three layers constituting it, fitted one inside the other like the annular zones of an oak tree.

The quantity and quality of the hair varies with the temperament, the health, the hereditary constitution and predisposition, and the accidental circumstances of the

individual. Persons of nervous and lymphatic temperaments have usually less abundant hair than those of a sanguine or bilious temperament. Again, mental trouble and anxiety cause the hair to fall prematurely, as also does ill-health, especially disorders of the circulation and of the nervous system. A disposition to fret and worry, over-study, and sitting up late at night will weaken the hair and thin it rapidly. Among accidental and easily avoided causes of injury to the hair, the most common and baneful is the use of pads, heavy artificial plaits, fringes and head-dresses, tight-fitting bonnets or hats impervious to the air, and the wearing of night-caps. I cannot too strongly caution you against fixing cushions or padding to the scalp as a "foundation" over which to pile up a mass of curls or "twists." Not only do such things injure the hair directly, by overheating and drying the cuticle, but they are likely also to cause congestion and headache, and thus indirectly destroy the vitality of the germinal matrix whence the hair grows. Neither must you tie up your hair too tightly, or maltreat it with hard brushes and steel combs. Use a soft brush with long bristles, and, if the hair be thinning, an electric brush; only mind that it is really electric—that is to say, that a battery is attached to it. No brush can really be electric unless an electric current be supplied through it by means of a generator, and this current must be unmistakably felt and heard.

It is better not to use any kind of grease or pomatum to the hair. If you are well, and keep the skin of your head in a healthy state, Nature will supply all the lubricant that is necessary by means of the secreting oily glands attached to the hair roots. If, however, your health is not good, and your hair should become dry and rough, with a tendency to snap easily and to split at the

ends, you may now and then make use of a little simple nut or olive oil, which should be well rubbed in with the fingers upon the scalp, and not merely brushed over the surface of the hair. At all events never use lard or animal fats of any kind for this purpose, nor indeed, for any purpose at all in which the skin is concerned. They quickly become rancid, putrefy, and irritate the cuticle, besides being far more apt than any vegetable oil to collect dirt and cause the formation of dandriff.

In order to keep the hair and scalp in a healthy state, it is, of course necessary that they should be scrupulously clean. But beware of using irrigations of cold water with the intention of thereby cleansing or strengthening the hair. Nothing causes the hair so soon to thin and become grey and scanty as the frequent use of shower-baths of cold water. The best wash for cleansing the hair and scalp that I can recommend is made by putting into a quart of hot rain-water a piece of lump ammonia about the size of a Brazil nut, and two tablespoonfuls of solution of soft soap. By the time the ammonia has dissolved, the water will probably be cool enough for use. If you prefer carbonate of soda instead of the soft-soap solution, a piece about the same size as the lump of ammonia will suffice. Dry your hair well after washing with a rough towel—not "Turkish," however, else you will get your hair filled with cotton "fluff," than which nothing is more troublesome to extricate. It knots and rolls in the meshes of the hair, and can only be forcibly dragged out with a comb. The wash just mentioned is particularly suitable for fair hair, because both ammonia and soda tend to produce and preserve an auburn or golden hue. Dark-haired persons should use the yolk of egg beaten up with a little subcarbonate of potash or borax and warm rain-water. Some *brunes* use red wine—

the ordinary *vin rouge* of Continental countries—mixed with an egg and a very small quantity of soda. Red wine owes its colouring to the skin of the black grapes from which it is made, and it contains therefore a large amount of tannin, which is an excellent tonic for the skin and hair roots. If hair is scanty from hereditary tendency, or is becoming thin through constitutional ill-health, I advise the use daily of the following mixture:

Tincture of cantharides Jamaica rum	of each 2½ fluid ounces.
Glycerine	½ ounce.
Sesquicarbonate of ammonia	2 drachms.
Oil of rosemary	20 drops.

Mix; then add—

Distilled water	9 ounces.

Shake the whole well together.

A quinine wash, the efficacy of which I have myself tested and seen demonstrated, is thus composed:—

Sulphate of quinine	1 drachm.
Rose-water	8 ounces.
Dilute sulphuric acid	15 minims.
Rectified spirit	2 ounces.

Mix; then further add—

Glycerine	¼ ounce.
Essence royale, or essence of musk	5 or 6 minims.

Agitate until solution is complete. Next day decant the mixture, and use it once or twice daily.

Another formula, probably as good, and very popular, is thus composed:—

Liquor of ammonia	2 drachms.
Oil of sweet almonds	2 drachms.
Spirits of rosemary	1 ounce.
Otto of mace	1 drachm.
Rose-water	2½ ounces.

A more homely and simple recipe is the following,

the value of which is undoubted in cases of thinning and falling hair. I have witnessed its good effects and can answer for them. Stew one pound of rosemary for some hours in a quart of rain-water, then filter through calico, and add half a pint of bay rum: bottle the mixture, and rub some into the roots of the hair night and morning.

A little more elaborate, but similar is the following, for strengthening and improving the growth of the hair:—

Box-leaves	A small handful.
Boiling-water	1 pint.

Infuse this in a teapot until cold; then press out the liquor, and add to it

Jamaica rum	2½ fluid ounces.

If you find it difficult to procure the box-leaves, you can use good black tea-leaves (1 ounce) instead; but tea is not suitable for fair hair, because its tendency is to darken.

Other hair restoratives and stimulant lotions of infinite variety can be compounded. I have mentioned the foregoing as specimens of the best, or, at least, the best with which I am acquainted. In special cases, physicians may be called upon to devise special formulæ. In most ordinary cases of rapid loss or thinning of the hair the use of a hair-stimulant should be associated with careful cutting at intervals; but, concerning the science of hair-cutting, I have now no time to speak, so I reserve it for a future letter.

A lady who is, like myself, a qualified medical practitioner, and may therefore be presumably exonerated from the charge of superstition, tells me that she has reason to believe in the influence of the moon upon the growth of the hair and the proper periods for cutting it. Thus,

she says that the hair, if cut when the moon is young, grows with its increase and lengthens without thickening; if cut when the moon is waning, the growth in length ceases, but the hair increases in thickness.

IX.

ON THE HAIR.—II

My dear Laura,—It may very likely have occurred to you to wonder why the colour, texture, and characteristics of the hair differ so greatly in various individuals. Why, for instance, should my hair be fair and wavy and yours dark and straight? Or why, again, should Kate's hair curl so tightly and persistently, no matter what measures she takes to "smooth" it? and Isabel's be so soft and pliant that it refuses to retain for more than an hour or two the "set" given to it by the crimping-pin?

These individualities of the hair are partly of chemical and partly of mechanical origin. First, as to colour, it has been scientifically demonstrated that, in association with the natural oily substance contained in hair-tubes, there is always present, in the pigment of the cells, a certain quantity of mineral ingredient. The nature of the mineral varies in various races and individuals, and it is on this variation that the colour of the hair depends. Very fair hair contains magnesia; chestnut and brown hair is rich in sulphur, with but a small amount of iron; in black and dark hair, iron predominates. Grey and white hair contain only traces of sulphur, and no iron. The supply of iron pigment usually fails before that of the sulphur; therefore, black or dark hair is wont to turn grey earlier than fair hair, and blondes frequently

retain the pristine colour of their tresses, even in advanced age.

Acting on the inference drawn from these facts, it has been attempted to restore the natural hue of the hair, when faded in consequence of illness or senility, by rubbing into the scalp a thin pomatum or a wash containing sulphur or iron in a form capable of absorption by the hair-bulbs, and of reproduction in the tubes of the hair itself. Such is, in fact, the *rationale* of hair "restorers" or "darkeners," as contrasted with dyes. Both iron and sulphur may be harmlessly, even if not effectively, used in this manner; but a word of caution must be uttered against the substitution for these ingredients of lead, copper, or bismuth, none of which exist in the natural colouring pigment of the hair, and if absorbed into the system are liable to cause grave mischief, possibly ending in atrophy of the hair follicles or paralysis. Sometimes, with a view to the restoration of colour to prematurely whitened hair, iron or sulphur are administered internally with success. I can give you no recipe here for such medicines, because the condition and circumstances of the patient must in cases of this kind determine the form and manner of the treatment, and special medical advice would be requisite.

Next, the habit which the hair naturally assumes of being crisp and curly on some heads, and lax and straight on others, is due to the shape and character of the hair-follicle. You remember that I told you how every hair has its follicle or cuticular sac, out of which it springs, and within which it is moulded. Now, in some races and individuals, these follicles have a curved or spiral form, and hairs arising from such moulds naturally take a curly appearance, more or less crisp according to the

texture of their substance and the curve of the glandular canal. Hairs are not continuous tubes, but are formed by a succession of inverted cones, which, seen under a microscope, present a serrated or jagged aspect. The "curl" is caused by the volutions of these cones upon each other.

The texture of the hair, again, depends on the amount of gelatinous material contained in it. Moist, lax hair, flexible, lank, and inapt to retain "curl," is very gelatinous, and in order to dress it conveniently it is often found useful to employ a drying wash. In contrast to hair of this nature is seen the "fuzzy" lambent hair with which mediæval angels, and fairies of the "modern antique" school, are generally credited, containing a comparatively small quantity of gelatine, and being, as a rule, coarse to the eye and rough to the touch. It is a great mistake to apply grease to hair of the kind last described, or, indeed, I may add, to any hair, rough or otherwise. Grease, especially when solid and of animal origin, clogs the pores of the skin, prevents the free access of air to the hair roots, and suppresses the action of the natural secreting glands embedded in the scalp. A little—very little—olive or almond oil in a liquid state, is the only artificial grease that can be safely used. Vegetable fluent pomades, composed of some such oil mingled with some fragrant essence, should always be preferred to preparations of animal fat, all of which are extremely apt to become rancid.

For greasy, moist hair the following is an excellent drying lotion. If used daily it tends to produce a crispy condition and an auburn shade:

Powdered bicarbonate of soda . .	½ oz. of each.
Biborate of soda (also powdered) . .	
Eau de Cologne	1 fluid ounce.

Rectified spirit	2 fluid ounces.
Tincture of cochineal	⅛ fluid ounce.
Distilled water	16 oz.

Mix and agitate until solution is complete.

For dark hair, and in cases where it is not wished to produce an auburn tint, a good wash for drying purposes is thus compounded :—

Essential oil of almonds	1 fluid drachm.
Oil of cassia	½ fluid drachm.
Essence of musk	½ fluid drachm.
Rectified spirit	2½ oz.

Mix, and add gradually, with brisk agitation,

Distilled water	16 oz.
Dissolved gum arabic	1 oz.

When long-continued ill-health or any other cause has rendered the hair incoercibly stubborn and dry, the best means of treating it is by a glycerine lotion diluted with some perfumed distilled water, such as orange-flower or rose-water.

Another emollient hair-dressing, with an excellent reputation, is the following, the occasional use of which will entirely obviate the necessity of using pomatum, even in those cases which seem most to require the application of grease :

Price's glycerine	1 oz.
Eau de Cologne	¼ pint.
Liquid ammonia	1 drachm.
Oil of origanum Oil of rosemary	½ drachm of each.
Tincture of cantharides	1 oz.

Briskly agitate for ten minutes, then add

Camphor-julep	½ pint,

and again well mix and stir. A few drops of essence of musk or other perfume can be added.

Dr. Erasmus Wilson's recipe for a similar wash, more active than the preceding, is as follows:

Eau de Cologne	8 oz.
Tincture of cantharides . . .	1 oz.
Oil of English lavender . . .	½ drachm of each.
Oil of rosemary	

You can make your choice among these formulas. Cocoa-butter is often used for the hair, as well as for the hands, eyebrows, and lips. In a future letter I may have occasion to mention it, so it may be omitted from present consideration. You will observe that none of the formulas I have given you contain any lard or other solid fat. My reason for excluding these has been already stated.

After severe sickness or in cases of prolonged ill-health, when the hair "comes out in handfuls," and thins with great rapidity, it is advisable to have it cut quite short, and to keep it so for a year or two, treating the scalp regularly meanwhile with some tonic lotion, adding, if convenient, the occasional application of the stimulus of electricity by the means already described.

But it is not generally understood that hair-cutting, if intended to be really a regenerative process, must be conducted on scientific principles. The weakest and most sparse hair-growth on debilitated scalps is always along the central parting and about the crown of the head. Here, therefore, the hair should be cut more assiduously and attentively than elsewhere, care being taken that the hairs on the top of the head should be kept shorter, or at least as short as the lower and usually more robust growth at the sides and back. As a rule, however, the scissors are freely applied to the lateral and occipital hair, which is often cropped very short, while the hair on the crown and around the parting is left unduly long. Now,

it is precisely the upper hair which always needs most cutting, and which requires to be kept shortest in order to strengthen its growth and encourage that of the downy under-crop, liable in this region to be particularly fine and feeble.

The effect of keeping the hair short is to cause the hair-bulbs to expend on the short hairs and on the formation of new growth the stimulation and nutrition which would otherwise be appropriated by the excess of length. Moreover, the air and light reach and penetrate short hair much more freely and thoroughly than hair that is twisted up, compressed and pinned down closely on the scalp, thus excluding ventilation and its stimulating effects. Nothing is so beneficial to growth, whether vegetable or animal, as the free access of oxygen and of light. Again, friction is more easily administered to the scalp when the hair is short, and the value of daily and regular excitation of this mechanical kind is very great in cases such as that we are considering. The hair falls and thins for want of vigour and tone in the bulbs, and friction conduces greatly to the restoration of these qualities. Rubbing with *grease* should, however, be avoided, for grease will clog the pores of the skin and hinder rather than help the growth of new hair. Strong rosemary tea, or a weak solution of the essential oils of thyme or rosemary, may be advantageously used to facilitate friction. Oil of thyme is sometimes called oil of *origanum*. These essential oils excite the natural secretions, and promote the action of the glands without blocking them as solid grease does. If a little good rum or spirit of wine be added to the solution of thyme or rosemary oil, a still better and more stimulant lotion is produced. Ammonia may be used with the same object.

The presence of loose "scurf" or scales of light skin on the scalp is a great annoyance in some cases, especially after fevers and illness due to debility. This dandriff may be removed by the occasional application of a "shampoo" wash thus composed:—

Yolk of one egg,
One pint of rain-water,
One ounce of rosemary spirit.

Beat the mixture thoroughly up and use it warm, rubbing it well into the skin of the head.

This dressing is suitable not only as a cure for dandriff, but as a cleansing wash under all circumstances. It does not have the drying effect of a soda and ammonia ablution, but, on the contrary, it softens the scalp, and renders the hair very silky and smooth. Cases of persistent "scurfiness" can be successfully treated by the use of the following:—

Sesquicarbonate of ammonia . . .	½ oz.
Spirit of rosemary	¼ pint.
Rosewater	¾ pint.

Mix by shaking, and apply to the partings before brushing.

Now and then, even in youth and among abundant locks, grey and white hairs make their appearance. These colourless hairs, denoting insufficiency of pigmentary secretion, are due either to general debility of health, or to the want of local nutrition and vitality. Iron taken internally, under medical advice, and the use of red wine (claret) as a tonic head lotion, constitute the best treatment I can suggest. If the natural colour of the hair be dark, sulphate of iron can be advantageously added to the wine, in the proportion of seven grammes of the iron to 360 of the wine. Boil the two together for ten minutes. The iron sulphate can be dissolved in rain-water before adding it to the wine.

I shall say nothing here about baldness, for this is a complaint that very rarely afflicts our sex, unless under exceptional circumstances in which special medical treatment is requisite, or in extreme old age, when it would be idle to attempt to restore the hair.

No doubt you will expect me to say something about "curling fluids." Well, almost all these nostrums are injurious. In some the active ingredient is mercury and aquafortis, in others, salt of tartar. This last is not mischievous, so here is the recipe:—

Dry salt of tartar (carbonate of potash)	1 drachm.
Cochineal (powdered)	½ drachm.
Liquor of ammonia	1 drachm of each.
Essence of rose	1 drachm of each.
Glycerine	¼ ounce.
Rectified spirit	1½ ounce.
Distilled water	18 ounces.

Let this mixture digest with frequent stirring for a week, and then filter. Moisten the hair with the lotion when dressing. The effect will occur as the hair dries. I give this recipe rather to satisfy any cravings you may have on the subject of "curling fluids" than as a useful addendum to your toilette formulæ. For practical purposes, especially if the hair is to be curled or waved daily, a simpler preparation is advisable. This may be obtained by mixing ten or twelve grains of carbonate of potash with a pint or more of warm water and soap, preferably Pears'. Froth the water by brisk agitation, and moisten the hair with it, dipping the brush into the solution and distributing it thus throughout the hair until every part is damped. Then curl up the hair while still humid on kid and wire rollers, sold for the purpose by all hairdressers at 6*d.* or 1*s.* the packet. Of course this operation must be performed at night, on going to bed. In the morning, on removing the rollers, the hair will be

found crisply curled, and will retain its crispness much better than it would have done without the use of the potash solution. Heated irons should *never* be applied to the hair, either to curl or to crimp it. Their use will infallibly injure the hair-tubes, causing them to wither, snap, and perish.

X.

ON THE HAIR.—III.

My dear Laura,—I propose to-day to say a few words about dyes, premising that I strongly disapprove of the use of all dyes under any circumstances. Red hair is not now considered a misfortune, but the reverse; grey or white hair in old age is always beautiful and becoming; and it is far better to pluck out isolated colourless hairs occurring in youthful tresses, or to renovate the system by hygiene and medicine, than to use dyes for the purpose of concealment. As for the few cases in which an entire head of hair becomes white in early life, all I can say is that whatever the cause of the phenomenon, its effect is admirable. Really white hair is most becoming; it throws up the colours of the face amazingly, and makes even an ordinary complexion appear brilliant. It was for this reason that, a century ago, the belles and beaux wore white powdered wigs; and this snowy coiffure is still fashionable in New York. *Apropos*, Edith amused me immensely with her account of the Lytteltons' costume-ball last week. "My dear," she said, "we all went in hoops and brocades with our hair powdered white. You have no idea how well it made us look! We all said exactly the same thing to each other—'Why, how *lovely* you look, dear! I never should have known you.'"

The only kind of artificial alteration in the natural hue of the hair that I consider permissible, is the modifica-

tion produced by means of a bleaching agent, such as peroxide of hydrogen, also called "oxygenated water." The forms in which washes of peroxide of hydrogen are sold are numerous, and the best of them is, I think, Robare's Aureoline. Peroxide of hydrogen can, however, be purchased at pharmacies for about a shilling or eighteenpence the four-ounce bottle. By the use of this liquid, which is colourless and transparent as pure water, the hair may be gradually lightened in shade until its tint becomes of a pale flaxen, well-nigh white. But if its use be persisted in until this result is attained, the hair will suffer considerably, its texture and vitality will be seriously impaired; it will become brittle, decayed, and shrivelled. The legitimate use of the peroxide is limited to its occasional application for the purpose of imparting a bright auburn tint to otherwise sombre tresses, and giving them a gleam and richness of colouring which they would not naturally possess. Employed to this extent only, it is quite harmless, and, indeed, even beneficial to the hair. It must, however, be noted that the action and effect of this bleaching agent depend greatly on the original hue and texture of the hair. Some locks under its influence become pallid and faded-looking; to others it imparts a ruddy-gold shade, and on others again, it appears to exert little effect of any kind. The hair which best receives its action is dark brown, coarse hair, inclined to be crisp and curly.

Peroxide of hydrogen should be applied to the *hair*, not to the *scalp*. If persistent attempts are made to bleach the *roots* of the hair it will rapidly become weak, thin, brittle, and finally, dead. It is natural that hair should be darker at the roots than at the ends, because at the roots the supply of colouring pigment in the hair-cells is more copious, and the cells themselves more

numerous. Again, it is a mistake to attempt to render the shade of the hair uniform throughout. The most beautiful and luxuriant hair is never all exactly of the same shade. Artists most admire tresses of variable hue, affording rich shadows and high lights. Hair that is all over of one exact tint, like that of a wax doll, is suspicious —it suggests a dye.

In oxygenated water, the chemical symbol for which is H_2O_2, while that of water is H_2O, the second atom of oxygen is in a very loose state of combination, consequently the liquid readily decomposes under the action of light, or in contact with a metallic oxide, such as that of silver or manganese. It should, therefore, be always kept in a box or dark cupboard, and be put up in a blue glass bottle, well corked. Before applying it to the hair, a wash of hot water containing a solution of soda, borax, or ammonia should be used, so as to free the hair entirely from grease and dirt. If this precaution be not taken, the peroxide will produce little or no effect. After thoroughly cleansing the hair in the manner described, and drying it, the peroxide should be applied with a small sponge, the moisture being subsequently distributed by means of a clean soft brush with long bristles. This operation is best performed in the morning, and, preferably, in *sunlight*. When completed, the hair should remain unbound until dry. On the following morning the application of peroxide may be repeated, and again the third, and perhaps the fourth day, by which time the required hue will probably be obtained, and the hair should not be further touched with it for a month or even more. Then the washing with soda solution should be repeated, and the whole process as just described.

As for dyes, properly so called, they are always difficult to manage, great skill and experience being needed to

prevent staining the skin. Usually, hair begins to show greyness first on the temples: it is there, consequently, that it is most needful to apply the dye, and precisely there, also, that any discoloration of the cuticle will be most conspicuous and ugly. For which reason I revert to the protest against dyes in general with which I began this epistle, and strongly advise, in place of them, the use of a hair "restorer" or "darkener." Here is a specimen of a good hair-darkening agent:—

Rust of iron	1 drachm.
Old ale (strong) *unsweetened* . .	1 pint.
Oil of rosemary.	12 drops.

Put the mixture into a bottle, cork it very loosely, agitate it daily for ten or twelve days; then, after repose, decant the clear portion for use. Another is as follows:—

Sulphate of iron (crushed) . . .	1 drachm.
Rectified spirit	1 fluid ounce.
Oil of rosemary	10 drops.
Pure rain-water	½ pint.

Agitate until solution and mixture are complete. Many persons substitute for the rain-water good old ale. It is as well to state that both these washes will iron-mould linen if they come in contact with it.

A very good preparation for staining the hair, but partaking rather more of the nature of a dye than the foregoing, is composed thus:—

Pyrogallic acid	¼ ounce.
Distilled water (hot)	1½ ounce.

Dissolve, and when the solution has cooled, add gradually:—

Rectified spirit	½ fluid ounce.

The above is full strength. To darken patches of grey hair gradually, the mixture should be diluted with twice or thrice its weight of soft pure water and a little rectified spirit. Pyrogallic acid, the active ingredient in the

staining agent last described, is extracted from Aleppo or Chinese nut-galls.

And now, having clearly expressed my views about the use of dyes, here, my dear Laura, are a few recipes for the preparation of liquids designed to impart various colours to the hairs:—

A solution of pure rouge in a weak solution of crystallised carbonate of soda gives a bright red or reddish-yellow hue to hair, according to the strength of the preparation, if followed, when dry, by a "mordant" of lemon-juice or vinegar, diluted with from one-half to an equal part of water. An acidulated solution of tartar emetic (acidulated with a little tartaric, citric, or acetic acid), followed by a weak "mordant" of neutral hydrosulphuret of ammonia (or the bisulphuret), carefully avoiding excess, gives a reddish orange, which tones well on light-brown hair. A solution of bichloride of tin, diluted considerably, followed by a "mordant" of hydrosulphuret of ammonia, gives a rich golden hue to very light hair, and a golden brown or auburn to darker hair. But these processes require to be very expertly managed, and can only be properly applied by a hairdresser.

None of these dyes ought to be prepared by other than experienced hands, and the "mordant" must always be put up in a separate bottle. In every case the hair must be well cleansed from grease before the dye is applied.

If a *dark* dye is required, a choice can be made among the following formulæ:—

Green sulphate of iron . . .	2 drachms.
Common salt	1 drachm.
Bordeaux wine	12 fluid ounces.

Simmer these ingredients together for five minutes in a covered glazed pipkin, then add—

Aleppo nut-galls (powdered) . .	2 drachms,

and simmer again, stirring occasionally. When the liquid has cooled, add a tablespoonful of French brandy, cork the liquid up in a bottle, and shake it well. In a day or two decant the clear portion for use.

An old-fashioned dye, giving little trouble, is the following:—

Oxide of silver	1 drachm.
Liquor of ammonia	quant. satis.

Dissolve, and dilute the solution with three or four times its bulk of *distilled water*. If any precipitation occurs, more liquor of ammonia must be added, drop by drop, with agitation, until the precipitate be redissolved.

Hair moistened with this liquid gradually turns brown or black as the ammonia flies off, which it quickly does on exposure to warmth or light. Dr. Pincus and Mr. Piesse recommend a dye thus formulated:—

Nitrate of silver . . .	28 grammes.
Rose-water	225 grammes.

Dissolve. Diluted with an equal bulk of distilled water, it dyes the hair deep brown or chesnut; with twice its bulk of water, light brown; and undiluted, complete black. The natural colour of the hair also affects the shade produced. A dense black is obtained by the following dye:—

Sulphuret of potassium . . .	3 drachms.
Distilled water.	2 fluid ounces.

Mix. This solution must be freshly made before use, or it will not produce the required effect. Moisten the hair with it, then let it dry, and afterwards apply—

Nitrate of silver	1½ drachms.
Distilled water.	2 fluid ounces.

(Dissolved.)

The potassium sulphate, if good, ought to smell strongly. The second solution of nitrate of silver must be kept in a blue bottle.

The effect will be visible after a few hours' exposure of the unbound hair to the light. Any stains left on the skin can be removed by a rag or sponge wetted with the first solution of sulphuret of potassium, diluted slightly.

Endless modifications of the nitrate of silver dye, glorified by attractive titles, furnish the fashionable dyes so largely advertised and sold. It is, however, useless to give more recipes; those I have mentioned are certainly the best.

Before using any of the foregoing liquids, the hair must be freed from grease or dirt by washing it in the soda solution already described, and must be dried thoroughly before applying the dye. A soft tooth-brush is the best and most convenient implement for putting on and distributing the dye. The process must be repeated about once in every six weeks.

In order to prevent staining the skin while using hair-dyes, a good plan is to smear pomatum over it, so as to keep it from getting wetted.

XI.

ON THE HANDS AND ARMS.

My dear Laura,—Of course you understand that all I said in a former letter with regard to the injurious effect of hard water on the complexion, and the superiority of rain or distilled water, applies equally to the toilette of the hands and arms, and, indeed, to the skin of the whole body.

To have pretty hands, great attention must be paid to the nails. I have already said that the nails, like the hair, are modifications of the epidermis. The part of the finger-tip which lies beneath the body and root of the nail, is called the nail-matrix, because from it the nail is developed. The pink colour under the body of the healthy nail is due to the large vascular papillæ covering the matrix at this point. Near the root of the nail these papillæ are smaller, and less vascular, so that the transparent horn of the nail above appears here of a paler hue. The nails themselves are composed of cells, having a structure and arrangement similar to those of the epidermis. New cells are continually forming at the root and under surface of the nails, and as they grow upwards the old cells are pushed forward, and become denser and more closely compacted together. Weak nails are frequently speckled with white opaque dots and bars; these marks are commoner in childhood than in adult age, and frequently disappear as years advance,

and as the tone of the general health improves. They are said by certain extremely unscientific people to indicate peculiar mental aptitude and talent, and hence are commonly called "gifts." In order that the nails should be comely in appearance, they must be regularly and carefully cut with nail-scissors—never with a pen-knife—about once a fortnight.

Some people's nails grow very rapidly, and need still more frequent trimming. The shape of the fingers must regulate that of the nails, which should be cut so as to correspond with the curve of the finger-tips. As a rule this will be oval, and the nail must therefore correspond to that shape. The skin which naturally grows over the root and sides of the nail must be kept in its place by means of an ivory nail-trimmer, used after washing the hands in hot water, and while the skin is still warm and soft. With this little instrument the cuticle which tends to encroach on the lower margins of the nail must be forcibly pushed down and tucked under itself, so as to preserve to the nail a filbert shape. A slice of lemon should, if obtainable, be rubbed over the nails after this operation. Never use any kind of sharp or pointed instrument to clean the nails. A soft brush employed with care will suffice to remove all ordinary dirt; stains of ink can be effaced by means of chemical pencils invented for the purpose, and sold at all pharmacies. Some ladies, with the view of whitening their hands, sleep in kid gloves, and even line these gloves with poultices or pastes of grease, wax, bread, and other preparations. Such a practice appears to me not only uncleanly, but unhealthful, since it must certainly tend to hinder the free and natural transpiration or breathing process of the skin, a process which, especially on the palms of the hands, should be abundant and unre-

strained. For the same reason I think it always wholesomer to wear silk than kid gloves, especially in the evening, and at balls, when the skin is particularly apt to become hot, and to transpire freely. Long silk gloves are now largely worn, both indoors and out, and I rejoice at the fashion, for it is eminently sensible and hygienic. I have not myself worn kid gloves for several years, and intend never again to put them on so long as silkworms spin their glossy coils, and factories produce gloves of this lovely material.

Hands which easily become rough and red are often benefited by being washed in oatmeal water. Take some good oatmeal, such as that used to make porridge, and boil it in water for an hour, strain, and use the liquid to wash with night and morning. This will soften the skin, and whiten it. The beautiful Countess of Jersey, who retained her charms to a very late period of life, always used oatmeal gruel as a lotion.

This wash must be made freshly every day, for it soon becomes sour, and smells unpleasantly. If an equal part of starch be added to the oatmeal, the whitening effects of the lotion will be enhanced. For hands which are *very* red and coarse this wash will hardly suffice. In such cases a few grains of chloride of lime should be added to the warm soft water used for washing. Soap containing chloride of lime may be prepared thus :—

White powdered Castile soap . .	1 pound.
Dry chloride of lime	1½ to 2 ounces.

Mix and beat up in a mortar to a stiff mass with—

Rectified spirit	quant. sat.

Divide the mass into tablets, and envelope each closely with oilskin. You can scent this soap by adding to the mass a couple of drachms of verbena oil or cassia. Before

using chlorine soap or lotion, all rings and bracelets must be removed, else they will be tarnished. Cacao-cream, mentioned in one of my former letters on the hair, is frequently used for softening and whitening the hands. It is composed as follows :—

Cacao-butter	Equal parts.
Oil of sweet almonds	
Refined white wax	

Melt them together, and stir until cool. This mixture is sometimes called "cocoa-nut cerate."

A good emollient for a harsh skin, especially in winter-time, is thus prepared :—

Myrrh	½ ounce.
Refined honey	2 ounces.
Refined white wax	1 ounce.
Rose-water	1½ ounces.
Almond oil	1½ ounces.

Put the wax, rose-water, oil and honey together in a jar, place this jar in a bain-marie, and melt the contents of the inner vessel thus, over a stove or spirit-lamp. When the ingredients are well melted, add the myrrh, mix the whole well, and let it cool.

In a former letter on the complexion, I have already given a recipe for cold-cream; but, as you may like another formula, I subjoin that of M. Piesse :—

Oil of sweet almonds	500 grammes.
Glycerine (or rose-water) . . .	500 ,,
White refined wax	28 ,,
Spermaceti	28 ,,
Essence of rose	0·88 ,,

Put the wax and spermaceti into an enamelled or china pot, as deep as possible; then place this pot in a bain-marie of boiling water. When the wax and spermaceti are melted, add the oil, and melt the whole again thoroughly. Then pour in the glycerine slowly, stirring

all the time with an ivory spoon or spatula. When the cream is cool, add the perfume.

Young people, especially those of a highly nervous temperament, or of a weakly constitution, are frequently troubled with excessive perspiration of the palms of the hands. There are many degrees of this complaint, and it is usually worse in hot than in cold weather. Moderate forms of this inconvenience may be sufficiently treated by ablutions with very hot soft water, and the application, after careful drying, of pulverised lycopodium, oxide of zinc, fullers' earth, or a medicated powder thus prepared :—

Salicylic acid	3 parts	powdered.
Talc	7 parts	
Starch	90 parts	

Lemon in slices is also a good cosmetic in such cases, but it must not be used in conjunction with soap. Should the disorder be very obstinate, astringent and alcoholic lotions will be necessary. The following wash, for the formula of which I am indebted to a medical *confrère*, will prove serviceable in many instances :—

Liq. plumbi subacetatis	℥ iij.
Spt. vini methylati	℥ i.
Aquæ rosæ ad	℥ x.

Fiat lotio.

This wash should be allowed to dry on, and the hands should be subsequently dusted with one of the powders already named. Sulphate of zinc, one or two drachms to the pint of water; tannic acid, two or three drachms to the pint, and alum in like quantities, are recommended by many practitioners. The most valuable remedy for extreme cases which do not yield to any of the methods of treatment just described is found in the use of bella-

donna. Besides causing paralysis of the vasomotor system which controls the small blood vessels, belladonna contracts the unstriped muscular fibres which surround the arterioles supplying the sweat-glands; but the employment of this drug needs great care, on account of the poisonous effects it is capable of causing if used without due caution. If it is found necessary to resort to its agency, the best means of applying it is that recommended by Dr. Sydney Ringer. Rub lightly on the palms of the hands equal parts of extract of belladonna and glycerine, mixed together thoroughly. Or, wash the hands three times daily with carbolic acid soap and soft water, in which half a drachm of extract of belladonna has been previously dissolved. Carbolic acid exercises a benumbing effect on the nervous filaments which go to the secreting glands and the papillæ of the skin; so that its action is likely to materially assist that of the belladonna. It is advisable to associate the local treatment with a careful regimen, the administration of tonics, and avoidance of fermented liquors, pickles, tea, coffee, and highly spiced dishes, shunning, if possible, gas-lighted and heated apartments, particularly in summer weather.

Sometimes, when the skin of the hands or arms is much "chapped" or abraded by cold weather, it is useful to employ as dressing at night, a little emollient paste. This paste should be rubbed well over the cuticle, and then either lightly wiped off with a soft cloth after having remained on for about twenty minutes, or covered with an old cambric handkerchief torn into strips, and wrapped like a bandage over the hand or arm, thus obviating the unhygienic use of kid gloves at night. Almond paste or wax for the hands is made as follows:— One ounce of white refined wax; two ounces of oil of

sweet almonds, and a few drops of otto of roses. Another almond paste for the same purpose is made thus:— Take equal portions of pounded almonds and honey mixed with an equal quantity of pure oil, and the yolk of three eggs to every quarter of a pound of the almonds and honey. Mix the eggs and honey together, then the oil, then the almonds, then perfume as you like. As eggs do not keep, only a little of this paste should be made at a time. If you want it to keep long, you must leave out the eggs, and use three ounces of spirits of wine instead.

While I am talking of "chaps" and abrasions, I must not forget to give you the formula for camphor-balls, popularly regarded as a specific in such affections. Here it is:—

Spermaceti	2 ounces.
Refined white wax	2 ounces.
Almond oil (sweet)	¼ pint.

Melt by a gentle heat, and add—

Camphor (in shavings)	1 ounce.

Stir until all are dissolved thoroughly, and beginning to cool; then pour the mixture into slightly-warmed moulds or egg-cups. A drachm of balsam of Peru may be added while it is dissolving.

All the washes, creams, and lotions recommended for the hands are, of course, equally beneficial for the arms, shoulders, and neck. But, as a few special words of advice may be necessary in regard to the toilette of the arms, I must not omit to make particular reference to them.

Ladies whose arms are not well-turned and white should always wear long gloves at balls and dinners. If desired, these gloves can meet the short sleeves of the dress, or they may extend only to the elbow. The use

of mittens of similar length obviates the necessity of baring the arms at dinner or supper. If, however, arms which are otherwise comely are temporarily disfigured by undue redness, they may be blanched by the use of the following lotion, considerably *diluted* with soft tepid water:—

Chloride of lime (fresh)	½ ounce.
Soft water	¾ pint.

Mix by shaking in a bottle occasionally for two or three hours, then, after repose, filter the clear portion into a stoppered vessel, and add:

Carbonate of soda (crystallised) . .	3½ drachms.

previously dissolved in

Soft water	¼ pint.

Shake well for fifteen minutes, and again filter the whole through moistened coarse calico.

Another good, but less energetic, lotion for whitening the arms and neck is the following:

Powdered borax	3 drachms.
Glycerine	¾ ounce.
Elder-flower water	12 ounces.

This lotion, however, has a decided advantage over the former as an emollient. It is also fragrant, which is not the case with the chloride of lime wash.

Some persons are much troubled with profuse and odorous perspiration under the arms, in the *axillæ*. The chloride of lime lotion, which is a deodorant, will be serviceable in such cases; so also will be the application of lycopodium (club moss) powder, powder of oleate of zinc, perfumed by the addition of thymol and attenuated with starch or kaolin. All the powders and lotions which I have already named as suitable for the treatment of perspiring hands can be used with like effect for the axillæ, and, indeed, for any other part of the body

similarly affected. Excessive moisture of the hands is usually associated with the same condition elsewhere, although the secretion seldom smells unpleasantly on the palms, but is often extremely disagreeable in the axillæ and on the under surface of the feet. This odour, as well as the tendency to excessive secretion, may be checked by the use of ablutions of boracic acid, one part of the acid to twenty parts of hot water. In a pulverised form, boracic acid, mixed with starch, forms a useful dusting powder for arresting fetid perspiration either under the arms or on the soles of the feet. It is mild and perfectly innocuous; even mechanically, the crystals of boracic acid do not irritate abraded surfaces of the skin or mucous membranes, and it is therefore far preferable for toilet use to any preparation containing belladonna, which can only be safely applied to perfectly uncracked and healthy surfaces, and never to any other part of the body than the cuticle. In hospitals boracic acid is now largely used as an antiseptic, chiefly under the name of "Aseptin."

As for superfluous down or hairs on the arms, you will find the question treated in regard to the face, in my seventh letter. All that I say on the subject there is applicable to the arms, with the single difference that depilatories are more suitable for use upon the arms than on the face. The removal of "lanugo" from the arms by means of the galvanic needle would be very tedious and unnecessary.

Warts on the hands may be treated similarly to moles on the face or elsewhere, by excision with surgical scissors, cautery, caustic or electrolysis. These little deformities are commoner in childhood and early youth than in later years, and rarely appear save on weakly and strumous subjects.

XII.

ON THE FIGURE.

My dear Laura,—Our chat this week will be, with your permission, on the subject of the figure, its treatment and development. Many ladies afflicted with a superabundant opulence of neck and bosom have besought me to recommend them some lotion or drug which will have the effect of reducing this inconvenience. I always refer them to the advice I gave in Letter I., assuring them that no specific exists by which the bust can be safely reduced in dimensions, unless by the method of treatment there laid down for sufferers from general obesity. Astringent washes or unguents applied to the bosom, even if efficacious in absorbing a part of the adipose tissue under the skin, would infallibly leave the loosened cuticle wrinkled, flabby, and discoloured, and so impart an appearance of premature old age, incomparably more dreadful than the inconvenience of a little extra plumpness. On the other hand, not a few clients come to me with a request for some prescription by means of which they may attain a rotundity of bust denied them by Nature. To these petitioners I usually recommend the adoption of the farinaceous regimen advised in Letter II., with the addition of a local treatment, such as daily friction of the neck and bosom with "Fatima" lotion,* the efficacy of which preparation I have frequently tested, or with linseed oil

* Sold by Mr. Mason, Chemist, Bank Plain, Norwich.

added to an equal part of "Lait Virginal" (elder-flower or orange-flower water, 1 quart; simple tincture of benzoin, 1 oz.; tincture of myrrh, 12 drops), mixed gradually by stirring. At the same time, cod-liver oil, preferably Allen and Hanbury's "Perfécted,"—the best in the market,—should be taken internally, in small doses several times daily. Frequent ingestion of the oil in fractional quantities is more efficacious for fattening purposes than larger doses less often. The oil should be beaten up in warm milk and drunk, while in suspension, immediately after every meal. Whether "Fatima" lotion or "Lait Virginal" be used for external treatment, or even, simply, linseed oil diluted with orange-flower water and glycerine, the *friction* must never be omitted. It imparts firmness, solidity, and contour, and should be continued for five or ten minutes at a time morning and evening. As, however, the bosom in women is an especially delicate and glandular part of the body, this friction must be gently and evenly applied, never being allowed to cause abrasion or sensation of bruising. Such treatment may be advantageously supplemented by the daily practice of singing scales and vocal exercises for an hour, taking deep inhalations the while; and by the regular use of dumb-bells or the performance of calisthenic movements for the enlargement of the thorax and pulmonary capacity. Exercises of this kind, a full description of which I give in my Letters to "Sibyl," should form part of the physical training of every woman.

It should be remembered, in view of the functions which most women hope to fulfil, that the duties of motherhood are greatly dependent on the physiological development of the lactic glands. Where these are immature and incompetent to meet the needs of nature

much disappointment may result to the mother, and very real detriment to the child, which is, in consequence, relegated to some hired nurse, or brought up by hand. All the glandular structures of the body are benefited and aided in their normal growth and vigour by judicious manipulation and friction. The hair-bulbs, the sudatory-glands, and those of the digestive tract, equally respond to the stimulus of *massage* with increased or renewed power of secretion and development. The regular stimulus of gentle rubbing with the open palm of the hand and without undue pressure, constitutes the most suitable and the simplest method of promoting healthful functions, and counteracting any tendency to morbid arrest of development or secretive energy.

Need I say anything, my dear Laura, about the wickedness of tight-lacing? Shall I remind you that if you lace tight nothing can save you from acquiring high shoulders, abnormally large hips, varicose veins in your legs, and a red nose? Surely such penalties, to say nothing of heart disease, spinal curvature, or worse interior affections, are sufficiently dreadful to deter maids and matrons from compressing their waists unduly.

No adult woman's waist ought to measure less in circumference than twenty-four inches at the smallest, and even this is permissible to slender figures only. The rule of beauty is that the waist should be *twice* the size of the throat. Therefore, if one's throat measures twelve and a-half inches round, one's waist ought to measure twenty-five. The celebrated statue known as the Venus de Medici, the acknowledged type of womanly beauty and grace, has a waist of twenty-seven inches, the height of the figure being only five feet two inches. Consider what important and delicate organs are packed away inside a woman's waist. Within that cincture lie the

stomach, the liver, the upper part of the intestine, the spleen, the pancreas; and, immediately above, the heart and lungs. It is something worse than silly to compress and lacerate these organs. It is suicidal, and even murderous; for when girls who have deformed their bodies by tight-lacing become married women, their infants often perish before birth, in consequence of the folly of which the mothers have been guilty. Such acts are sins for which women are quite as much accountable as for any other moral transgression. It is far less stupid and mischievous to compress the feet as do the Chinese, for by this practice no vital organs are injured. Bones are crushed and sinews withered, it is true, but the great circulatory, digestive, respiratory, and reproductive centres are not interfered with. Corsets should support without constriction; they should be pliable and elastic. No man worth a woman's regard admires an unnatural waist, and girls are, therefore, greatly mistaken if they imagine that by deliberately abandoning the form of a human creature to assume that of an insect they are commending themselves to male admiration. By such conduct they only exhibit their own ignorance, stupidity, and vanity, besides doing their best to render the sex to which, by misfortune, they belong, ridiculous and contemptible in the eyes of all intelligent persons.

For my part, I recommend for your adoption corsets of the kind which I myself wear, made of perfectly permeable white canvas, stiff enough to afford comfortable support, while permitting free cutaneous evaporation; wholly innocent of whalebones, and having merely a very light steel busk, fastening easily in front. These corsets should be made by a skilled *artiste*, and moulded to the figure. The petticoats should not be tied over them round the waist, thereby producing

a bulky and ungainly effect, but attached to the edge of the corset low down on the hips, where the additional thickness is not disadvantageous. Over the corset should be worn only a single under-bodice of spun silk, which occupies very little room, and is warm, and so elastic that it may be fitted exactly over the stays, without wrinkling the dress or disturbing its "set."

From a hygienic, as well as from an æsthetic point of view, a multiplicity of petticoats is a great error in dress. Two underskirts suffice; one of these should be in white calico, flounced, to serve as a "crinolette" or "dress-improver;" the other—worn outside the flounced petticoat, and immediately under the dress—should be of some white embroidered material in summer, and of satinette or linsey stuff in winter. In place of the old-fashioned and unhealthful "flannel petticoat" which our mothers used to wear, a merino combination suit or a pair of flannel knickerbockers should be adopted. Of course, stocking suspenders must replace the odious ligatures, which, under the name of garters, were used, in an unscientific age, to disfigure the legs of past feminine generations. Our fashionable modistes are now adopting all these improvements in attire; and in the showrooms of the first-class *corsetières* now-a-days you will see beautifully-modelled corsets very slightly whale-boned, and constructed with a deft arrangement of hooks around the lower edge in such a manner as to prevent the bands of the petticoat skirts from rising above the hips. As for undergarments, the chief thing to be borne in mind is that the material of which they are made should be pervious, and that all highly glazed and "dressed" linen, cotton or calico is therefore unsuitable for clothing. The skin is constantly throwing off through its myriads of pores an invisible cloud of transpiration.

When this is shut in by impermeable clothing the result is a damp and clammy moisture which clogs the cuticle, soaks the inner garment, and becomes the fruitful source of rheumatism, cold and skin eruption.

The "dressing," composed of tallow, glue or other artificial substance, which gives the yarn of linens and damasks their gloss and smoothness, is not only by its nature detrimental to the skin when brought into contact with it, but its presence upon and between the fibres of the material renders the latter well-nigh impenetrable by the vapoury exhalation of the body, so that this exhalation, unable to escape by natural radiation, condenses and becomes watery. Soft web-like cotton goods are by far the best for under-wear, and they are manufactured for the purpose under Dr. Lahmann's directions by a Würtemberg firm named Wizemann, at an extremely moderate cost, considerably less than that of ordinary woollen fabrics. Dr. Lahmann calls his material "baumwoll" (tree-wool), and, indeed, for all intents and purposes, it may fairly be described as vegetable wool, possessing, however, one advantage over sheep-wool, even of the finest, to wit, that it never causes the tickling or irritation to which the epidermis, when very sensitive and delicate, is apt to be liable in contact with flannel or merino.

Some time ago I dwelt on the necessity of wearing woollen clothing in cold weather, and I may now point out that in cold damp climates like ours, woollen fabrics are especially requisite, and should, if possible, be worn next the skin over the entire surface of the body in winter. "Baumwoll" is, for this purpose, eminently serviceable and appropriate, its peculiar weft making it in the highest degree elastic, while its unglazed, unwrought surface answers all the ends of a fleecy garment. The

looser and "fluffier" the texture of the material, the warmer it is to wear, because it imprisons more air in its meshes, and this air becoming warmed by proximity with the body, retains a constant temperature over the surface of the skin, and prevents loss of heat from the person by chill. Feathers and down make still warmer apparel than wool, because they retain a yet greater quantity of warm air. If, however, duvet petticoats and jackets be worn all day, or duvet coverings spread over the body at night, headaches and other discomforts are apt to be produced, the free evaporation from the cutaneous surface being liable to be impeded by the want of permeability in the material used. It is, in fact, of the highest importance that, while we study warmth in our clothing, we should not forget the functions of the skin. Any fabric which solidly encompasses the body and hinders transpiration is unhealthful.

With regard to boots, I give the preference to the "Hygienic" or the "Sensible," which are admirable for walking purposes. Pointed toes are, of course, an abomination, whether for boots, shoes, or slippers. Besides looking hideous, these unnatural points are certain to produce corns and enlarged toe-joints, especially if associated, as is usual, with very high heels, the effect of which is to throw the foot forward upon the contracted extremity in front. Broad-toed boots, with *flexura* "waists," to support the instep—the comfort of which in walking long distances is very marked—heels sufficiently high to prevent untoward soiling of the dress skirt at the back, and sufficiently broad at their base to avert the rolling motion common in walking upon slender heels—these are the *desiderata* after which we ought to aspire, carefully avoiding impervious material, because it hinders cutaneous evaporation and produces

"tenderness," and preferring curved soles ("rights and lefts") to straight ones. In cold weather, cork soles, flannel-lined, should be put both in outdoor and indoor boots and shoes, for it is all-important to keep the feet warm and dry.

XIII.

ON THE TEETH.

My dear Laura,—To-day I am going to say a few words about the teeth, their structure, and their hygiene.

Human teeth, whether incisors, cuspids, or molars, are composed of four distinct substances. The exterior of every tooth is divided, anatomically, into crown and fang, the crown being the portion above the gum, and the fang the portion below. The outside of the crown is covered with a hard compact substance called enamel, which sometimes, especially on the molars, or grinding teeth, wears away, exposing the second layer or body of the tooth, that is, the dentine, otherwise called ivory. This material extends also into the fangs or roots of the tooth. It is not bone, for, alike in chemical composition, in structure, and in appearance, it differs from the ordinary osseous tissue in other parts of the body. The enamel which covers the upper part of the dentine ceases at the neck of the tooth, that is, at the part meeting the gum, and below this is replaced by a substance called cement, a thin crust of which surrounds all the ivory of the fang. In the interior of the tooth, beneath the dentine, is a cavity, and this cavity contains the fourth element of the tooth, the dental pulp, soft in consistency, and highly vascular and sensitive, being supplied with nutrition and feeling by means of small

arteries and nerves which penetrate to the centre of the tooth through narrow channels in its fangs or roots.

The rewards and penalties of heredity manifest themselves perhaps more strikingly through the teeth than through any other organs of the body. Scrofula and specific disease announce themselves from generation to generation by means of deformed, brittle, or discoloured teeth. Early decay and loss of the molars betray feebleness of constitution and vitiated blood, and may indicate some such particular expression of debility as tubercle in the lungs or analogous disease of the bony tissues. Apart, too, from the special heredity of the individual, all civilised races suffer more or less from dental disease and decay, and this phenomenon is traced by our best authorities to the abundant use made by such races of cooked food, and, in particular, of *hot* food. Hot meats and drinks are undoubtedly injurious to the teeth, and the taste for them is purely artificial, since we see animals, taught by natural instinct, invariably refuse food at a high temperature, and I believe the same observation has been repeatedly made in regard to savage men. If you give a plate of steaming hot soup or bread and milk to your cat or dog, he will not partake of it until it has cooled, and will wander about it wistfully, sniffing now and then at it, until satisfied that its heat has sufficiently subsided to allow him comfort in his repast. But the temperature at which he finally consents to eat it would disgust his master, and would cause him to consign the dish again to the cook with orders to have it "made hot."

Nothing, in fact, is worse for tooth, bone, hair, and complexion than our civilised and luxurious custom of daily swallowing hot food at all our meals. We begin the day with hot coffee or tea; at lunch, hot soup, hot

joints, hot potatoes, hot puddings; the same at dinner, and maybe, to wind up with, more hot coffee, or even hot "grog." And the worst of it is, that because habit is second nature, and is bequeathed to us through long generations, we like all these things so much as to esteem cold or cool viands and beverages positively insipid and comfortless. Among all civilised nations, Americans have the worst teeth, and consequently resort the most commonly to dentists and to dental operations; and Americans are precisely the people who eat most hot dishes, and who alternate them most ingeniously with icy-cold drinks. Even if we cannot induce ourselves to forego hot foods, we can at least refrain from mixing the use of ice with that of fire, and from alternating mouthfuls of steaming *potage* or *fricassée* with sips of glacier-cold champagne.

Then, again, teeth otherwise good are often destroyed, especially in childhood and early age, by over-feeding, by unsuitable food, and by the immoderate use of medicinal drugs, and in particular, by preparations of iron and mercury. Strong acids also damage the teeth by attacking the enamel, corroding it and softening it, and thus denuding the ivory. A tooth which has lain for twenty-four hours in a wineglassful of mineral acid becomes so soft outside that it may be dented by the simple pressure of the finger-nail. Persons who habitually take acid drinks usually suffer from decay or caries of the teeth. Such is notoriously the case with the French peasantry in certain districts of Normandy where large quantities of cider are consumed. Hence, acids should never be used as dentifrices, because, although they may momentarily whiten the enamel, they assuredly and inevitably destroy it in the long run. Tooth-powders and toilette lotions for the mouth should be either alkaline

astringent, antiseptic, or wholly inert. Alkalies neutralise the acidity of the products of decomposition and fermentation arising from the organic alimentary matters accumulated in the interstices of the teeth or elsewhere in the buccal cavity. If these products be allowed to remain, they will, by the precipitation of insoluble salts, cause the deposit of tartar on the surface and about the neck of the teeth, and ultimately lead to the retraction of the gums, their inflammation and atrophy, and to the loss of the teeth by loosening or decay. The nature of the dietary regimen has an incontestable influence on the condition of the teeth. M. Préterre, laureate of the Faculty of Medicine of Paris, and surgeon-dentist to the civil and military hospitals of that city, expresses his opinion in regard to this question in the following words:—

"The accumulation of tartar on the teeth varies according to the nature of the alimentation. This deposit is abundant on the teeth of persons living in towns and eating largely of meat: it is, on the contrary, found in very small quantities on the teeth of country folk who subsist chiefly on fruits and vegetables."—(*Practical Treatise on Diseases of the Teeth.*)

Astringent and antiseptic tooth-washes and powders exercise a beneficial effect in hardening and preserving the gums, and counteracting the results of fermentative action; inert powders, such as chalk, pumice-stone, cuttle-fish bone, &c., produce a mechanical effect only. Of all compositions sold as tooth-powders or "elixirs," those containing alum or tartaric acid should be the most sedulously avoided. M. Préterre says of such compounds:—

"If one were to try to invent a preparation for the express purpose of destroying the teeth in the shortest

time possible, nothing better could be imagined than a mixture containing acidulated tartar of potass and calcined alum!"

Recently prepared fine charcoal, especially areca-nut charcoal, which is somewhat scarce in commerce, forms one of the best dentifrices known, because of its whitening and deodorizing properties. Moreover, it acts mechanically as well as chemically, and cleans the surface of the enamel by friction without scratching it, as harder substances are apt to do. Here is a formula for charcoal tooth-powder which you will find very good:—

Areca-nut charcoal	5 ounces.
Cuttle-fish bone	2 ounces.
Raw areca nuts pounded . . .	1 ounce.

Pound and mix. Two or three drops of oil of cloves or of cassia may be added if a perfume is required.

For general use the following tooth-powder is excellent:—Powdered bark, half-an-ounce; myrrh, a quarter of an ounce; camphor, one drachm; prepared chalk, one ounce.

Camphorated chalk, which combines antiseptic qualities with the virtues of an inert powder, is an admirable dentifrice for daily needs. The camphor should be in the proportion of one-twelfth part to the chalk basis.

Soap dentifrices should be avoided. Almost all of them tend to make the teeth yellow.

Among liquids for cleansing and preserving the teeth, no preparation is better than the following:—

Camphor (powdered)	½ drachm.
Lump sugar	½ ounce.

Triturate to a fine powder and add

Dry blanched almonds . . .	½ ounce.

Beat up the whole into a paste; then make an emulsion with

Distilled water	½ pint,

very gradually added.

Or again, camphor julep, thus composed:—

Camphor	1 drachm,
Rectified spirit	20 drops,

triturated, and diluted with

Distilled water	2 pints,

strained through linen, is an excellent antiseptic tooth-lotion. In case the gums are spongy, tender, or disposed to recede from the teeth, the following compound will be serviceable:—

Tannin	½ drachm.
Tincture of myrrh	6 fluid drachms.
Spirit of horse-radish . . .	2 ounces.
Tincture of tolu	2 fluid drachms.

Shake and stir until complete solution.

If the teeth become brown by discoloration of the enamel, so that inert powders fail to cleanse them, a little lemon-juice may be permitted, applied on the tooth-brush, or by means of a rag. But it must only be used very rarely, and the mouth should be well rinsed with pure soft water afterwards. Apples, or the inside of orange-peel, may be effectively used in a similar way. Mineral acids, seductive on account of their bleaching properties, must be avoided with the most conscientious determination, for the reasons I have already stated; and if much vinegar be taken with food, the teeth should be cleansed after meals.

As a lotion for rinsing the mouth, a weak solution of borax may be beneficially used at night, and the teeth may be afterwards rubbed with a moderately soft brush and some neutral powder, such as camphorated chalk or orris-root. Finely pulverised pumice-stone may be employed *occasionally* for preventing the formation of tartar; but it should be sparingly used, and preferably by means of a cambric rag or a small piece of soft wood, the teeth being afterwards brushed in the ordinary way, and rinsed with water. Remember always that it is quite as necessary to clean the teeth at night as in the morning. Never go to bed without having thoroughly purified the mouth and teeth from the results of the day's repasts. Be careful, too, in cleaning the teeth, to pass the brush well behind the front teeth, both in the upper and lower jaw. It is at the back of the incisors that tartar is most apt to accumulate. In the morning, after completing the brushing operation, wash out the mouth with a tumbler-full of tepid water, with which a few drops of tincture of myrrh have been mixed. I may add here that the quality of the water used for drinking purposes and for rinsing the mouth is not without its effect upon the teeth. Water containing calcareous substances appears to exercise a disastrous influence on the teeth. It is to the habitual consumption of such water that M. Préterre attributes the dental disease and premature decay common among the inhabitants of Picardy, Holland, Champagne, and other districts supplied with silicious and chalky springs.

Never allow a decayed or hollow tooth to remain neglected, even though it does not cause pain. If it cannot be filled with gold or other stopping, have it removed; the administration of nitrous oxide (laughing gas) is now so easy and even pleasant a process that no

one need dread the dentist's chair. The presence of a decayed, and therefore decomposing, tooth in the mouth, is not only unsightly, but it is a continual danger for sound contiguous teeth; it infects the breath, impairs the digestion, and deteriorates the general health.

XIV.

ON PERFUMES.

My dear Selina,—I am quite ready to comply with your request that I should conclude my observations on the cosmetic and toilet arts by giving a brief summary of the history and science of perfumery. Perfumes are as necessary to the toilet of the gentlewoman as soaps, oils, and powders, and, indeed, all these are themselves invariably scented and so rendered agreeable for use. So ancient is the art of perfumery that its origin was by the Greeks imputed to the Immortals. One of the nymphs of Venus is said to have imparted to mankind the secret of extracting from flowers those essences by whose magic virtues the undying charms of her mistress were enhanced and preserved. The Egyptians, the Orientals, the Jews, the Chinese, the Romans—all, from time immemorial, made profuse usage of balms, incense, pomades, and liquid scents, which were carried about on the person in small vases of alabaster, or onyx, or in gold and silver caskets. Perfumed woods were burned in dwelling-houses and in temples; the bodies of the dead were embalmed with sweet-smelling resins, and no banquet was complete where the guests were not anointed with fragrant oils during or after the repast. In this country, the art of perfumery appears to have reached its height in the reign of Queen Elizabeth, who was greatly addicted to the use of scents, and who not only

wore a jewelled pomander on all state occasions, but caused her entire wardrobe, including even her shoes and gloves, to be perfumed. At the South Kensington Museum may be seen a perfume-coffer, said to have belonged to the Virgin-monarch, containing six separate compartments appropriated to as many different scents. Mary Stuart is also described as a great lover of perfumes, and some chronicles attribute to her in this respect an extravagance equal to that of the Roman ladies in the days of the celebrated Poppea, on whose funeral pile more perfume was consumed than all Arabia could produce in an entire year.

Under the Renaissance the art of perfumery revived with the taste for beauty and decorative architecture. Catherine de Medicis was everywhere attended by her perfumer, whose office at Court became one of considerable importance and honour. Diana of Poitiers, Marguerite of Valois, Ninon de l'Enclos, and other celebrated beauties made great use of scented waters and baths perfumed with various essences; hence the variously named toilet washes still in vogue, such as "Eau de Ninon," "Hungary Water," "Pompadour Scent," and the like. In the present day we are more refined in our appreciation of odours than were our ancestors of some centuries back. Strong perfumes, such as those commonly used to excess by Court ladies and gentlemen in the times of François I., Henri III., or Louis XIII., would be deemed coarse and overpowering in the salons of the nineteenth century. Even patchouli and musk are now out of mode, and their use in "society" would be generally regarded as a breach of good taste. The odours most in favour with us to-day belong to the ranks of the more delicate essences, such as violet, rose, cedarwood, jasmine, or heliotrope; and many of our fashion-

able perfumes are composite preparations, in which, by a judicious and scientific combination of some four or five different essences, a fragrance of remarkably subtle and tender character is produced. For instance, vanilla, almond, clematis, and heliotrope blend admirably together, and form an aroma as completely harmonious as the chord of a major key in a low octave, while lemon, orange-flower, and verbena mingled produce a perfume which may be compared with a similar chord sounded two or more octaves higher. So great is the analogy between odours and musical sounds, that the very gradations, *timbre*, and qualities of the latter appear to correspond with similar attributes of the former; there are scents suggestive of minor concords, of deep notes, or of high, clarion-like tones, and we speak quite naturally of odours that are "sharp" or "flat" according to the impression they produce on our olfactory nerves.

As for the strange connection subsisting between perfume and the mental processes, experience universally demonstrates the fact that nothing so instantaneously evokes and revives forgotten memories as the smell of some odour in affinity with events or scenes long since passed out of mind. Nor is it always easy to relate the scent in question with the recollection thus awakened. I cannot, for example, account for the circumstance that the odour of sweet peas invariably recalls to me the parlour of a little seaside cottage in which, when a child, I spent many very happy days. Certainly I have smelt sweet peas since then in hundreds of various gardens and houses, yet none of these is recalled to mind by the aroma in question, but only and always that one particular place, of which I am never reminded in any other way. And these memories are not mere indefinite recollections. They are vivid, sharp, instinct with life.

They spring up in the mind like actual revivals of the past, with all the accessories of minute detail and personal feeling associated with them years and years ago. As the magic odour floats over our nervous surfaces, the heart throbs again with emotions and hopes of which we have long ceased to have experience. Time rolls back, the atmosphere around us is changed—we are young, we are sanguine, we believe in love! But, in a moment, the curtain falls again; the perfume is dissipated or spent in the air, and no effort voluntarily made can continue or revive the charm. Memory sinks once more to her ordinary level of generalities, the *living* moment has passed, and we are back again in the existence and scenes of the present hour.

The scent of flowers has its origin, for the most part, in a volatile oil, or "essence," contained in the interior of the corolla. Some plants yield aromatic resin or "gums" by incision, as, for instance, benzoin, myrrh, and other balms. Balm of Peru and Tolu are prepared by boiling the plant which contains them, filtering the infusion, boiling it a second time, and then evaporating the liquid until a thick residue is obtained. Extracts employed as perfumes for the toilet, whether in the form of "eaux" or otherwise, are produced by four distinct processes, varied according to the nature of the flower or plant under treatment. These methods consist of expression, distillation, maceration, and absorption. The first process, that of *pressure*, is suitable only when the volatile essence of the plant employed is extremely abundant. In such cases mechanical force alone is sufficient to extract the odoriferous substance. A vice fixed in an apparatus capable of producing enormous pressure, regulates the operation and equalises the distribution of the weight. The liquid obtained by this method is sub-

sequently separated by filtration from the watery juices expressed with it.

Distillation is a more complicated process, but better adapted to the majority of plants. A large vase capable of containing some fifty or hundred litres is partly filled with flowers, and water is poured upon them. The receptacle is then covered with a dome-like lid, from which issues a tube curled like a corkscrew, the spirals of which are passed through a deep apparatus containing cold water. The mouth of the spiral tube terminates in a spout placed over an open jar. Heat is applied to the water in which the flowers are plunged, steam arises from it, and, having no other outlet, passes into the curved tube. Here the vapour is condensed by the cold water surrounding the tube, and being thus again reduced to a liquid condition, it issues in a watery state through the mouth of the tube into the receptacle set to receive it. The crude perfume thus obtained soon separates itself, by repose, into two layers, the heavier of which is easily divided from the lighter watery portion. It is thus that most toilet perfumes are procured, though in some cases, spirit of wine or rectified alcohol is substituted for the water poured on the flowers in the alembic, or, occasionally, a little salt is added to the water used, in order to raise its boiling-point. The process of *maceration* is accomplished by means of clarified grease or olive oil, into which the flowers under treatment are plunged, and in which they are allowed to remain, exposed to a high temperature, during twenty-four or forty-eight hours. The oil or fat becomes impregnated with perfume, the flowers, now exhausted of their essence, are strained out, and fresh ones introduced, and the process is continued until an oil of the required strength is obtained. When none of the three processes—pressure, distillation and

maceration—can be effectively employed, recourse is had to the fourth operation of *absorption*.

The fragrance of some plants is so delicate and so volatile that the heat necessary in the two last methods described would prove destructive, or at least injurious to it, and mechanical pressure would be insufficient for the purpose of extracting the essential principles. In the operation known as absorption, large frames with glass bottoms are used. These bottoms are covered with a layer of cold solid oil or clarified lard, and over this layer are thickly spread the petals of the flowers selected for treatment. After periods from twenty-four to seventy-two hours, these petals are changed for others, and so on, during, perhaps, two or three months. Grease has a remarkable affinity for volatile vegetable essences, and—contact with the open-air being avoided by covering in the frames, or piling them one on another—the odour rapidly attaches itself to the oily substance in contact with the petals, which thus becomes strongly saturated with it. This process is sometimes combined with that of mechanical pressure, the flower petals being spread upon oiled linen or cotton and submitted to the action of a hydraulic press.

To these processes, in general vogue both on the Continent and in this country, other supplementary operations have been added, such as the *pneumatic*, in which the agency of currents of air is employed to convey odoriferous particles into receptacles containing hot oil; and the method of *dissolution*, in which ether, petroleum, and other chemical media are employed, but this process is preliminary only to distillation and evaporation.

Such are the basic operations in vogue for the preparation of perfumes. Of course many varieties of method are practised, and many subsequent processes of blending,

harmonizing, and combining different odours so as to produce one of a complex nature. It is thus that new scents are invented by skilful manipulation of old materials, precisely as a musical composer makes new tunes by a novel arrangement of the familiar notes of the gamut.

A word before closing this letter about perfumed powders, such as are used to fill sachets for wearing on the person, or placing in wardrobes, dressing-cases, and so forth.

The basis of these powders is usually reindeer moss, in coarse powder (*lichen rangiferinus*). This substance is chosen because it has, naturally, a pleasant odour, and is very retentive of scent artificially mixed with it. Oak-moss and other lichens are sometimes, however, used instead. The vehicle thus chosen is, when washed, dried and pulverised, known as Cyprus-powder.

In order to make scented powders "aux fleurs," whether of roses, jasmine, violets, orange-blossom, or otherwise, the Cyprus-powder is mixed with about a twentieth of its weight of the petals of the flower selected, in a fresh state. The mixture is then lightly shaken together in a covered tin canister, and stirred several times in the course of the day. Next day the petals are sifted out, fresh ones added, and the stirring repeated. In this way a new supply of petals must be added three or four times, and the powder will then be sufficiently perfumed. Sometimes, and almost always for commercial purposes, the prepared Cyprus-powder, instead of being shaken up with flowers, is merely scented by the addition of ground tonquin-beans, cloves, orris-root, *calamus aromaticus*, ambergris, cassia, musk-seed, sandal-wood, oil of bergamot, of millefleurs, of vanilla, of lavender, of patchouli, of neroli, or otto of roses.

Here is a specimen formula:—

Orris root, coarsely powdered	2 oz.
Cassia do.	1½ oz.
Cloves do.	1 oz.
Cedar wood rasped	of each ¼ oz.
Yellow sandal wood rasped	
Ambergris, powdered	of each 6 grains.
Musk-seed do.	

Mix. Then add—

Oil of lavender	of each 1 drachm.
Oil of bergamot	
Otto of roses	15 drops.

Blend the whole thoroughly with a chosen proportion of Cyprus powder.

XV.

ON "BABY."

Dear Mrs. Cameron,—I am sorry to hear your baby is not thriving quite so well as you could wish; but from the account you give me I gather that there is no reason to apprehend anything serious, and a little attention to hygiene will, I doubt not, speedily set matters right.

As he is your first baby, of course you cannot be expected to display much experience in your management of him, and I fear that your nurse has some ideas about infantile diet which—to put it mildly—are slightly unscientific. Your baby was a healthy child enough when he was born, and as he has now reached the age of four months without any grave complaint, I feel sure that his present indisposition must be owing only to a want of judgment in your method of treating him.

You tell me you nurse him yourself, that your health is good, as indeed it always has been, and that there is nothing amiss in your appetite, digestion, or strength. So far, this is all well, and we may assume, therefore, that the quality of milk your baby gets is above suspicion. But that is not everything; there must be law in the nursery as elsewhere in this world; times and seasons must be strictly observed, and the utmost attention given to details of feeding, clothing, and general sanitation.

First, then, I shall speak of your baby's diet, and of the rules to be observed in regard to it.

Let him be fed every three hours during the day, never more frequently, even though he should cry and seem hungry. Give him his last meal at night, about half-past ten, and he will then need nothing more until about five, or even six o'clock the following morning. It is a bad plan to rise in the night time to nurse a child; the mother's rest is thereby broken, her functions disturbed, her health impaired, and habits engendered which will prove injurious alike to her own organism and to that of her child. Of course, during the first two or three months of infantile life, when the child requires feeding more frequently, the above rule cannot be observed; but after four months a healthy baby can very well sleep for six hours at night without needing any aliment. Accustom your infant, therefore, to sleep as long as he can without food. If you have been used to nurse him at intervals during the night, gradually lengthen those intervals until you approximate to the hours I have named. Three pints of milk daily is fully sufficient for a baby four months old, and as you are a healthy woman, this is about the quantity with which Nature will furnish you every twenty-four hours. Let this suffice, and on no account add to this regimen any kind of artificial food, otherwise you will ruin your baby's digestion, and predispose him to serious complaints in later life. Be careful, while he is being fed, to hold him in an easy and reclining position, and let him lean to the right side, *not to the left*, both during and after his meal, because the liver in infants is extremely large, and as this organ occupies the right side of the body, it will, if the child be laid on the left side, press unduly on the stomach, and so cause sickness and vomiting.

You say nothing about your own diet; but it is perhaps as well to suggest to you that boiled milk, eggs, fish, rice, sago, porridge, farinaceous puddings, and vegetables in moderation constitute the food most commendable to nursing mothers. Pea-soup, lentil-soup, turnips, and parsnips are especially useful. On the other hand, you should carefully avoid pork, veal, bacon, ham, salt beef, duck, goose, sausages, tripe, liver, kidneys, heart, and all rich dishes. Do not take alcoholic stimulants; it is far better to drink boiled milk and water while nursing, than porter, ale, or stout. I have seen the very best results to both mother and child from the adoption of a milk regimen by the former.

Be sure you get, every day, a fair amount of exercise and fresh air, and let your mind rest as much as possible.

You ask me at what age your baby should be weaned. It is customary to wean children at seven months, but I consider this too early an age. I think no child ought to be weaned until the first four teeth are through the gums, and this does not occur in some cases until the ninth or even the tenth month. Of course, if the mother's health should fail, or the proper supply of milk not be forthcoming, some preparation of an artificial kind must be given to supplement the natural food. For this purpose, I recommend the following aliment, for the formula of which I am indebted to eminent medical writers:—

Fresh cow's milk	1 pint.
Skimmed milk	½ pint.
Hot filtered water	½ pint.
Sugar of milk.	1 ounce.
Bicarbonate of soda, in powder .	10 grains.

The sugar of milk, which can be bought at any chemist's, should be first dissolved in the hot water, mixed, and

then added to the other ingredients. For a child ten or twelve months old this food should be replaced by more solid aliments, such as boiled and sweetened cow's milk, thickened with light biscuits, or rusks, tops and bottoms, &c., broken small and reduced to a pulp. Thickened milk can also be made by means of cooked wheat-flour, or other meal. To prepare this, spread the flour loosely over the surface of a clean, ungreased tin, and let it stand in a moderately hot oven until the flour becomes baked to a light brown. The object of this process is to break up the granules of the flour and thereby render the food easier of digestion. Remember that all infantile foods must be administered *warm*, not hot, but about the temperature of the mother's milk, and that the feeding bottles and tubes used by the child must be kept scrupulously clean, and be well emptied and rinsed out after each meal. Do not make more food at a time than the quantity needed for one meal—about a quarter of a pint to half-a-pint—according to the age of the baby; and never keep until evening the food prepared in the earlier part of the day. When the bottle and tube are cleansed, let them lie in pure cold water until next wanted.

Where you have cause to distrust your milkman, you should use the "Artificial Human Milk" of the Aylesbury Dairy Co. You will also find the Swiss *unsweetened* condensed milk, which is sold in tins by all grocers, a good and safe substitute. Dilute it with from four to six times its volume of warm water. Remember, however, that even the *un*sweetened milk does not keep well after the tin is opened, therefore be cautious in using it. Do not on any account use the sweetened milk. The sugar contained in it cannot be digested by a baby's stomach. Later still, when your child is able to masticate well, you can give such foods as porridge—Nichols' "Food of Health" is

the best I know of for the purpose—Brown and Polson's Corn-Flour, sago, hominy, semolina, light custard pudding, bread jelly, fruit syrups, and so forth. But I would never permit a child of tender years to consume fleshmeats in any form.

Next, let me give you a few suggestions about clothing. Your baby's garments should be loose and frequently changed. As children of an early age require much warmth, the best material for their underclothing is soft fine flannel. Be sure you have your baby's nightgown made of flannel, with a long skirt, for, like all children, he will certainly be apt to toss off his bedclothes at night, and it is therefore necessary he should be protected against any chill that might ensue before you awake and can cover him up again. You must be careful to keep his feet warm all day and night, and for this purpose nothing will be found so useful as knitted woollen socks. Let him always sleep in his crib beside your bed, but not with you in your own bed. Keep him out of currents of air, and be careful not to place his crib between a window and door. Until he is fully three years old, he will want to sleep the greater part of the day. Six hours every day should be passed by him in slumber, besides the repose of the night. But if, at any time, either night or day, he should not seem inclined to sleep when he is laid down for the purpose, do not *rock* him. Rocking induces slumber, it is true, but it is by congesting the blood vessels of the brain, which are in child hood singularly susceptible and delicate. Take the child in your arms, if he will not sleep, sing to him, or put him on a mattress in front of the fire and let him feel the warmth of the flame on his body. Children are often sleepless because they are cold.

Twice a day, morning and evening, let your baby have

a bath of soft water. The water used must be tepid, about 85° or 90° Fahr. For the morning bath use Pears' unscented soap, making a lather of it, and applying it plentifully over the whole body, the head included. In the evening you do not need the soap. Be sure you do not use *hard* water, containing alkaline salts, for your child's bath. Immediately after he is washed, envelope him in a warmed Turkish towel, and rub him all over, thoroughly and briskly. Then powder him from head to foot with simple violet powder, taking care to employ the best quality you can procure. As soon as the child is dressed in the morning, or even before he is dressed, if the weather be not too cold, put him on his mattress before the fire, and let him kick there to his heart's content. If this is done before he is dressed, he should be loosely wrapped in flannel, in such a way as not to impede his free movements. As he grows older, let him crawl about as he likes, only mind that no pins are dropped about on the floor, and that all draughts are carefully excluded from under doors and windows.

Exercise, untrammelled and vigorous, is as necessary in infancy as in adult age. In fine weather you must see that your baby gets taken out into the open air once every day about noon, for an hour, well protected from cold, but without any constriction about the throat. Cloaks or tippets hanging from the neck are most injurious, the free passage of the air in the windpipe is thereby hindered, and choking may ensue. I hope you get plenty of sunshine and air in your nursery. While the nurse and baby are out for their walk, open the windows of their room; and, unless the weather be too cold, do the same again later in the day while you take the baby into the drawing-room for a change. Sunshine, remember, is the best thing possible for your child, and

you should let him have all you can of it. Fire-warmth is the next best thing, but nothing can compensate for the want of sun-heat and light. Mind you keep an efficient nursery-guard before your fire, and burn wood, if you can, rather than coal.

XVI.

ON THE CULTURE OF BEAUTY, GRACE AND HEALTH IN YOUTH.—I.

My dear Sibyl,—You are wise to turn your attention to the care and culture of beauty in your children, and I will gladly do what I can to be useful to you in your laudable design. It is far easier to lend a helping hand to Nature in the development of good looks during childhood and youth than to correct her mistakes in adult age. For the body as well as the mind is most susceptible of impression and training in early years, and, if one may so speak, the habit of beauty is easier to acquire then than in any subsequent period of life. Mothers ought, therefore, if they wish their sons and daughters to grow up fair, straight, and well-formed, to superintend their physical education with a care as great as that bestowed on their intellectual culture, never allowing the interests of the former to be sacrificed to those of the latter, as is now too often the case in these days of relentless cramming and perpetual examinations. It is a priceless good for a boy to be handsome, for a girl to be beautiful, and for both to be healthy, graceful, and strong of limb; but these blessings are not altogether fairy gifts,—they can, in most cases, be made or marred at will, and the power of withholding or conferring them is chiefly vested in the hands of the mother. Under the head of "beauty" I include, of course, health and good

sense, for no boy or girl can be really beautiful who is either sickly or foolish. A weakly body, a pallid skin—*pace* Mr. Burne Jones—or a vacant expression of face cannot but be considered inimical to physical charms.

Every mother should, if possible, nurse her own baby, supposing, of course, that she is healthy and able to undertake the duty in question with comfort and success. When weaned, the milk of cows, goats, or asses should for a full year form the staple alimentation of the child, with a small allowance of some light farinaceous food, such as that I recommended in my letter to Mrs. Cameron. As, in that letter, I gave many minute directions for the preparation of baby-foods and the management of infants, and as you can easily turn to it for details, I will not now dwell on the subject of nursery cookery and hygiene with regard to the first period of existence, but will devote myself to the consideration of the diet and manner of life to which children should be accustomed from the age of two years and upwards.

And this is the place to say a few words on the question of heredity. We are all of us branches of a tree, part and parcel of the stock from which we spring. One of the commonest errors of unthinking or uninformed people is to speak and write on the subject of physical education as though every child were an independent and isolated product of Nature, capable of being developed to a condition of perfection exactly proportionate to the method and amount of training which he or she personally receives. This is very far indeed from being the case. Environment, of course, may do much in the way of modification, but it can only modify the material on which it operates, and this material is vastly different in different individuals. We are not ourselves only; we are the representatives or deputy selves of our parents,

grandparents, and collateral relatives. To use a suggestive metaphor, it may be said that children are but newly-issued editions of old compositions, re-bound and corrected, with fresh introductions, modern print and headpieces, but the text is that of former editions handed down from generation to generation. If the parents on either side, their progenitors, or even remoter ancestors, have been gluttonous, intemperate or otherwise vicious, physically or mentally, the children of such a line will bear about in their bodies and intellects the fruits and results of these defects. Drunken habits in the father may show themselves as epilepsy in the son; luxuriousness in the father may produce gout or liver disease in the son; and other sins will visit themselves on the offspring of the sinner in many terrible and even loathsome forms of malady.

Consumption, insanity, rheumatism, asthma, heart complaint, cancer, Bright's disease, hysteria, deafness, blindness, imbecility, and many other more or less painful and mortal disorders, are hereditary penalties imposed by a vicarious law upon the sons and daughters of those who have lived amiss, whether ignorantly or wilfully. For Nature does not stop to ask whether infringement of her mandates is deliberate or unwitting; her law is inflexible; she knows neither caprice nor forgiveness. "Punishment," says Hegel, "is not something arbitrary, *it is the other half of crime.*" Or, again, in more definite terms, we are told in the *Pâli Dhammapada* that "evil deeds, like newly-drawn milk, do not all at once turn sour," but the sourness is nevertheless inevitable, sooner or later; "pain follows trespass as the wheel follows the foot of the ox that draws the carriage." And if we turn to the Hebrew prophet we read: "The fathers have eaten sour grapes, and the

teeth of the children are set on edge,"—a figure which admirably pourtrays the law of heredity, inasmuch as the real offender against Nature frequently escapes almost wholly the reckoning which his child has to defray by lifelong suffering. Thus it is often said, "Robinson drank two or three bottles of port every night of his life, and died in a green old age without a symptom of gout." Investigation would probably show that "Robinson" had healthy and temperate parents, the benefit of whose virtue he enjoyed in his own person. But the son of "Robinson" has a poor chance. *He* will get the gout that his father has earned, or, may be, something worse. Heredity is, then, a factor in our lives which may be either for good or for evil. In scientific parlance it may be either physiological or pathological. Physiological heredity, or transmitted health, is, however, more uncertain and limited in its character than pathological heredity, or transmitted disease. It is seldom that the effects of right living hold their own against the mistakes of posterity throughout six generations. Yet this is undoubtedly the case with the effects of evil living against attempts to counteract them. Sometimes, in cases where the lives of the immediate parents of some afflicted child have been irreproachable from the physiological point of view, inquiry elicits the fact that the habits of a grandparent, or even of some remoter relative, were irregular.

Insanity, idiotcy, epilepsy, and gout may be mentioned as diseases especially liable to develop in alternate generations. Sometimes even two or more generations may be missed, and reversion may occur in a third or fourth remove. Nevertheless, Nature always tends, in the long run, to eliminate diseased conditions; the physiological state is the regular and normal state; the pathologica, is the abnormal and accidental. Every generation, there-

fore, of an infected stock exhausts a portion of the poison, and so attenuates it that at length it becomes wholly purged away. The seventh generation is, by most medical authorities, regarded as that which establishes the boundary line of the hereditary transmission of any special malady.

Three principal features, as a rule, distinguish hereditary complaints: the marked severity of their symptoms, —often wholly disproportionate to the accidental cause by which their manifestation is provoked: their tendency to relapse easily, and to assume a periodical or habitual type; and their custom of appearing for the first time in a new subject at the same epoch of life and in the same organs as in the previous generation. Some hereditary diseases of the more virulent kind, such as scrofula, tubercle, epilepsy, and skin disorders appear in early infancy, and render necessary the most stringent and incessant vigilance from the hour of birth. Others, such as rheumatism, asthma, hysteria, and heart disease, appear later, or await some provocative cause to manifest themselves for the first time; others again, as cancer, gout, kidney and arterial disease, develop in middle age, or even towards the close of life. Consanguineous marriages in families affected with any special taint have a most disastrous influence on the offspring, which thus inherit, as it were, a double portion of morbific virus, and are apt to manifest the malady common to both parents in a violent and speedily fatal form.

I cannot quit this interesting and important subject of inherited health and disease, without reminding you of the effect which a wet nurse may have upon the physical and even mental constitution of the child she rears. A nurse of scrofulous, cancerous, or rheumatic tendency, for instance, may infect a nurseling in no way related to

her; and diseases too horrible to name may be conveyed by her milk. I know a remarkable case, in which the whole mental type of an individual appears to have been modified by that of the foster-mother; the child in question, now grown to manhood, exactly resembling in disposition and idiosyncrasy the woman who nursed him, not the mother who bore him, nor, so far as can be ascertained, any of his proper relatives. Such facts show how highly important it is for those mothers who are forced to confide the nourishment of their infants to strangers, to make a judicious and careful choice, assisted by professional guidance, and by a knowledge not only of the person, but of the antecedents of the substitute selected.

XVII.

ON THE CULTURE OF BEAUTY, GRACE AND HEALTH IN YOUTH.—II.

My dear Sibyl,—Having in my last letter pointed out to you that children are to be considered, not as isolated creations, but as products of hereditary evolution, and that, therefore, their constitution and general characteristics will be those of the stock from which they are derived, you will now be able to understand that the physical training of boys and girls ought, if conducted on an intelligent basis, to be modified and adapted to their particular type of inherited temperament and capacity. For example, the children of a family in which valvular disease of the heart has persistently shown itself, should not be set to violent gymnastic exercises; the boys should not be encouraged to play football, or to row in University races; the girls should not be permitted to become addicted to hunting, or to frequent tennis. Others, among whose relatives a tendency to consumptive lung disease is prevalent, should, on the other hand, from early age, be accustomed as much as possible to a life of robust activity in the open air; sedentary occupations should be avoided as far as is consistent with the demands of a fair education; nourishing food, in small quantities, should be frequently administered, and they should live in a dry climate, if possible at a high altitude, and on a gravel or sandy soil. In short, every special tendency

requires special adaptation in the method of physical education employed, and a medical opinion should always be taken before any particular course of training is determined upon. As a rule, however, at the present day, children, and more especially girls, suffer considerably from privation of exercise. Games which involve disciplined and free movement of the limbs are not sufficiently encouraged among them. Too much stress is laid upon restraint of demeanour; dancing, of the sedate and subdued order, in close and artificially-lighted rooms, is too often viewed as an efficient substitute for horse-riding, swimming, and other outdoor exercises requiring effort and capacious action; and the consequence is that a large majority of the gentler sex, particularly among town-bred girls, grow up to maturity with narrow chests, crooked spines, and stunted muscular development.

Let us pass in review the method which ought, as a general rule, to be pursued by parents desiring for their children the full benefit of a healthy training. Your young folks, my dear Sibyl, are girls, so we will, while speaking generally for both sexes, treat more particularly of what concerns the physical education of the comelier half of humanity.

It is essential that, from the earliest days of infancy, children should be plentifully supplied with good air and food, if they are to develop clear complexions and robust frames. Nurseries should face the morning sun, if possible; they should be light, spacious, and well ventilated. Do not put stays of any kind on your children before the age of fourteen or fifteen; until then a light-fitting band of jean sufficient to support the under-clothing comfortably, is all that is needed to preserve the grace and contour of the figure. During childhood the bones are comparatively plastic, and undue stricture or pressure of

any kind is liable to produce deformity. Beware, therefore, of impeding or spoiling the development of the form by artificial bandages, whether corsets, garters, waist-strings, or an excess of weight hung from the hips. All garments worn by children should depend from the shoulders; a simple sash, lightly tied over the outer frock, is quite enough to indicate the waist. In this respect the French are very wise. No Parisian child is ever seen with a "waist." As for the stockings, they should be held up by means of suspenders, never by ligatures above or below the knee. Garters impede the circulation grievously, and thereby give rise to the distressing and disfiguring complaint of varicose veins. In our variable climate children should wear high-necked frocks, with sleeves reaching at least to the elbow. In winter the sleeves should be quite long, or else warm mittens should be worn as a protection against frost-bites. When out of doors, the feet should be stoutly shod as a precaution against damp, for children have in general an inveterate fondness for puddles and moist places, and when not assiduously watched, usually contrive to walk through any marshy grass or watery depressions in the footpath that may chance to be in their way. Indoors, however, I think it is best to leave children's feet as uncompressed as possible, and I therefore prefer shoes to boots, unless there is any special reason for the use of the latter, as, for instance, a marked tendency to coldness of the extremities, chilblains, weakness of the ankles, and so forth. In any case, never buy for your children pointed or high-heeled shoes or boots, but see that they are made with square broad toes, and a simple lift at the heel of not more than a quarter, or at most half an inch in thickness.

While your children are still infants, let them roll

and tumble about on the floor as much as and in what fashion they please; do not be too anxious to set them on their legs, otherwise you will run the risk of imposing a strain on the bones and muscles of the lower limbs that may induce feebleness of the ankles, curvature of the thighs and legs, and other similar evils. When they begin to get strong, and to acquire the power of control over their limbs, accustom them to the use of rhythmic exercise of the arms, legs, and body. Five years of age is the earliest at which any orderly gymnastic or calisthenic movements should be taught. The object of such movements is to develop muscular force, to give the limbs agility and suppleness, to open the chest and increase the lung capacity, to fortify the constitution, to regulate and facilitate the digestive functions, to equalise the circulation, to enhance the development of the mental powers, to create and preserve beauty of form, grace of outline and of movement, and just proportion and rotundity of limb. The Greek maidens who ran races in the public games, and tossed the "sphaira" or the quoit from hand to hand, who dived and swam like river-nymphs, and even hunted on foot, as did Arcadian Atalanta, were renowned for beauty, grace, and splendid contour of form. And, when they became wives and mothers, they gave birth to heroes whose adventurous prowess, chivalrous valour, and wise patriotism will stand as ideals for the human race as long as the world shall last.

For all the reasons just enumerated, I am, therefore, disposed to advocate strenuously the education of girls in all kinds of physical exercises, using, of course, in every case, due supervision and caution. Swimming is, perhaps, on the whole, the finest of such exercises, because it gives simultaneous and distributed action to nearly all

the muscles and organs of the body, is beautifully rhythmic and graceful, entails regular and large respiration, and combines with healthful gymnastic movement the advantages of developing intellectual confidence, and of adding a new and keen pleasure to existence. The man or woman who can swim well is in possession of an extra sense. It is the next best thing to being able to fly. In fact, the action of natation is a kind of flying; the motion of propelling the body in the watery fluid is strongly analogous to that of cleaving the aërial fluid. It is a movement which implies the utmost liberty of physical action and empire over the elements which a human creature can enjoy. But the art must be early learnt and judiciously taught. It is most suitable as a corrective and invigorating exercise in cases of lymphatic, debilitated, or scrofulous constitution, curvature of the spine, or nervous excitability, over-work, and hysteria; but it is often dangerous, or at least unadvisable, for persons in whom any specialised weakness of the lungs or of the heart is indicated.

Swimming should be learnt in sea-water, this being, on account of its greater specific density, more buoyant than fresh water, and, therefore, affording easier sustenance to the body immersed in it. The art of floating is usually more readily acquired than that of swimming, and it should, therefore, be taught first, as a means of acquiring confidence. In floating, it is essential to throw the head well back on the water, fill the chest with air, and have the legs and feet close together, and thoroughly under control. The teacher should stand beside the pupil in smooth and moderately shallow water, reaching to about the waist, and, in the first few essays, should place the hand firmly under the base of the pupil's spine, in such a manner as to afford physical support and moral

encouragement. The other hand might clasp the right hand of the learner, ready, in case of any failure of confidence, to give immediate assistance. Of course, the bathing costume worn must be of such construction as to impede the limbs as little as possible. It should consist of a combination dress of light serge, dark in colour, and reaching a little below the knee, girt in loosely at the waist by a leather belt strong enough to bear the strain of lifting the body by it, if necessary. On no account must any floating skirt, capable of getting inflated or weighted with absorbed moisture, be worn. The temperature of the water in which swimming and floating lessons are given should be nearly tepid, and the time spent in it should, at first, be limited to about half an hour. If headache, shivering, giddiness, or coldness of the extremities appears, the pupil must at once leave the water, and dress, after rubbing the body dry with warm rough towels. It is best to be provided, after the continental fashion, with a large Turkish wrap or *peignoir de bain*, which should, directly the bathing-dress is stripped off, be thrown over the whole person, from shoulder to foot. This arrangement obviates piecemeal drying, and prevents loss of heat by radiation from the surface of the skin. A hot foot-bath is also a great convenience and benefit to delicate girls and women after a prolonged immersion in the water.

XVIII.

ON THE CULTURE OF BEAUTY, GRACE AND HEALTH IN YOUTH.—III.

My dear Sibyl,—You ask me whether I think your girls would be benefited by gymnastic exercises, and if so, under what circumstances and with what precautions.

Children living in the country, and accustomed to out-door games, do not certainly need gymnastic or calisthenic training so much as those who are imprisoned in towns and unable to obtain hardy exercise; but even for the former the discipline and method of orderly exercises are extremely useful as a means of drill, and of acquiring facility of controlled and graceful movement. Undisciplined exercise is apt to degenerate into mere romping and horse-play, often rude, and sometimes dangerous. The body requires training just as much as the mind, and this training can be secured only by application; the eye needs to learn quickness and precision, the hand steadiness of grasp and of aim, the limbs rhythmic and restrained gesture, the neck and head grace of poise and carriage, the whole body dignity and ease of manner and of presence. Mere running about wildly and unchecked over hills and meadows, though beneficial to pulmonary and muscular development, frequently develops also an awkward gait, hoydenish demeanour and round shoulders, so that unless such liberty is supplemented and corrected by a daily drill, it may be productive of

much that is undesirable. Graceful out-door sports, combining physical training with orderly movement and the discipline which the acquirement of proficiency necessitates, are, in my opinion, preferable to any other form of exercise. By such methods, not only the muscles of the body and limbs are developed, but the hand and eye also are educated, alertness and intelligence are stimulated, pleasurable emulation evoked, the fresh air plentifully inhaled, and a zest and joy imparted to the exertion which is wanting, equally in the mere systematic practice of gymnastics as a school task, and in the aimless scrambling about over woods and wilds, which is the only form of physical training many country-bred children get.

Lawn tennis is a good form of sport, and one just now particularly popular among young people; so also is cricket, a game, however, unsuitable to girls who are not in robust health and endowed with excellent "staying" power. Archery, which some years ago was deservedly popular among our sex, seems at present to enjoy less favour, though it is assuredly a most graceful and delightsome pastime. I warmly commend it, as also the old English game of "bowls," played on lawns with a netting, and hardly second to archery itself as a means of educating the eye and hand. In wet or cold weather, however, when outdoor sports are impossible for girls, or only practicable at rare intervals, indoor dancing, calisthenic and gymnastic exercises should be regularly adopted. The Swedish, or Ling system, and that of Dr. Schreber are the simplest and best, as they require no apparatus or aid of any kind, are easily taught, and do not involve any great fatigue. The method of Dr. Schreber consists solely in a series of rhythmic gestures of the body and limbs, performed in the following order:—

1st. Describe a circular movement with each arm twenty times in succession. Extend the arms forward, outward and upward, thirty times in succession, taking eight or ten deep inspirations between each series.

2nd. Execute a circular movement from the waist, swaying the upper part of the body slowly round, the hands resting on the hips, thirty times.

3rd. Extend the leg as nearly at right angles with the body as possible, twelve times each side, taking eight or ten deep inspirations between each series.

4th. Extend and bend the foot twenty times each side; perform the gesture of reaping or sawing thirty times; bend each knee rapidly twenty times; take eight or ten inspirations.

5th. Raise the arm swiftly and rapidly, as in the action of throwing a lance, twelve times in succession; throw out both arms simultaneously twenty or thirty times; take eight to ten deep inspirations.

6th. Trot on one spot, resting the hands on the hips, and lifting the feet briskly, a hundred to three hundred times. Take eight or ten deep inspirations.

7th. Jump with the hands on the hips, and the head and body erect, fifty or a hundred times. Take eight or ten inspirations.

These movements, the orderly execution of which should occupy a good half-hour or more, should be performed without haste, and with intervals of repose if necessary, but with all the vigour and heartiness which can be put into them. Every gesture must be ample and resolute, well-defined, and separated by a distinct pause from the preceding and following movements. The exercise must not be pushed to the limit of the performer's strength; all distress, pain, or exhaustion must be avoided. For weakly girls, or those suffering from

temporary and periodic indisposition, the movements must be modified and curtailed. The room chosen for this exercise should be airy, unencumbered with furniture, and, if possible, uncarpeted. The dress worn must be light, entirely without ligatures, tight heavy skirtings or impeding weights, and the feet should be shod with light heel-less boots or shoes. The time chosen for the exercise should be before breakfast, or during the forenoon, preceding by about an hour the second meal of the day.

Another important and frequently neglected item of physical training is the culture of the voice. Nothing is more favourable to the healthy development of the lungs and chest than the daily exercises of singing and reading aloud. In cases of hereditary tendency to delicacy of the lungs, consumption, or susceptibility of the throat and bronchial tubes to catarrh and cold, this method of training is of sovereign importance, and too much stress cannot be laid on its value as a remedial agent. Let your girls sing their scales and voice exercises every morning for half an hour, and in the evening let them read aloud for a full hour at least.

To read aloud well is an art requiring careful and patient application. It does not, for instance, suffice to sit in a cramped position before a table, the elbows thrust forward—perhaps resting on each side of the book—and the head bent over it, jabbering rapidly sentence after sentence in a half-audible voice. The reader should sit in a comfortable and easy attitude—or even stand, if she is a strong girl—in front of a book-rest, the shoulders thrown well back and the chest forward, the arms by the sides, or resting, if she sits, loosely in her lap. The voice must be measured, resonant, and clearly distinct in its enun-

ciation, every syllable must be pronounced with precision, the sound must not be suffered to drop towards the end of the word or sentence, the breath must be well sustained, the stops carefully observed, and a pause of a half minute or more, allowed at the end of the paragraphs. Most girls have a tendency to gabble; this defect is due chiefly to shyness and nervous feeling, and it can be cured only by the acquirement of confidence and dignity.

During holiday time, when there are no lessons to be got up, girls might be encouraged to learn poems or short prose compositions for recitation, and to entertain one another and their friends by declaiming selected pieces in the evening, standing in the centre of the room and accompanying the recital with appropriate but restrained gestures, modulating the voice and facial expression according to the theme. The bane of all uncultured girls consists in the propensities to giggle, to grimace, and to gabble, especially whenever anything methodical or serious is demanded of them. When I was at school, a certain gentleman who professed literature at one of our Universities used to come occasionally to read Shakespeare with us. The members of the class, composed of girls between the ages of fourteen and eighteen, read aloud in turn, and if by chance one of them, momentarily moved by the sentiment of the lines, suffered her voice to be betrayed into tones less rapid and meaningless than the usual wont, the suppressed tittering of her companions speedily covered her face with the blush of confusion, and against their mirth the encouragement of the Professor went for nothing. It was considered the correct thing to gabble, and we each gabbled accordingly, else the rest were sure to giggle. "Alas," as Walter Besant's French Professor would

pathetically exclaim, "alas for Girl, gaunt, ungainly, and ungracious Girl!"

It is quite as necessary for the cultivation of the voice and the development thereby of the chest and breathing apparatus, that the waist should be free from artificial compression, as we have already seen it to be when other exercises are concerned. The lungs cannot be properly inflated, nor the voice sustained if the thorax is laced in by means of stays, or squeezed by tight frocks. I have already said that no corsets ought to be worn before the age of fifteen, but a mere band of jean only. After womanhood is reached a pair of very light stays may be adopted with the view of supporting and sustaining the figure, not of compressing it. Neither whalebones nor metallic side-pieces need be used; the corsets ought to be boneless and elastic, fastening in front by means of a light and narrow busk, easily adjusted and perfectly flexible, so that the body can be bent and swayed about in all directions with absolute freedom and grace. No young woman, unless, unhappily, deformed or diseased, requires bones in her stays. It would take up a whole page of my letter-paper even to enumerate all the complaints and troubles engendered by the pernicious fashion of tight-lacing. And knowing how great and how deadly are the evils entailed by this practice on our women and their offspring, I rejoice at the spreading of the gospel of hygiene, and at the tendency of modern art to revert to the delineation of the undraped form. In my opinion, girls should be familiarised with the outline and contour of the human body as Nature makes it and as painters and sculptors best love to show it, and taught to regard it with purified eyes, as being in itself a beautiful and divine creation, worthy of their highest reverence and admiration; not as a mere lay figure on

which to hang skirts and paniers, to pinch, to pad, and to distort, as though it ought not to be thought of respectfully or dutifully, but rather with contempt, or, perhaps, with a sense of shameful annoyance and mortification. Raiment should be for the body, not the body for raiment. And the best and purest taste in dress is that which moulds itself on natural forms, and seeks neither to exaggerate nor to suppress, but to follow and preserve them, ministering thus to the interests alike of beauty, of comfort, and of sound health. Educate your girls in these maxims, my dear Sibyl, and be sure they will grow up comely, tall, and full of grace, and will live long to bless the wisdom of an admirable mother.

XIX.

ON THE CULTURE OF BEAUTY, GRACE AND HEALTH IN YOUTH.—IV.

My dear Sibyl,—My observations upon the physical training of girls in relation to exercise would hardly be complete were I to omit the mention of horse-riding,—an amusement in much greater favour with our sex at the present day than in the time of our mothers. I have a high opinion of the value of equitation, both as an exercise and as an art. Most hygienists regard it as one of the best methods available in the case of girls for promoting muscular development and imparting general tone to the system, especially in respect to the expansion of the chest and the action of the respiratory organs; while, from an educational point of view, it is an exercise eminently calculated to inspire confidence and grace of movement, to fortify nerve, to dispel awkwardness and timidity, and to stimulate the control of hand and eye. From a therapeutic point of view, again, horse-riding is particularly advantageous in cases of general debility, and of affections liable to become chronic, such as hysteria, hypochondria, chorea, scrofula, tendency to consumption, dyspepsia, anæmia, atony or weakness of the functions, chlorosis, and all nervous disorders. Girls may begin to ride, under proper direction and with due precaution, when about ten or twelve years old. This

is, I think, quite soon enough, because, before this age, the bones are so soft and pliable in consistency that they are not unlikely to become deviated by the posture which the side-saddle renders necessary, and curvature of the spine, or even of the thigh-bone, might possibly result if the exercise were frequently indulged in during the tender years of childhood. The chief art of riding consists in the acquirement of a firm, easy, and graceful seat; the rest is mere detail, and, as it hardly belongs to my province, I will not dwell on the subject longer than to observe that the greatest care should be bestowed on the choice of the horse destined to mount a beginner. He must not be fretful, tricky, or heavy in his paces, nor must he have a hard mouth, necessitating the curb, or likely to fatigue and cramp the hand of a novice. He should have a short light trot and a good manner, and, above all, he must have no vices, such as those of shying, rearing, jibbing, bolting, or stumbling. To mount a beginner on a vicious or a tricky horse is not only dangerous, but fatal to future proficiency. Confidence and courage will be paralysed at the outset; apprehension and nervousness will take their place; and when these defects have once laid hold of the mind they are difficult to overcome, and entirely incompatible with ease and dignity of pose.

As girls approach the age of fifteen or thereabouts, care must be taken to regulate such violent exercise as that of horse-riding, in accordance with the fluctuations of their health. Rest is necessary at times to enable the organic functions to assert themselves in a natural and orderly manner; for it must be borne in mind that interruption or disturbance of these, from whatever cause, may not only entail headache, lassitude, and other disorders more or less immediately disquieting, but may

even give rise to lasting consequences of a very serious and distressing character.

I am not an advocate of hunting for women. It is a dangerous pastime, especially for the sex that rides across country encumbered with drapery, and liable, should a fall occur, to be found either hopelessly pinned down to the saddle by a third pommel, or inextricably mixed up, by means of a tight habit-skirt, among the hoofs of a floundering horse. Moreover, the sport itself is hardly one in which refined and womanly women will be able to take much pleasure; the spectacle of the "death," even when Reynard is concerned, ought not to inspire feelings of joy in the hearts of English girls, and when poor "pussy" is the victim the aspect of the thing is, to my mind at least, wholly revolting and contemptible. No doubt the actual chase is exhilarating; but its purpose—that of deliberately running to death an innocent and sensitive creature, and making pastime of its bitter fear and physical distress—has always seemed to me a cowardly and unworthy game for Christian ladies and gentlemen. I would never encourage any son or daughter of mine to find delight in such an amusement; and I think the time is not far distant when the view I take of the matter will become pretty general. An age in which the public taste condemns the pigeon matches of Hurlingham, and impels ingenious mechanicians to replace the living doves with substitutes of clay, will surely not long continue to countenance other sports dependent on animal suffering and slaughter. At all events, hunting and shooting are, in my view, distinctly unsuited to women, alike from a physical and an ethical point of view, seeing that, on the one hand, bodily risk and injury mean so much more to us than to the stronger and less vulnerable sex; and that, on the other hand, women are in a special sense entrusted

with the censorship and sanction of morality, with the direction of the male conscience, and the formation of the national taste.

Next to riding, no exercise is so beneficial as that of dancing, when it is practised with art and knowledge. All rhythmic and musical motion is educational alike to mind and body; the pity is that an exercise so commendable should usually entail the evils of late hours, deprivation of sleep, and the inhalation of heated and impure air. "Cinderella dances" have of late become fashionable, and they are, undoubtedly, a step in the right direction. But the hygiene and ethics of the ball-room still leave much to be desired, and it will, I fear, be left to a future and wiser generation to regulate these things in better accord with the dictates of common-sense and comfort. Meanwhile, notwithstanding present detriments, dancing may be safely recommended as a most useful means of physical training. The waltz especially affords an excellent exercise for the development of ease and graceful carriage, and for the acquirement of that undulating movement from the hips which specially distinguishes well-bred Frenchwomen, and which is absolutely necessary in order to give the figure sweep and poise. If dancing is unobtainable, a good method of learning to walk by moving from the hips instead of from the waist, is to perambulate a room or a garden with some object, moderately large and heavy, balanced on the head, as the Southern and Oriental peasants carry pitchers, unsupported by the hand. The aim of the pitcher carrier is to keep the waist steady, the chest expanded, and the neck erect, but not stiff,—the lower limbs, by their restrained and disciplined movements, imparting to the whole body a swaying and graceful demeanour.

But, no less than exercise, repose is good for growing girls. Do not let your daughters sit upon narrow forms without support; on the contrary, encourage them to rest the spine by lying back in a convenient chair or on a reclining board for an hour, with one small cushion only beneath the head, the knees straight, and the arms crossed on the chest or resting by the sides. During this hour of relaxation the governess or a sister might read aloud, music might be played, or oral instruction given to avoid unnecessary waste of time. Under some circumstances, however, intellectual rest may fitly accompany that of the body; and the interval thus employed in entire repose will be found to act as an excellent tonic and restorative.

XX.

ON THE CULTURE OF BEAUTY, GRACE, AND HEALTH IN YOUTH.—V.

My dear Sibyl,—I promised you this week a discourse about the care of the complexion, figure, and so on, in early youth. And as just now the vacation season is close at hand, and you will before long be thinking about carrying off your young people to some sea-side or country resort, I think a few suggestions in regard to holiday-making from the hygienic point of view will hardly be inappropriate.

In the first place, having selected a suitable spot for your summer retreat, you cannot be too cautious in your choice of a habitation. Bear in mind that a large number of nomad visitors to our coasts and inland sanatoriums frequent such resorts, in order to re-establish their own or their children's health after attacks of infectious fever and other malignant maladies, leaving behind them, of course, in the abode they have temporarily occupied, a virulent contingent of disease germs, ready to seize upon the first unfortunate who unsuspectingly comes within their reach. Nor is this the only danger of the sort which threatens the frequenters of such places. Children recovering from measles, whooping-cough, scarlatina, and other similar complaints are to be met with in plenty, digging on the sea-shore at low tide, scrambling among the rocks, bathing, wading,

and airing themselves, under maternal or nursery guardianship, on pier, parade, and promenade. Common prudence, therefore, suggests that you should not only protect your family against the chance of infection in lodging-houses by strenuous inquiry and other precautionary measures, but that you should also warn your young folk of the risk incurred by consorting out of doors with chance acquaintances, concerning whom nothing further may be known than that they are well-dressed, pleasant in manner, and disposed to be friendly. It is no uncommon thing, unhappily, for a family to leave home on the annual sea-side visit in excellent health, and in a short three weeks or so to contract, by infection, some malignant sickness involving much immediate peril, perhaps even loss of life, or a long period of subsequent trouble and anxiety. Not infrequently, too, lodgings are dangerous from causes other than those just mentioned: drainage may be defective, bed-rooms damp, water-supply insufficient, or the arrangements of the lower premises unsanitary. All such matters should be subjected to careful scrutiny before any agreement is made; otherwise great inconvenience, expense, or worse, may result.

It is always best, I think, whenever possible, to lodge *en pension* in some well-conducted hotel or boarding-house, for in such establishments the risk incurred, both from accidental infection, and from unsanitary construction, is minimised. Hotel companies and managers of *pensions,* having capital at command, and large commercial interests at stake, are far less likely than needy, and therefore greedy, proprietors of "apartments" to be neglectful of the hygienic interests of their clients in regard to the questions under consideration. Moreover, arrangements at hotels and boarding-houses are usually

made by the week, and not for the season, as is the case with most private lodgings, so that should any difficulty arise in respect of cleanliness or otherwise, nothing is easier than to change one's quarters. Again, it is worth while observing, that unless one brings one's own servants and *batterie de cuisine*, the cookery in lodging-houses is, as a rule, bad beyond description; the proprietors and their domestic staff usually appropriate the larger and better share of the comestibles; the attendance is abominable, the linen retained too long in use, and the whole detail of "service" unsatisfactory in the extreme. Far different is the hotel *table d'hôte*, freshly furnished every day, prepared by good cooks, and attractively served on clean linen, with shining glass and unimpeachable plate. Happily, the continental and American custom of living *en pension* at large establishments is increasing rapidly in this country; first-class hotels, "with every modern improvement," now receiving guests on these terms at most of our chief watering places; and the old-fashioned, insalubrious, and often uncleanly lodging, with its sour spinster landlady, its detestable cuisine, and general discomfort and unsavouriness, is in a fair way to become a legend of bygone times.

If precautions are thus necessary in regard to the choice of an abode, they are requisite also in connection with a score of minor accessories. For instance, my dear Sibyl, avoid using bathing-dresses, towels, wraps, and so forth, which are public property. Let each one of you go to the morning dip provided with his or her own apparel and linen; wear nothing, and make use of nothing which has served for the toilette of strangers; and even, if you can manage it, charter your own bathing-machine to be set apart for your especial behoof. If you go to a bathing station where you have friends, or

where you meet other families known to you, it is the most convenient and easy to make a co-operative arrangement among you for the monopoly of a machine by the month or the season. Some people take their own tents, which can be pitched on any unfrequented spot along the shore—guaranteed safe for wading or swimming purposes—and which can be utilised in turn by boys or girls. Or, if the site selected be *quite* retired, and the bathing costumes of both sexes appropriate, a canvas partition added to the tent will readily enable the whole family to enter the water together, after the sociable and sensible fashion prevalent abroad. As, in a former letter, I have already discoursed at some length on the advantages of learning to swim and float, I will not now dwell further on the subject than to observe that after leaving the water it is well, for the complexion's sake, to bathe the face in fresh soft water, so that the saline constituents of the sea brine may not dry on the skin, and harden or excoriate it.

Encourage your children to be as much as possible out in the open air and sunshine during the holidays. In our climate there is not much fear of sunstroke, but on hot July and August days it is, nevertheless, wise to guard against the chance of such an accident by wearing large straw hats enveloped with white cambric puggarees, and covering the neck and upper part of the back with a long flowing lappet. If the head and spine are thus protected, there is, as a rule, very little danger to be apprehended from English sunshine. Should, however, the heat of the season be unusually fierce, and no shady resort be available, you will act prudently in keeping your young people indoors during the middle of the day. Sunstroke is an accident which has several degrees, the severer of which are seldom experienced in temperate

latitudes. Sudden death, delirium, and violent cerebral congestion smite the unwary under tropical suns, but here the worst effects of summer heat are usually limited to headache, nausea, giddiness, bleeding of the nose, and sleepiness. All these symptoms are due to congestion of the nervous centres, and are best treated by rest in a darkened room, abstinence from food, applications of some cooling lotion—as, for instance, vinegar and water—to the head and spine, and a dose of simple aperient medicine.

As for the effect of sunshine on the skin, that also is liable to show itself in various degrees, according to the constitution of the individual, the condition and texture of the cuticle, and the degree of sunlight encountered. Some complexions scorch, some tan, some freckle, some become eruptive under strong sunshine. The peculiar dark tint produced on the epidermis by the action of solar light is due to the exaggeration, under its influence, of the pigmentary deposit in the secreting glands of the skin, and to the chemical decomposition of the iron present in this deposit under the same action; a process which gives rise every here and there, where it is most energetic, to the formation of little brown and yellow stains called freckles. Freckles, however, are of two kinds; some are evanescent and dependent on the season, others are constitutional and permanent. I do not now speak of the latter, which are referable to other causes than exposure to sunshine, and are not, therefore, amenable to the treatment I am about to propose. Against summer freckles, due to the chemical action I have just mentioned, a lotion composed of an ounce of alum, two table-spoonfuls of lemon-juice, and a pint of elder-flower water, may be usefully applied twice daily. This wash is quite harmless, and may be employed with

confidence for even very delicate skins; but the following remedy, recommended by Erasmus Wilson, though excellent in obstinate cases, does not suit all complexions equally well:—

Elder-flower ointment . . .	1 ounce.
Sulphate of zinc	20 grains.

Mix well, and rub into the affected skin at night. In the morning wash the cerate off with soap and soft water, and afterwards apply a lotion thus composed:—

Infusion of roses	½ pint.
Citric acid	30 grains.

All local discolorations, Dr. Wilson affirms, will disappear under this treatment, or, if the freckles do not entirely yield, they will, at least, be greatly ameliorated. Should, however, any unpleasant irritation or roughness of the skin follow the application, a lotion composed of half a pint of almond mixture (Mistura Amygdalæ), and half a drachm of Goulard's extract will afford immediate relief. *Lait Antéphélique*, invented by Dr. Hardy, of the St. Louis Skin Hospital in Paris, and sold in this country by all druggists and perfumers, is also a good, though somewhat violent, remedy against freckles and tan marks. This "milk," which, among other ingredients, contains acetate of lead, modifies the skin by peeling off the cuticle, and thus renewing the surface of the complexion. But it is obvious that as soon as this new surface is exposed to the action of the air and sun, freckles will again form upon it, and the operation will have to be repeated *de novo*.

Here is a formula which I have heard much praised; it is a good substitute for Erasmus Wilson's recipe:—

Chloride of ammonia . . .	1 drachm.
Distilled water	1 pint.
Lavender water	2 drachms.

Apply by gently dabbing the freckled skin with this lotion two or three times daily.

Powdering the face with finely-pulverised rice or starch protects the skin against the action of solar light, and if to this precaution be added that of constantly wearing a gauze veil—not net or tulle—when out of doors in sunny weather, no reasonably practical measure for the prevention of sunburn will be omitted. I may add that blue or green veils are the most efficacious for the purpose, but as they are undoubtedly trying both to wear and to behold, some more neutral tint approximating to these colours may with advantage be substituted.

Some skins, under the action of summer heat and light, develop erythematous, or even erysipelatous eruptions, which cause more or less severe irritation and disfigurement. In such cases great attention must be paid to diet; coffee, wines, liqueurs, shell-fish, and all heating and stimulating foods must be avoided, sea-bathing should be discontinued, and a cooling lotion used, containing either oxide of zinc, laurel-water, or hydrocyanic acid. Aperient saline draughts should also be administered, and warm sitz-baths taken night and morning. Powdered magnesia and rice mixed, Fuller's earth, or orris-root may also advantageously be dusted over the skin.

XXI.

ON THE CULTURE OF BEAUTY, GRACE, AND HEALTH IN YOUTH.—VI.

My dear Sibyl,—I promised to give you to-day some general instructions for the treatment of hay-fever. Two of your family, I believe, suffer from this inconvenient and distressing complaint, Mabel and Constance. If I remember rightly, the form which the malady assumes in Mabel's case is that of asthma, while Constance is usually afflicted with the symptoms of influenza. Hay-fever has, in fact, three or four varieties, the two commonest being those just mentioned. In some instances it developes a very persistent and uncomfortable rash on the skin, resembling measles, and accompanied with much heat and a quick pulse. In other cases, again, it causes, on the contrary, a sensation of extreme chilliness, and I have seen patients under its influence wrap themselves in warm shawls or even furs, and sit shivering over a cup of hot negus on a blazing July day.

As for the origin and etiology of hay-fever, nothing in the annals of medicine has afforded more food for discussion, disquisition, and difference of opinion. Some medical authors are of opinion that the disorder has no immediate relation to vegetation, but that strong solar light and heat, whether in town or country, are quite sufficient to produce it in predisposed organisms. But my own observation and experience are decidedly adverse

to this view, for I have repeatedly cured bad attacks of the malady by removing my patient either to a city or to the coast, away from the vicinity of meadows and foliage, and it is well known that a sea voyage is an almost certain remedy even in the most aggravated cases of the complaint. Yet the brilliancy of solar light and excess of solar heat are certainly liable to be greater at sea than on land. Moreover, persons subject to hay-fever have frequently informed me that a simple drive through country lanes during hay harvest is quite enough to induce a severe attack of the complaint, which does not show itself at all so long as they remain in a town, confining their walks or drives to the streets. I know a lady, now resident in Paris, who, on account of her liability to this malady, never visits the Bois de Boulogne during the summer season, knowing by painful experience that even an hour's ride through its shady alleys and delightful woods would entail on her several days of more or less acute suffering.

Again, some physicians regard hay-fever as a form of nervous disease, the idiosyncrasy of which is developed only in persons of a specially sensitive temperament. It is true, I think, that nervous people are more often found to be susceptible to this malady than others, but such a fact merely proves the greater impressionability or irritability of their physical constitution. External causes, which pass harmlessly by less acutely sensitive systems, are potent agents in the case of highly nervous persons. It is not, therefore, at all wonderful that hay-fever, in common with hysteria, epilepsy, neuralgia, melancholia, chorea, and other recognised disorders of the nervous system, is far more prevalent in our time than it was half a century ago. Indeed, it is only since the year 1828 that the complaint appears to have

attracted medical attention, and it was in that year that the term "hay-fever" was first applied to it. It cannot be doubted that the tendency of the "high pressure," mental and physical, at which we now live, the continual forcing process undergone by the cerebral centres, and the strain to which the nervous system is in the present day subjected, from childhood upwards, entail as one of their most salient results a condition of heightened sensibility which shows itself in the present predominance of types of disease specially affecting the nerves. It is usually in the "better" and more cultured classes that such diseases are commonest, and hay-fever is no exception to the rule of its kind. Passing over several minor and less important theories respecting the etiology of hay-fever, I need only observe here that the malady is, in all its forms, undoubtedly due, according to my own opinion, to the presence in the atmosphere at certain times of the year of emanations and organic particles liberated by grass, flowers, and foliage;—agents which, although perfectly harmless to a majority of persons, are toxic to others having irritable surfaces of the mucous membrane, whether of the nose, mouth, eyes, throat or digestive canal. Consequently, such persons, breathing the air in which these particles and vapours are contained, speedily suffer from congestion and exaggerated secretions of all these different organs, itching of the nostrils, running of eyes and nose, as in severe cold, incessant sneezing, swelling of the eyelids, tickling of the throat, diarrhœa, slight fever; and, where the form assumed by the disease is asthmatic, wheezing and difficulty of breathing, which, in some cases, may become extremely severe and obstinate. Whether these very disagreeable effects be caused by minute corpuscles of pollen, subtle aromatic exhalations, or invisible *bacteria*, matters little from a

therapeutic point of view. For each hypothesis the indication is clearly the same,—to suppress or to neutralise the active cause of the complaint.

Let us first take Mabel's case. Of course, both for her and for Constance, the main thing is to quit the country during hay-harvest, and indeed during the whole reaping season, for the seaside, and to frequent the shore and the town as much as possible, avoiding drives or rides inland, picnics, and other similar temptations. Possibly these simple precautions may suffice; but if not, they should be supplemented by one or more of the following remedies.

Every morning, before leaving the bedroom, drink slowly, in sips, a small cupful of black coffee, *very hot*, and, while sipping it, smoke a stramonium cigarette. Cigarettes of datura stramonium, such as those which I find most efficacious in this complaint, are sold in shilling boxes by Messrs. Roberts, chemists of New Bond-street, London, and Place Vendôme, Paris. They must be smoked slowly, the fumes must be well drawn into the air passages, and, now and then, expelled through the nostrils, a trick which is soon learnt by practice. I have found stramonium smoking a sovereign remedy in many bad cases, where quinine, belladonna, and other specifics entirely fail.

Later in the day, and, indeed, whenever the asthmatic attack becomes violent, the dose of hot coffee and the cigarette may be repeated. Dr. Carter Moffat's Ammoniaphone is also a valuable remedial agent in hay-asthma. It should be inhaled slowly and thoroughly two or three times a day during a minute or two. Champagne iced, especially if taken fasting in the morning, will frequently cut short a distressing paroxysm of difficult breathing, as I have many times had occasion to

observe. Whenever possible, the patient should also have recourse to hydrotherapy—cold spinal douches and douches on the head and chest being especially serviceable.

As for Constance, she will need a somewhat different method of treatment. In her case the disorder shows itself as a catarrh, accompanied with frontal headache, sneezing, and all the usual symptoms of a severe cold. Sea-bathing and cold water douching will do much for her, no doubt, but to these remedies she must add the use of a lotion of sulphate of zinc, two grains to an ounce of distilled water, applied freely to the eyes several times a day. Twenty minims of tincture of opium added to this lotion will render it still more efficacious. If the irritation of the eyes is intense and burning I recommend the following :—

Acetate of lead	2 grains.
Dilute acetic acid	1 minim.
Distilled water	1 ounce.

This lotion may also be used in the form of spray for injection into the nostrils.

On going to bed at night the inside of the nostrils may be smeared with a small quantity of Calvert's carbolic camphorated ointment, a remedy which in some cases suffices without other aid to remove unpleasant symptoms. The edges of the eyelids, if sore, may also be gently rubbed with this ointment. In the morning the use of the ointment may be replaced advantageously by a nasal douche thus compounded :—

Carbolate of zinc	2 grains.
Distilled water	1 ounce.

Nasal douches are best administered by means of spray-producers, sold by all perfumers and chemists in

different sizes and at various prices. By means of one of these little instruments the lotion can be introduced well into each nostril and scattered in small particles on the mucous membrane lining it.

Relief is afforded also by the occasional use in the daytime of ordinary tobacco snuff, or of a powder composed of one-sixteenth of a grain of morphia and one grain of bismuth, applied as snuff, by sniffing it up into the nostrils. The vapour of compound tincture of benzoin, one drachm to a pint or half a pint of very hot water, inhaled two or three times daily, constitutes a most valuable sedative in acute irritation of the back of the throat and the larynx. In the same way, carbolic vapour may be inhaled; twenty grains of carbolic acid to a pint of hot water; or as spray, in cold distilled water, twenty grains to ten ounces of water.

Both Mabel and Constance must avoid walking in the glare of the sun unless well protected with large shady hats and blue gauze veils, or veils as nearly approaching that colour as possible. Small cotton-wool plugs steeped in a camphorated or carbolised solution and inserted into the nostrils, will also be found of great use in neutralising the evil effects of country air when it is impossible to wholly avoid it. A drop or two of spirits of camphor attenuated with a little alcohol or water is enough to impregnate a sufficient quantity of wool for one nostril. If a carbolic plug is preferred, the prescription already given for a nasal douche can be utilised, or Calvert's ointment, smeared on the surface of the wadding.

Indoors, both girls should sit in shaded rooms, and avoid decorating their tables or their persons with flowers. If any further remedy is requisite than those already recommended, sulphate of zinc and assafœtida may be taken internally in the form of pills. A recent writer

on hay-fever prefers valerianate of zinc to the sulphate, and gives the following formula:—

Valerianate of zinc	1 grain.
Compound assafœtida pill . . .	2 grains.

These pills may be taken once or twice a day, but not more frequently, and only in severe cases which do not yield to external treatment.

XXII.

ON THE CULTURE OF BEAUTY, GRACE, AND HEALTH IN YOUTH.—VII.

My dear Sibyl,—As I have already written a good deal to you concerning the cultivation of the voice and the development of the figure, let us now give our minds to the consideration of the complexion, and the care and preservation of beauty generally.

In very early childhood the complexion is always, unless in cases of disease, clear and blooming. This skin of milk and roses, however, begins to tarnish and fade at about seven years of age, sometimes even earlier. Mothers who wish to preserve a beautiful complexion in their children should pay especial attention to two important matters—ventilation, and quality of food. The first essentials for the culture and preservation of beauty are pure air and sunshine. Nurseries should catch the morning sun, and should be airy, with high ceilings and open beds. Children should run about out of doors as much as possible, and be encouraged to play in the garden rather than in the house. Next, they should be nourished on the simplest and plainest fare, consisting chiefly of milk and milky foods, ripe fruits in summer, wholemeal bread, and all kinds of farinaceous dishes, such as sago, macaroni, tapioca, semolina, rice, vermicelli, hominy, and so forth. Children do not require meat; they seldom like the taste of it, and when it is not forced

on them they are sure to prefer sweet and milky foods. Never give children beer to drink, nor any kind of alcoholic liquor. Naturally pure water is the best beverage they can take, but, if it be difficult to get, Salutaris, St. Galmier, or Apollinaris water may be substituted. I cannot forbear, while on this subject, to quote a passage from "Hygiene of the Skin," by Mr. Milton, senior surgeon to St. John's Hospital for Diseases of the Skin. He says:—

"Of all the pestilent habits now prevailing, that of giving boys and girls beer is, perhaps, the worst. There are other habits which do their work more rapidly, but they are only casually operative; whereas the use of beer is always and everywhere sowing the seeds of mischief; eating like a leprosy into the land. Like leprosy, too, the habit gets more hold of the system with each successive year, the factitious strength and stimulus which malt liquor imparts for the time being made an excuse for continuing it, even when the victim finds that it is spoiling the natural zest for food. . . . . The grown-up patient pays the penalty of a mistake begun, it may be, fifteen or twenty years ago. In my own experience this has been especially noticed as affecting the skin, kidneys, and nervous system. The skin becomes thick, muddy, and pimply, a fact evinced by the speedy improvement which ensues from merely leaving off malt liquors, without making any other change; so that I would advise every young lady who values her complexion, and particularly when she suffers under a tendency to eruption of any kind, to eschew beer as a worse poison than she could find in Apothecaries' Hall. She is violating the rules of hygiene by putting an undue strain upon her system and her skin, which latter it is just as possible to overtax as it is to overload the

stomach or work the brain too hard. . . . . Cider, though it does not induce so much visible disturbance of the constitution, is almost as mischievous with regard to the skin."

Tea, coffee, cocoa, and chocolate are all bad for children, causing heart-burn, indigestion, sick headache, and rendering the skin yellow and opaque-looking. Nothing is so good for girls and boys as milk and water; milk at breakfast and supper, water at the mid-day meal.

Every morning a tepid bath—rain-water if possible—should be used in the nursery, but care must be taken that the nurse does not wash two or more children in the same water. Each child must have its own bath; the water must be plentiful, and the soap employed of the very best kind. Nothing injures the complexion so soon as bad soap. A large number of toilet soaps commonly used contain an excess of alkaline matter, which is extremely pernicious to delicate skins; others are made by means of the "cold process," which does not obtain complete chemical solution of the ingredients; others, again, are mixed with animal fats of a coarse kind, such as dripping and kitchen refuse. Nor is this all. Many of the highly-scented and coloured toilet soaps contain a considerable amount of lime, chalk, or gypsum, and owe their attractive tints to noxious mineral matters. The best soaps are uncoloured and unscented transparent soaps, the type of which is Pears' hospital soap, made according to the suggestions of the surgeon already cited. Among opaque scented soaps I know of none so pure as Dr. Nichols' "Sanitary Soap," prepared with fine vegetable oil. Soap ought to contain from 15 to 20 per cent. of water, 7 or 8 per cent. of soda, and from 67 to 70 per cent. of oil. In order that the daily bath

should be really beneficial, children must be well rubbed from head to foot with a rough Turkish towel after the wash. Friction is essential to the preservation of a healthy skin and robust circulation.

During the summer do not permit your little girls to ramble about with unprotected faces, or they will certainly get freckled, and freckles are sometimes difficult to remove. Large cotton bonnets or shady hats should always be worn in hot weather, and the face should be bathed with a little elder-flower water after a long walk under a summer sun.

When children are quite young, the length and luxuriance of the eyelashes may be enhanced by careful clipping of the points every month or six weeks. This operation, however, requires the greatest possible precaution in order to avoid hurting the child or injuring the eye. The eyebrows may be thickened also by the same method. If a child's nose has a tendency to grow upward, in other words, to become "snub," or unduly broad at the base, it may be coaxed into better shape by judicious manipulation daily applied. In early years the cartilage which forms the framework of the nose is extremely pliable, and easily lends itself to external pressure and training.

One of the most important adjuncts to personal beauty is a good, sound, and even set of teeth. With comely teeth no plain woman is ugly, while with bad teeth no handsome woman is attractive. It is in childhood that the teeth assert themselves for better or for worse, and mothers who have the personal appearance of their daughters at heart, ought, therefore, to pay a very special attention to the hygiene and toilet of the mouth during their infancy. The enamel of the teeth in childhood is very delicate; therefore hard toothbrushes should be

avoided, and only a soft brush of badger's hair used once or twice a day. For shape I know no tooth-brushes that can compare with Mr. Salter's "Perfect Pattern" brush, the handle of which is curved so as to follow the contour of the dental arcades, and the bristles graduated in length. I always use this brush myself, and can confidently recommend it. Toothpowders are unnecessary for children living on simple milk foods; a little weak myrrh and water, tepid, is quite enough to cleanse both teeth and gums. If the second teeth appear evenly they will need no manipulation, but should they project or show a tendency to grow irregularly, they should be pressed frequently into their proper position, and care must be taken to remove the first (or milk teeth) if not naturally shed, as soon as the permanent ones appear. If a first tooth remains fixed in the gum when its successor shows itself, the latter will necessarily deviate from its rightful place, and will either project forward like a tusk, or will usurp the position of other teeth, and so the regularity of the whole set will be spoilt, and perhaps even the shape of the mouth affected. If the least spot of decay becomes visible on any tooth, take the child at once to a dentist and get gold stopping filled in, and the progress of the mischief arrested. By this means you will avoid not only the chance of future disfigurement by the loss of the tooth, but also the certainty of much suffering and disordered health.

With regard to the treatment of the hair in early youth, I am of opinion that, as a rule, it is better to wear it short. I think the luxuriance and beauty of the hair in future years is best secured by the free use of the scissors in childhood; and, moreover, the comfort of the child itself is greatly enhanced by the absence of curlpapers, hairpins, combs, and other adjuncts of long

tresses. Short hair can be washed daily in soft warm water, and so kept perfectly clean with but little trouble, without recourse to the use of washes or oils, which are never advisable for children's heads. If the hair should show any tendency to fall abnormally, the employment of an electric brush will be found of considerable value, and this, with the occasional application of a quinine lotion, and strict attention to general hygiene, will usually suffice to arrest the complaint.

Let your children go to bed early: about an hour and half after their last meal, or at the latest two hours, and see that they do not lie late in the morning. Children should be up by seven o'clock, or even half-past six, in summer time, and by eight in winter; and if you can turn them out in the garden for a run before breakfast, so much the better.

XXIII.

ON THE CULTURE OF BEAUTY, GRACE AND HEALTH IN YOUTH.—VIII.

My dear Sibyl,—The culture and preservation of beauty in childhood must be supplemented by a careful supervision of the *habits* of the children themselves. Boys and girls when quite young frequently contract "tricks" in which they indulge more or less all day, or, at any rate, during intervals not actively employed in study or play, and which, if not speedily and decidedly checked, may result in disfigurement of the face, hands, or other part of the person. I refer to such habits as sucking the thumb, biting the nails, rubbing the eyebrows, distorting the mouth, drawing in the lower lip and thereby protruding the under jaw, sitting with the feet habitually twisted or turned inwards, curving the shoulders and contracting the chest by crouching over books with the elbows thrust forward and the chin resting on the palms, and many other unhygienic and ugly tricks, easy to correct in their early stages, but very difficult to get rid of if suffered to become confirmed by usage. It is, of course, lost labour on the mother's part to endeavour by pressure to mould the too-spreading cartilage of her child's nostrils, or to push back prominent incisors into their right position, if the child itself is still more frequently and industriously addicted to thrusting its forefingers into its nose, or to sucking its thumb and

thereby dragging the teeth forward and outward. Tricks of this kind must be suppressed in early years by firm and persistent watchfulness on the part of mother and nurse, gentle reprimands and uniform censorship. Later, if new habits of a hurtful kind are acquired or old ones revived—as sometimes is the case, for children when even in their "teens" are usually imitative and conservative—argument may be used, and the *rationale* of the matter explained to the culprits, who will then, if well-disposed, seldom fail to correct themselves.

And here it is, I think, the place to say that the physical education of children can never be properly carried out unless the children are permitted and encouraged to co-operate in the work. When they reach a competent age—the standard of which it is impossible to fix arbitrarily, because capacity and intelligence are not equally developed in all young people—both boys and girls should be instructed in the elements of physiology and hygiene. Unhappily, mothers are too often themselves wholly ignorant of such things, and therefore unable to impart information to their children. Nor, indeed, can such instruction be given by persons who have no thorough knowledge of the subjects named, but only a smattering hastily acquired by means of some popular text-book. In order to teach even but the rudiments of any science *well* and adequately, the teacher must know its higher and more intricate developments, and be able to pass a tolerably stiff examination in them. Otherwise, the pupil's questions will certainly sooner or later elicit either an honest acknowledgment of ignorance, calculated to inspire mistrust, or, what is worse, an erroneous reply. I therefore counsel mothers who are not conversant with the sciences of hygiene and physiology to send their children to private classes where

these subjects are expounded by qualified teachers in plain and simple language. Until this is done regularly and systematically, young girls will continue to regard abnormally small waists as desirable and ornamental, high French heels as elegant adjuncts of the human foot, dress improvers as graceful appendages to the hollow of the back; and, in consequence, red noses, indigestion, enlarged toe-joints, corns, crooked spines, and hysteria will continue to increase and abound.

As much as you can, my dear Sibyl, encourage your children to study nature and the natural sciences. I venture to believe that a knowledge of anatomy, of the rules of health, of the chemistry of foods, of the botany of herbs and simples, of the laws of physics, light, heat, sound, electricity, magnetism, evaporation, and so forth, of the phenomena of storm and mist, and dew and rain, and sunshine, their uses to the earth and to man, and all the many interesting and beautiful facts of the nature around and within us, would prove to be infinitely more serviceable and enlightening than the customary lessons in grammar, political economy, algebra, polite letter-writing, or even history. I would rather my child should know the composition of the air she breathes, the formation and working of the lungs in her bosom, the method of the circulation of the blood, and the necessity of pure air and plenty of it, than I would hear her discourse about the classification of prepositions and pronouns, or the articles in the indictment of Charles the First. As it is, both girls and boys learn innumerable things which are useless except as *memoria technica*, and neglect knowledge of the widest interest and import. Your son will fluently parse a sentence in Greek or Latin, your daughter will faultlessly recite pages of *Racine* or of *Tasso*, but neither of them can tell you the history of

this drop of dew on the grass at their feet or of the white sea-cliff gleaming in the sunshine yonder. Now the study of tongues, whether quick or dead, is doubtless a good and useful thing; but why not also study to understand and interpret the language of Mother Nature? Other people's thoughts — especially such as Plato's, Goethe's, or Dante's—may indeed be profitable to read, but it is still better to think for oneself, and thinking is learnt, not from books, but from observation and sympathetic interpretation of Nature. And of this also springs Beauty itself, the best and most abiding, for heart and mind impress and image themselves in face and form, moulding and making these in their own similitude and likeness. I recall, as I write, some lovely verses of Wordsworth's touching this sympathetic intimacy with the world of natural things, and I think I must quote them to make my meaning clearer:—

Three years she grew in sun and shower,
Then Nature said, "A lovelier flower
On earth was never sown;
This child I to myself will take;
She shall be mine, and I will make
A lady of mine own.

"Myself will to my darling be
Both law and impulse; and with me
The girl, in rock and plain,
In earth and heaven, in glade and bower,
Shall feel an overseeing power
To kindle or restrain.

"She shall be sportive as the fawn
That, wild with glee, across the lawn
Or up the mountain springs;
And hers shall be the breathing balm,
And hers the silence and the calm
Of mute insensate things.

"The floating clouds their state shall lend
To her; for her the willow bend;
Nor shall she fail to see
Even in the motions of the storm
Grace that shall mould the maiden's form
By silent sympathy.

"The stars of midnight shall be dear
To her ; and she shall lean her ear
In many a secret place
Where rivulets dance their wayward round,
And Beauty, born of murmuring sound,
Shall pass into her face.

"And vital feelings of delight
Shall rear her form to stately height,
Her virgin bosom swell ;
Such thoughts to Lucy I will give
While she and I together live
Here in this happy dell."

Lay these stanzas up in your heart, Sibyl, for there is an excellent sermon in them. Teach your children to know and to love Nature, and to have sympathy for all creatures, great and small, wild and tame. Let them be taught the history and ways of birds and of all the little clever, wise animals of field and wood and moor, so that by-and-by they may see in them something better than mere living marks for their guns, or quarry to be run to death by horse and hound. And, as much as possible, accustom your boys and girls to associate together, whether for study or for play. The sexes complete and counterbalance each other, the boys encouraging their sisters to healthy exercise and stimulating enterprise, the girls restraining their brothers from acts of foolhardiness or thoughtless cruelty. If education were shared in common, and sport more generally participated in by youths and maidens together, our young men would be far more chivalrous and clean-hearted than they now are, and our girls would be less frivolous and artificial. The separation of the sexes in the morning of life is, to my mind, a fruitful cause of mischief, physical, moral, and intellectual.

There are some forms of amusement and sport which, of course, are less suited for girls than for boys, such as cricket, rowing, and cycling. But for the loss of these

the girl can be amply compensated by the exercise which domestic work at home involves. I think it is Mr. Ruskin who advises that every girl should do a certain amount of house-cleaning or cooking daily, if only to give her an idea of the pleasure of labour. And, apart from the "pleasure," all young women ought to serve an apprenticeship in home duties, else how, by-and-by, when they come to be heads of households, will they know how to instruct and oversee their servants? Every girl, no matter what her station in life, ought, before she is eighteen, to have learnt how to cook simple dishes, how to make beds, to lay a table for dinner, and, generally, to superintend with knowledge the common daily duties of the housemaid, parlourmaid, and other domestics. All these things are holiday tasks that may well and agreeably fill the interval of vacation time when graver studies are laid aside. Wet days, which would otherwise prove wearisome, and which cannot be wholly occupied by sedentary pursuits, may be pleasantly and wholesomely diversified by means of a little indoor activity with broom, duster, or rolling-pin. In the country, too, there are usually the dairy, the laundry, and the bread-oven, all representing so many centres of energy and interest to lively girls. And there is often more fun to be got out of these domestic departments than out of the lathe or the carpenter's tool-box, with which, meanwhile, their brothers are amusing themselves.

XXIV.

ON THE CULTURE OF BEAUTY, GRACE, AND HEALTH IN YOUTH.—IX.

My dear Sibyl,—I have but few words to add to what I have already said on the physical education of children, and they shall be devoted to the consideration of certain natural individual idiosyncrasies which tend to help or to hinder physiological development in youth.

Physicians attribute to the human body five different constitutional temperaments or normal states, with one of which everybody is born. These five temperaments are: the sanguine, the nervous, the lymphatic, the bilious, and the composite, which last may represent a combination of two or more of the other four.

These natal and constitutional differences of organisation are all of them constant in the same individual; that is to say, they are not interchangeable, but throughout life continue identical, and control the entire *manière d'être* of the subject from cradle to grave. Particular expressions of the constitutional temperament may be modified by education and acquired habit, but the native tendency of physique is ineradicable, and must, as I shall presently hope to show, be taken into due account during the years of childhood and early youth.

The sanguine temperament is so named because it imports great activity of the circulatory system. The chest and lungs of sanguine people are well developed and

sturdy, their skin is usually clear, their cheeks and lips ruddy, their muscles firm, their powers of digestion and assimilation strong and robust, their movements free, vigorous, and even vehement; their passions and imaginations of the liveliest. The pulse is strong and full, the body usually inclined to *embonpoint*, and the mental acumen sharp and penetrative. Boys and girls of this temperament are, as a rule, endowed with regular and easily-preserved health; if they contract any childish malady, such as measles, scarlatina, or whooping-cough, the disorder is well marked, attended with strong fever, and followed by a convalescence of short duration. The illnesses to which this temperament most predisposes are of a plethoric character, and special care should therefore be taken to avoid over-heating, sunstroke, ill-ventilated rooms, and undue excitement. Stimulating foods and drinks are unsuitable to young people of sanguine temperament; they should take chiefly fruit, vegetable, and farinaceous articles of diet, and should not be indulged with tea or coffee.

The nervous temperament is usually characterised by pallor of the face, fineness and scantiness of hair, spareness of frame, great length of spine, and a somewhat contracted chest. The countenance is expressive, the forehead broad, the muscular system poorly developed, the movements sudden and often spasmodic, and the circulation generally defective. From the intellectual point of view there is great susceptibility of mental impression, everything is felt in extremes, at times there is almost overwhelming despondency and discontent, at others an exaltation equally exaggerated. Children of nervous temperament are very quick of apprehension, generally studious, inventive, and subtle; genius belongs to this type, and often shows itself at a very early age.

When the nervous temperament exists in combination with another, it always dominates and controls the latter. Great care is needed in the education and training of children of this constitutional calibre. They are subject to frequent complaints, and usually have many infantile disorders. Later, as the mental faculties unfold, they are liable to manifest all kinds of nervous indisposition, —chorea (St. Vitus's dance), hysteria, somnambulism, asthma, neuralgia, and various irregularities of the digestive processes. Yet, notwithstanding these weaknesses and the instability of their physique, it is remarkable that the nervous temperament endows its possessors with greater power of *endurance* than any other. Suffering, labour, fatigue, privation, and every kind of trial, moral and physical, are better supported by nervous persons than by others of hardier or less sensitive type.

The diet of nervous children should be carefully selected. It should consist of fine and concentrated aliments, all coarse, bulky, and flatulent foods being avoided. Tonics, bitters, and cordials are beneficial aids in most cases. Baths, either warm or tepid, should be daily administered, followed by gymnastic exercises and frictions from head to foot, in order to promote the general circulation and equalise the nervous tension. Boys and girls, especially girls, of this temperament, suffer greatly from cerebro-spinal irritability, and this tendency must be taken into consideration during their schooldays, in such wise as to avoid brain-pressure, anxiety, and excessive fault-finding. All nervous children are sensitive in an acute degree, they take blame terribly to heart, and are elated, often unduly, by praise. Their teachers should *not* be their parents; for unless the latter can, in the capacity of instructors, preserve a perfectly unruffled and serene demeanour, lesson-time is liable to

end abruptly in tears and laments. For nervous children are excitable, resentful of reproof and often petulant; and it is equally bad for parent and for child to come into collision as tutor and pupil. The fathers and mothers of nervous children should reserve themselves for the parlour and the nursery, and remain absent from the school-room. The parental presence should be one of repose, wholly unassociated with reminiscences of turmoil, vexation, and disheartenment. Frequent change of air and scene are beneficial—indeed, almost necessary—for nervous children. Violent exercise should be avoided, especially in the case of girls, because all the bodily functions are precociously developed and easily excited to abnormal activity in young people of this temperament, and much mischief may be done by overfatigue or stimulation of the system.

The lymphatic type is, perhaps the most easily recognisable. It consists in the predominance of the organic over the cerebral and spinal nervous system, resulting in general feebleness of the intellectual and physical forces, whiteness and flabbiness of the flesh, exaggeration of the watery fluids of the body, arrest of development, and a production of fatty tissue often inconvenient and unwieldy, with a marked tendency to chronic complaints of the mucous membranes and of the skin. Generally speaking, seaside and moist places are unfavourable to lymphatic children; they should live in country towns inland and on high levels; they should wear flannel garments, thick boots, and be well nourished, eschewing rich and greasy foods, and taking a fair portion of stimulating aliments, such as spices, pepper, mustard, coffee, and occasionally a little wine, especially if liable to any form of chronic fluxion. It is usually futile to expect much from children of this temperament in the way of

intellectual acquirement. They are dreamy, indolent, and capricious, and incapable of sustained effort. Pressure will only exasperate them; they are neither encouraged by praise nor abashed by censure. It is not in their nature to be moved by emulation or ambition of any kind: all they desire is to be tranquil and undisturbed. Women of this type make good mothers from the physical point of view, and rarely require wet-nurses for their infants.

The bilious temperament is nearly allied to the nervous, and some hygienists regard it as a derivative of the latter, with which it is frequently combined. It is characterised by a dark or yellowish aspect of complexion, black or dusky-coloured hair, a downy skin, pronounced features, well-developed muscles, with very little fat, large bones, and predominance of the functions of the liver over those of the other organs. The passions are usually energetic and their effects lasting, the character is distinguished by great perseverance, firmness, and even obstinacy. Young people of this temperament require a good deal of exercise, and their diet should be strictly moderate, vegetable rather than animal; milky foods are not suitable for them, nor are stimulants of any kind. Usually, indeed, they dislike milk and all sorts of mild or sweet dishes.

As for the composite temperaments, such as the nervo-sanguine, the nervo-lymphatic, the sanguine-lymphatic, and so forth, they are, of course, distinguished by combinations of the various types just described; and are of far more frequent occurrence than simple temperaments. Dr. B. W. Richardson (F.R.S.), in an interesting lecture entitled "Felicity, as a Sanitary Research," records his conviction that temperament is a fundamental and all-important factor in the attainment of happiness. He

says: "As a general fact, the sanguine is altogether the happier temperament, but not always the most sustained as such; the dark or bilious is the least happy in early life, but is often in later life more serene; the nervous is a varying condition, full of ups and downs; the lymphatic is, by a negative effect, the most even; and, among the twenty-four combinations of temperaments, the sanguine-lymphatic is the most felicitous in respect to physical pleasures; and the bilious-sanguine and the bilious-lymphatic, in respect to intellectual; the nervous-sanguine is the most irritable, and the nervous-lymphatic the most helpless and miserable."

Varieties of temperament must be viewed, then, as potent factors in determining the direction and result of education, and especially of that branch of education which is, properly speaking, physiological. Childhood and youth are the most plastic periods of life. According to the prevailing tone of the influences, moral, social, and otherwise, brought to bear on the vital centres of the brain and heart in early years, will be their subsequent development and calibre. Repression, worry, or frequent rebuke, combined with what in most girls' schools is usually called "discipline," will suffice to develop in a nervous temperament all the symptoms of chorea or hysteria, disorders which leave their mark on the character or physique for long periods, and blight the felicity of early womanhood. Girls of nervous temperament, or of any of its combinations, should be encouraged to adopt as a special subject of pursuit some one particular study or accomplishment, as drawing, music, botany, or one of the sciences. Their idiosyncrasy needs the satisfaction of absorbed interest and ambition, and they will pine or become melancholy if repressed to the dead level of ordinary domesticity. If such a girl

shows aptitudes and desire for unusual avocations,—as medicine, science, or other professional work, she should be encouraged and aided in following up the bent of her genius, precisely as though she belonged to the more favoured sex. If she is thwarted and restrained, nature will avenge itself against her guardians by instigating the girl so defrauded of a legitimate outlet for her mental energy, to some wild or romantic action on another plane. She will elope with a penniless adventurer, or engage in some Quixotic enterprise not less disastrous, or, failing these resources, will fall into chlorosis or some other chronic state of ill-health. For the vital activity burns fiercely in such a temperament, and cries imperatively for work and the satisfaction of ambition.

Again, lymphatic children need very careful physiological training and supervision, but, of course, of a wholly different character. Indolence and supineness are the besetting faults of the lymphatic. In common phrase, they are said to "moon about," no doubt because, astrologically speaking, they are "born under the moon's influence." Their disposition is the reverse of that which characterises the nervous or "quicksilver" temperament, and the difficulty in their case is to arouse them to an interest in any subject. Injudicious harassment and perpetual attempts to force them to occupy their minds or bodies against their will, usually result only in compelling them to take refuge in subterfuge or prevarication. In order to excuse themselves from work or effort of any kind, they will enter on a bewildering series of misrepresentations, generally as little lucid and perspicuous as the condition of their own intelligence. It is futile to endeavour to "cram" children of this constitution. Let them do what they can; expect nothing bril-

liant from them; if perchance they exhibit any livelier interest in one particular branch of study than in others, suppress the rest, and let them devote all the energy they can summon to that one. Bilious-lymphatic persons often make good executive musicians; they are not inventive, but they are reflective, and the mechanical study of music is not one that requires the exercise of acute mental processes. Self-possession also is necessary to executive musicians, and this virtue is frequently conspicuous in lymphatic types of temperament. The nervous person may break down utterly for want of self-possession, where the lymphatic subject will score a success, chiefly on account of his or her admirable aplomb. In many circumstances and avocations the power of coolness is of far more value than that of intellectual skill. The scholar of genius who is perturbed and agitated before his examiners, so that his memory plays him false and leaves his mind a prey to confusion, obviously stands a better chance of being "referred to his studies" than does the phlegmatic pupil whom nothing can excite, and who is at the top of his excellence when before his jury. At the Paris Faculty, where all examinations are *viva voce*, I have had ample opportunities for verifying these conclusions.

On the whole, the sanguine temperament and its varieties give the best material for steady success and felicity. The nervous subject is mobile as mercury; every change of scene, of weather, or of magnetic condition in his surroundings, affects and influences him. He mopes in damp seasons, and is joyously responsive to sunshine. In the midst of mountains he burns with fierce ardour and enthusiasm; among the pastures of the low-lying country he is resigned and timid. Like a flower, his subtle and various nature droops under frost or rain,

and expands beneath the light. On the other hand, nothing of all these affects the lymphatic. He resembles the Yankee who, when shown the Falls of Niagara for the first time, observed that the sight was "really very pretty." Enthusiasm never visits the breast of the lymphatic individual, nor is he ever abnormally depressed. He glides evenly through life like flowing water, which is, indeed, the philosophical analogue of his type. But the sanguine temperament has the better of both these. It is pre-eminently hopeful; its tide is always high; it is true and steadfast without being brilliant, earnest without being fanatic. Sanguine natures are usually "well-regulated" and thoroughly trustworthy. They are truthful because neither indolent nor fearful; they are persevering and determined because they have an abounding confidence in Providence. All will come right for them; they are never discouraged or faint-hearted. If your children are of this temperament, Sibyl, receive my congratulations. They will succeed in life, and will have ample and unshaken felicity; for happiness dwells in the heart of the sanguine man or woman, and to such all seasons are fair. Genius may poison itself in despair, as Chatterton did at fifteen, or run away with an innkeeper's daughter, as Shelley did at twenty; but the sanguine boy will do credit to his pastors and masters, and will grow up to become by-and-by eminent in law, in chemistry, or some other of the more solid and less artistic professions.

XXV.

ON THE HYGIENE AND CUISINE OF THE SICK-ROOM.—I.

Dear Lady Pomeroy,—I am pleased to hear that you are seriously studying the science of nursing. It is a science too much neglected in its essential elements, for although it may be true that women are by nature peculiarly adapted for the duties of the nurse, it is certainly no less true that nature does not suffice to complete the qualification. Technical knowledge is needed to supplement and to correct natural impulses, which, even in the most sympathetic and earnest persons, are liable to mislead in important matters,—such, for example, as the ventilation of the sick-room, the clothing, the dietary, and general treatment of the patient, and the regard which must be paid to his special "fancies" and temperament. No amount of science can replace sympathy and affection, but by means of science their value is enhanced a thousandfold. A good nurse is better than the physician, and her ministry is more potent to save life than all the drugs of the pharmacopœia. This axiom sounds like one of King Solomon's; and, indeed, it would not be out of place among the proverbs of the wise man. Of course I am not suggesting that the physician is superfluous; I am insisting only on the fact that his part is chiefly that of adviser and overseer; the real duties of healing are in the hands of the nurse. Therefore it is essential that

she should be intelligent, and capable not only of executing, but of understanding, injunctions laid upon her. Also, it is a decided advantage to her patient if she be a person of refinement, with the instincts and habits of the class to which he himself belongs. The doctor is, or should be, a gentleman; otherwise he cannot be a really efficient physician. So, also, the nurse should be a gentlewoman, if not by station, then at least by nature. She must step lightly, shut the door noiselessly, move adroitly, speak softly, and, above all, be scrupulously clean, neat and "nice" to look at. If the patient is in much pain, very ill or weak, the nurse must remember that silence and semi-obscurity provide the best conditions to promote recovery. There must be no whispering in corners with visitors, servants, or the doctor; all that has to be said—if not for the patient's hearing—must be said outside the sick room, for nothing more readily aggravates and disturbs a sufferer than suppressed colloquies held in his presence.

Candles ought never to be used in sick-rooms; the only light allowed should be that of a carefully shaded lamp, giving a soft, diffused glow through a tinted paper screen. The sudden flare of a candle abruptly introduced into the apartment, or placed where the flame is visible to the sick person, constitutes for him an annoyance and irritation often sufficient to induce a return of bad symptoms previously allayed, and to seriously retard rest and convalescence. I have known sudden attacks of neuralgic pain in the head and of vomiting created by nothing else than the entry into the darkened sick-room, of a servant bearing a naked light. The best illumination for the sick-room consists of a shaded reading-lamp—the wick half-high only—placed a few yards from the patient's bed or chair, and yielding a steady subdued

light. Any lamp the flame of which begins to flicker or fluctuate, must be at once removed.

Wood fuel is healthier than any other, and, when possible, should be always preferred, for although it gives less heat than coal or coke, the latter combustibles largely yield smoky products, and a fine gritty ash, which, being deposited about the room, necessitates a great deal of inconvenient dusting, sweeping, and cleaning, besides vitiating the atmosphere with exhalations of oxide of carbon, carbonic acid, and other deleterious gases.

During the cold season a wood fire should be kept burning night and day, in the sick-room, as much for the sake of ventilation and purification of the air as for that of warmth, for it must be borne in mind that the fundamental condition of ventilation lies in the difference of temperature existing between the inner and outer atmosphere; the warmer the room the freer and more constant is the flow of fresh air into it from without. In order that the supply of fresh air should be sufficient, it is not necessary to create draughts or currents of wind annoying to the persons inhabiting the apartment. On the contrary, draughts must be carefully excluded from doors and windows by means of india-rubber tubing attached to the woodwork in such a manner as to cover apertures while freely permitting opening and shutting. This method is—at least as regards doors—far better than the ordinary expedient of placing sandbags, mats, or other moveables on the floor at the entrance of the room, where such articles frequently form traps for unwary feet, and, being liable to easy displacement, are not always left in proper position by persons entering and leaving. Ventilation is best effected at the upper part of the room, towards which the heated and vitiated air ascends, and

where the entry of the fresh air engenders no current below the level of eight or ten feet. An ingress of cold air along the floor is extremely dangerous, because it is apt to chill the feet and lower limbs of persons in the room, especially if they be sitting near the fire, since it is always towards the chimney that the air current is drawn. The lower sash of a window should not be raised, but only the upper drawn down. Better still if the room be provided with a ventilator above the window near the ceiling, and clear over the heads of all present.

While upon this subject, I think that it will not be amiss to insist at some little length on the necessity of thoroughly aërating all dwelling apartments, whether inhabited by sick or sound folk, for, even in these enlightened times, there exists everywhere much want of information on the point. Nor is it only the restoration and preservation of health that are concerned; Venus and the Graces, as well as Hygeia, have a plea to put in on behalf of fresh air.

Health and beauty are intimately connected, and no advice concerning the preservation and improvement of either can be considered complete without a few words on the subject of *ventilation*.

Headache, dyspepsia, languor, general debility, and many of the minor disorders of the skin, such as acne, nettlerash, inaction of the glands, causing dryness and sallowness of the complexion, congestion of the circulation in the nose, eyelids, or cheeks, and numberless other inconvenient troubles of the vascular and nervous systems, arise from the habit of passing the night in unaired rooms, the windows, doors, and chimney outlets of which are kept closed. In some houses, especially those built during the preceding century, sleeping apartments may be found entirely unprovided with fireplaces, and in such case it is,

of course, doubly important to secure the ingress and egress of air by other means. Every adult individual requires three thousand cubic feet of air to breathe per hour if health is to be maintained, and it is, therefore, necessary that a constant inflow of pure air from without and outflow of stale air from within the bed-chamber should be ensured throughout the night. We live upon air as much as, if not more than, upon food, and stale or contaminated air is capable of poisoning us as readily as deadly drinks or unwholesome viands. But it must be remembered that air is rendered unfit for breathing not only by the action of human and animal respiration, but by that also of plants, at night, and especially by the burning of lights, whether candles, gas, or lamps. Flowers breathe like animals; they abstract oxygen from the atmosphere and give out carbonic acid gas, differing in this respect from foliaceous trees and shrubs, the green leaves of which, under the action of daylight, act inversely, withdrawing carbonic acid, and returning oxygen in its stead. For this reason, among others, forests are very invigorating and refreshing retreats during the daytime; the trees not only afford a pleasant shade, but actually purify the atmosphere and exhilarate the nervous system of the wayfarer. At night, however, the proximity of green plants is not so beneficial, and it is therefore unadvisable to keep them then in bedrooms.

In order to ventilate rooms scientifically, it must be remembered that stale or impure air, whether given out by the respiratory organs of our own bodies, or by the lights burning in the apartment, is always warmer than unbreathed and unburnt air, and that, consequently, the latter occupies a lower stratum than the former, which, being heated, mounts and rises to the upper part of the room, near the ceiling. In theatres or churches the

hottest and most unwholesome atmosphere is always found in the neighbourhood of the galleries; and in closed chambers, constructed for experimental purposes, and lighted with tapers of unequal length, those that are tallest, and therefore higher up than the rest, always go out soonest. But, although for this reason it is desirable that outlets for impure air should be situated in the upper part of our rooms, it must not be forgotten that wherever such outlets are constructed they will not only give exit to heated air, but ingress to cold outside air, and that the latter, being much heavier than the stale air, will fall through it in a steady stream, and make its presence very disagreeably felt by the occupants of the apartment. Ventilators, to be hygienic and convenient, must, then, be devised in such a way as to introduce the outer and colder air in an upward direction, and to prevent it from descending immediately like a shower on the heads of the persons present. To accomplish this object it is necessary to have a good clear space between the ventilator and the ceiling, and to direct the entering column of air obliquely, in such a manner as to avert any sudden draught.

A system of ventilation known as the "Sherrington" has been widely recommended by my professional *confrères*, and as it is easily adapted to any room, I will give a brief description of it. It consists of an iron valve fitting into an aperture in the wall, which should not be too high, but so placed as to prevent rebound of the cold air from the ceiling. The side of the valve, which faces outwards, is covered by an iron grating. The valve slants forward, and is provided with lateral "cheeks" which prevent the overflow of cold air from its ends in such a manner as to direct the entering current upwards, and cause it to ascend. If desired, the valve can be closed by pulling a string, or it can be kept partly open.

Another good method of ventilation, and one that has the advantage of being extremely simple, is the following:—Raise the lower sash of the window, and insert between the woodwork and the sill a "lift," about an inch deep, extending from end to end, and filling up the whole opening. The air then enters *between* the sashes, and in an upward direction, because the lower sash, being supported by the lift, is raised an inch above the lower edge of the upper sash. Very little draught is created by this plan, upon which, however, Mr. Tobin, of Leeds, has improved, by perforating the lower sash-frame with several small holes, into each of which a little case containing cotton-wool is fitted. The wool filters the air, and prevents the entry of smuts, or of too fierce a current. Lids can be fitted over the holes so as to close them at will. Many other contrivances are used, too numerous to mention here, but I will just add a few words in commendation of the double-pane system, which is a modified application of "Louvre" ventilation. Louvre ventilators are made of glass, and can be fitted into windows instead of panes, but as they have metal frames, they are liable to become rusty and unworkable. But the double panes are free from this objection. They consist of two ordinary glass panes, the outer of which has an open space of about an inch or less at the bottom, and the inner an open space of the same dimensions at the top, so that the current of air entering is deflected upwards. If this contrivance be used in large cities, however, dirt is apt to accumulate between the panes, and is with difficulty removed. Cooper's disc is more suitable for urban ventilation, because it is more easily cleaned. It is a revolving circular glass pane, perforated in five or six places, and fitted over an ordinary window-pane similarly pierced. By turning the disc on

its pivot the holes can be made to correspond or not, and thus the air can be admitted or cut off as may be wished. To clean it, the pivot must be unscrewed.

Then there is the vertical shaft ventilator, which you may see in most "health exhibitions," and which, of late, has become very fashionable; and scores of other more or less convenient and hygienic apparatus impossible to describe here. The one thing to be borne in mind, as a general rule, is that all openings for ventilation should slant inwards and upwards, at a point about two feet below the ceiling in a moderately lofty room, and as far as can be from the fireplace. Slides or lids that can easily be drawn over them when necessary, should be provided. Tubes for ventilation on this system have been invented by Shillito and Shorland, McKinnell, Tobin, Tossell, and others.

In warm summer seasons, of course, the windows, whether of the sick-room or of the ordinary dwelling apartment, should be somewhat widely opened at the top throughout the day, because in warm weather the exchanges between the outer and inner air are far less brisk than in winter, owing to the fact that but little difference of temperature exists between the atmosphere indoors and that without. Even at night, in the summer season, the sick-room windows may remain opened, for night air is by no means harmful, as many untrained nurses suppose. Care must, however, be taken to prevent the entry of gnats and other nocturnal insects, by fastening over the aperture a piece of tarlatane or coarse muslin; and the window so opened must not be in the immediate vicinity of the patient's bed.

It is, moreover, important to the purity and wholesomeness of the air in the sick-room that no utensil containing fœtid or evacuated matters, liquid or other-

wise, should be permitted to remain in the apartment. Such utensils should, immediately after use, be carried away and cleansed, and a night-table provided in which to keep them when not in use.

The sick-room should be large and airy, the bed uncurtained, or, at least, if the weather be cold, only very lightly guarded by washable dimity or chintz hangings, so that the air may have free circulation about the bed on all sides. Floors of polished wood—*parquet*—which can frequently be swept and cleaned, are greatly superior from a hygienic point of view to the ordinary carpeted floors of most English dwellings. Carpets, especially in sick-rooms, quickly become uncleanly, and harbour a vast amount of dust and organic particles, often of an infectious character. Instead of nailed, and therefore immoveable, carpets, I would substitute warm rugs and furry hides, strewn loosely about the room, and capable of being daily removed and shaken in the open air outside the house. *Parquet* flooring is, of course, expensive on a large scale; but oak or even deal boards can, without much cost or difficulty, be planed, plugged, and varnished in such a manner as to completely exclude draughts between the plankings, and to present an even and pretty effect.

The coverings of the patient's bed should be warm, light, and porous; coverlets of loosely knitted fluffy wool, sufficiently large to tuck in at the sides, are especially commendable. Nor can I sufficiently impress upon you the necessity of always keeping your patient's feet warm, whether he be in or out of bed. For this purpose a flat tin, filled with boiling water, should be placed inside the bed, and enveloped in flannel so as to prevent it from burning the feet, and the nurse must be careful to keep it replenished as occasion requires. When the patient

leaves his bed, and "sits up," the hot-water tin may be placed on a stool beneath the soles of his feet, or inside a knitted foot-muff.

In my next communication attention shall be paid to the subject of sick-room cookery, times and methods of administering food, and other details concerning diet in stages of acute malady as well as in those of convalescence.

XXVI.

ON THE HYGIENE AND CUISINE OF THE SICK-ROOM.—II.

Dear Lady Pomeroy,—In fulfilment of my promise, this letter shall be devoted to invalid dietaries, with a few simple suggestions concerning various *regimens* and their appropriate uses.

Alimentary regimens are usually divided by authorities on hygiene into seven classes, which are,—tonic, stimulant, analeptic, emollient, laxative, astringent, and temperate or watery. This classification is, of course, somewhat arbitrary, and in practice it is customary to combine the characteristics of two or more groups. The advantages of a cleverly and scientifically composed regimen cannot be too highly estimated, for diet plays the leading part in the art of healing, and the ancients wisely attributed to it an importance which has since been unhappily usurped by drugs. Hippocrates did not hesitate to affirm that the most learned and skilful physician was he who cured the sick by means of an appropriate regimen.

The first class of regimen above enumerated—the *tonic*—consists of aliments selected for their richness in nutritive qualities, and comprises all albuminous, mucilaginous, and feculent substances, whether animal or vegetable, plants and herbs containing bitter principles, tonic beverages, Bordeaux and Burgundy wines, and in general all the more solid and generous foods and drinks. This regimen is appropriate to cachectic conditions of ill-health—that is to say, chronic states of exhaustion and feebleness follow-

ing prolonged maladies by which the system of the patient has been depleted and shattered; it is suitable also to cases of brain fatigue after severe mental strain, and should be permanently adopted by lymphatic, scrofulous, and weakly persons, especially those suffering habitually from fluxions of the intestine, loss of blood, and other similar excesses in the function of internal organs.

The *stimulant* regimen comprises the greater number of the aliments named in the preceding class, with the addition of herbs, spices, and condiments possessing aromatic and pungent qualities. Mustard, ginger, pepper, curry-powder, garlic, capsicum,—all these things, and others of analogous kind, are stimulants. Among meats, game in particular belongs to this class, and among beverages, coffee, tea, and liqueurs. Such a regimen is useful in cases of long-continued loss of appetite, nervous nausea, convalescence after infectious fevers or other epidemic diseases, and in certain types of illness characterised by prostration of the physical forces, sluggish circulation, faintness, and feeble digestive power. On the contrary, a diet of this kind must be studiously avoided wherever heart disease is present, aneurism of the blood-vessels, liver complaint, or tendency to apoplexy, gout, or gravel.

The *analeptic* regimen is sometimes described as a *milk* diet. It is one of the most important and useful. Its component aliments are at once nutritious and emollient in a high degree, and include milk and all milky products, light puddings, farinaceous gruels and soups, custards, and beverages prepared from pearl barley and other fine meals and grains. This regimen is especially suited to acute stages of illness, in fevers, diseases of the chest or throat, dyspepsia, cancer, complaints of the kidneys, hysteria, rheumatism, and inflammation of the intestinal canal.

Next in order comes the *emollient* regimen, the model "light diet" of the doctors, often apostrophised by discontented nurses and recalcitrant patients as "lowering." The aliments which compose it are chiefly vegetables, fruits, jellies, thin soups, and watery broths. It is the appropriate diet of severe cases of illness, hemorrhage, dysentery, pneumonia, pleurisy, gastritis, typhoid fever, and during the first day or two after serious surgical operations.

Laxative and *astringent* dietaries consist, of course, in the usage of foods and drinks possessing these characteristics, the first comprising a liberal allowance of fruits, stewed, baked, or raw, salads, oils, green vegetables, and so forth. This kind of regimen is particularly appropriate to cases of scorbutic disease. Astringent qualities are useful in the treatment of chronic diarrhœa, hemorrhage, and fluxions of various kinds. A milk diet is frequently associated with the employment of astringent herbs and grains. Rice possesses this quality in a high degree, and when boiled in milk or water is often successfully employed to arrest persistent diarrhœa or English cholera.

Lastly, a *temperate*, or, more correctly, a *watery* regimen, consists of fruit and acid drinks only. It includes grapes, oranges, nectarines, peaches, lemonade, and other substances combining vegetable acids with gummy and sugary principles. Such a dietary, the nearest approach to a fast consistent with eating at all, is most suitable to hot climates, and is resorted to in maladies characterised by plethora, repletion, acute inflammation, brain fever, and some forms of madness. The effect of this regimen is to lower the circulation, and thereby to abate the animal heat and any tendency to fever that may exist, to augment the secretions and facilitate the action of

the intestine, and, generally, to refresh, cool, and soothe an overheated or irritated system. Aneurism of the arteries, and cases of cancer in the stomach or other parts of the digestive canal, are often advantageously treated by the adoption of a purely fruit diet; but its effects must be carefully watched, and if exhaustion or abnormal lowering of the heart's action appear, it must be promptly modified by the addition of farinaceous or albuminous foods in small quantities. Absolute abstinence from all aliments—even from fruits—is necessary in the treatment of certain violent disorders, such as apoplexy, cerebral congestion, and concussion of the brain, rupture of blood vessels, capital operations, and dangerous wounds of the bowels, stomach, or other internal organs. In the acute stages of scarlet fever, small-pox, erysipelas, and other diseases characterised by strong febrile symptoms, severe fast is advisable, so that the circulatory and respiratory functions may be favourably modified, and the intensity of the morbid action reduced as much as possible.

To quench the thirst which characterises such diseases, demulcent or acidulated beverages should be administered from time to time throughout the day and night. Barley-water, the most useful and agreeable of such drinks, is prepared in the following manner:—Wash a tablespoonful, or, if required, double the quantity, of pearl barley in cold water; then pour off the water and add to the barley two or three lumps of sugar, the rind of one lemon, and the juice of about half a lemon; pour over the whole a pint of boiling drinking water, and let it stand covered for two or three hours on the hob of the stove or fireplace to keep warm; then strain the mixture, and let it cool. Lemonade is made by slicing into about four or five pieces a good-sized lemon, to which must be added several pieces of loaf

sugar. A pint of boiling water is added, the mixture is covered, and allowed to cool. If needed in a hurry, lemonade can be made with cold water, but in this case the lemon-juice must be squeezed out of the fruit, and the sugar melted separately in hot water, and added with the juice to the cold water. Whether prepared with hot or cold water, the beverage must be strained in order to remove from it the pips and pulp of the fruit. Toast-water, which is, to some patients, more palatable and acceptable than either of the foregoing drinks, is best made with *stale* bread, thoroughly browned before a red fire. Immediately after taking it off the toasting-fork, put it into a jug and pour over it a sufficiency of boiling water. Cover it, and let it cool. Tamarind whey, a cooling and slightly laxative drink, is made by adding two tablespoonfuls of the fruit to a pint of milk while boiling, stirring the mixture well, and afterwards straining it. This beverage should be taken cool, and must always be freshly made.

As a general rule, it must be borne in mind that no preparation for the sick room is fit for use the day after it has been made; nor, if possible to avoid it, should either food or drink be kept standing in the bed-chamber occupied by the patient. The atmosphere and temperature of the sick room are apt to hasten putrefactive decomposition, especially in milky compounds. A pleasant demulcent drink is made by blanching two ounces of sweet almonds and two bitter almond seeds, pounding these with a little orange-flower water sufficient to make a paste, and then rubbing up the mixture with a pint of boiled milk diluted with an equal quantity of water. The emulsion thus formed must be then strained and sweetened. This liquid is called orgeat. It is nutritive as well as emollient. Rice-water, which I have re-

commended as a useful drink in cases of diarrhœa, dysentery, and similar complaints, is prepared in the following manner: — Thoroughly wash an ounce of Carolina rice in cold soft water. Then steep it for three hours in a quart of water kept simmering, and afterwards gradually raised to boiling point; strain and cool the liquid before use. Linseed tea, a useful beverage in acute pulmonary disorders, is thus made:—Take an ounce of bruised linseed and two drachms of bruised liquorice-root, put them into a jug, and pour over them a pint of boiling water. After the tea has been allowed to "draw" for three or four hours on the hob, strain it, sweeten it to taste, and serve it hot. A little lemon peel can be added as flavouring. Iced milk is extremely serviceable in the treatment of maladies involving nausea, or diarrhœa, and also in diseases of the throat and stomach. As a rule, ice may be freely used to allay febrile thirst, and remove unpleasant tastes in the mouth; but in administering it to patients in a state of stupor or great weakness, care must be taken that the fragments given are small enough to avoid the possibility of causing choking. Ice may also be conveniently added to gum-water, isinglass-milk, orangeade, or any similar beverage.

In cases of severe collapse or exhaustion the following mixture will be of signal service; it is quickly made, and needs no great skill in the preparation. Take two ounces of first-rate cognac brandy, four ounces of cinnamon water, the yolks of two fresh eggs, and half an ounce of pounded loaf sugar. Beat up the eggs and sugar rapidly, add the cinnamon water and brandy, stir the whole well, and administer in teaspoonful doses. In extremely urgent cases the quantity of brandy may be doubled, age, sex, constitution, and previous habits being taken into due consideration.

XXVII.

ON THE HYGIENE AND CUISINE OF THE SICK-ROOM.—III.

Dear Lady Pomeroy,—I think you are quite right in saying that a savoury and suitable dietary for the use of invalids would be very acceptable to the public, and that difficulty is frequently felt in providing dishes for the sick-room of an appetising, and at the same time of a light and inoffensive nature. I propose to give you a few hints of the kind you desire, with some formulas which are certainly not generally known in this country.

Of course the *regimen* of any particular invalid must, in great measure, be placed under the direction of the physician. Viands and beverages suited to some forms of malady, or of convalescence, are unsuited to others, and, moreover, due account must be taken of individual idiosyncrasies and tastes. More especially with regard to invalids than to persons in health, it is important to bear in mind that an aliment which is not relished will seldom prove nutritious or beneficial, because the necessary flow of digestive secretions is withheld for want of desire, and eating under such circumstances is likelier to result in indigestion and nausea, than in reparation of vital force and renewal of function.

The first question in your letter refers to the use of beef-tea and bouillon, and asks my opinion of the value of Liebig's *extractum carnis*. Medical opinion is still greatly divided respecting the nutritive qualities of beef-tea, even

when made on the most approved plan. Ordinarily the beef used as the basis of the "tea" is subjected to prolonged boiling, and the liquid, on cooling, becomes a jelly, which fact is wrongly supposed by many people to be a guarantee of its nutritive value; while the really nutritious part of the beef—the albuminous matter—becomes condensed and agglomerated in such a manner as to form a part of the subsequently rejected residue, or else to be skimmed off with the so-called "scum" rising to the surface of the boiling mixture. Beef-tea or bouillon thus prepared contains chiefly gelatine, fatty matter, flavouring and odoriferous principles, meaty acids, and certain soluble alkaline salts. It is a mistake to suppose that a concoction of this kind has any high nutritive qualities, for the quantity of albumen contained in it does not exceed an infinitesimal proportion.

Concerning Liebig's Extract, I prefer to quote the words of Dr. Pavy, an undoubted authority on dietary matters. "The true position of Liebig's Extract," he writes in his "Treatise on Food," "is scarcely that of an article of nutrition, and this is now beginning to be generally recognised. The fact that from thirty-four pounds of meat only one of extract is obtained shows how completely the substance of the meat which constitutes its real nutritive portion must be excluded. The article, indeed, is free from albumen, gelatine, and fat, and may be said to comprise the salines of the meat, with various extractive principles, a considerable portion of which doubtless consists of products in a state of retrograde metamorphosis, and of no use as nutritive agents. If not truly of alimentary value, the preparation nevertheless appears to possess stimulant and restorative properties which render it useful in exhausted states of the system."

And, in fact, the value of ordinary bouillon, as well

as of Liebig's Extract, may be summed up in the word "stimulant." These beverages act as excitants of the digestive organs, and, provided they are relished, they may be useful as restoratives of the appetite and digestive powers, this effect being due principally to the potassium salts and flavouring matters contained in them. The old notion that jelly must necessarily be nutritious has been long since exploded by scientific investigation. The chemical composition of jelly, or gelatine, indeed approaches that of albuminous matter, but, physiologically, its action is very different. Gelatine does not undergo in the stomach the same transformation as nutritive substance;—that is to say, the gastric secretion does not convert it into *peptone*, and it is consequently of little or no value as an alimentary agent. Nay, more, many of the best authorities on hygienic chemistry, both at home and abroad, are of opinion that the addition of gelatine to the food of invalids may often seriously disturb or retard the digestive process.

It is, however, necessary to state that all writers on the food question are not agreed, even on this point. Dr. Edward Smith, F.R.S., for instance, believes jelly to be a valuable form of food, and this view is shared by many practitioners of considerable name and fame. Sir William Roberts places very little faith in beef-tea, as the term is generally intended, but recommends in its place cold-made meat-infusions. As, however, he admits that these infusions have an unpleasant "bloody" appearance, and a "raw" taste, which are difficult to disguise, and as I am emphatically of opinion that one of the chief requisites in sick-room cookery is *niceness* both in aspect and in flavour, I shall not trouble you with Sir William's recipe.

Fruit jelly must not be confounded with the jelly

produced by the coction of bones. The latter is a compound of four elements,—oxygen, hydrogen, carbon, and nitrogen. Fruit or vegetable jelly is a compound of the first three elements only. As an aliment, however, fruit jelly, the basis of which is pectine, is of no greater value than is ordinary stock jelly.

Beef-tea, even when scientifically prepared, is apt to be of but little service, because it is usually distasteful to invalids, on account of its full and unsavoury taste and odour. Prepared unscientifically, it is certainly more toothsome, but is then, as I have pointed out, innutritious. A more agreeable, and a superior alimentary preparation may be made with fish-stock, preferably fresh haddock, flavoured with pot herbs and vegetables. The value of fish is too little appreciated in this country notwithstanding—or, perhaps I should rather say on account of—the fact that as an article of food it is far more economical than butcher's meat, besides being easier of digestion, and much less liable to disease. Dr. Davy, F.R.S., observes that populations subsisting on fish are found to be particularly strong, healthy, and prolific. "In no other class than in that of fishers," he says, "do we see larger families, handsomer women, or more robust and active men."

Moreover, not only do sturdy folks flourish so well on fish, but, as Dr. Pavy points out, it is also a specially suitable food for invalids and persons with weak digestions, and can constantly be employed with advantage when the stomach will not support coarser kinds of animal food. *Sea* fish, too, contain certain strengthening elements, which, from a therapeutic point of view, are invaluable, and which are far more efficaciously introduced into the system in the form of food than under that of drugs. Every one knows, too, how high a place

has been accorded by medical men to the oil of the cod's liver as a fortifying agent in diseases due to mal-nutrition and want of stamina. In this oil are contained three important elements—phosphorus, iodine, and bromine—besides a special constituent peculiar to fish, but not necessarily to the cod, since oil of similar properties is yielded by several other sea-fish. It, is, however, an unpleasant medicine to the taste, and often, therefore, impossible to assimilate; so that the consumption of fish-broth containing its chief ingredients, and prepared in a palatable form, is to be preferred. In order to make such broth scientifically, and to extract from the stock the utmost of its nutritive principles, the fish used should, while uncooked and unboned, be broken up into small pieces and placed in cold water. A pound-and-a-half of ray, skate, cod, haddock, or other fish, will require two pints of water, which should be poured upon it in an earthenware preserve jar. This jar should then be set in a saucepan of hot water, so as to form a *bain-marie*, and placed upon a moderate fire to boil gently for about an hour. Meanwhile, put into a stew-pan, with a little fresh butter, one or two small carrots and onions; cut the carrots in pieces and the onions across; then cover them with slices of leeks, some sprigs of parsley, mint, thyme, marjoram, a little celery seed, and a bay-leaf, with a few cloves. Moisten with a little hot water, and put the whole to simmer over a slow fire. In an hour add more hot water, and stir until the contents are well mixed and coloured. Then add the fish-stock, and pass through a coarse strainer to preclude the possibility of leaving bones in the broth.

A very savoury and nourishing broth may also be made without fish-stock, using instead of the latter a purée of peas or of lentils. To prepare this, take two or

three pounds of dried peas or beans, wash, and boil them for some hours, adding water from time to time. Stew half-a-pound of rice for two hours in half-a-gallon of water, with a little butter, a mealy potato, a turnip, carrot, onion, head of celery, a couple of Jerusalem artichokes, and a leek or two, all cut into dice. Then add the peas-broth, with pepper and salt, a little parsley, one or two bay leaves, some thyme or mint, and a few cloves. Boil up, and if thickening be required, add before serving a little cream, well stirred in, and a few button mushrooms.

Or again, an extremely nutritious and valuable soup may be made by soaking four ounces of the best macaroni in cold water for two hours, then throwing it into a pint of *boiling* milk and water—two parts of milk to one of water—to which must be added salt, pepper, a tablespoonful of stale bread-crumbs and a small onion, with a little spice. Boil the whole gently, pass it through a sieve, then let it *simmer*, and add before taking it up a gill of cream and a few peppercorns. Vermicelli and sago broth may be made in the same way.

In the colder season of the year oyster broth is commendable as a nutritious and suitable aliment for convalescent invalids. To make it take a pint of fish-stock and two dozen oysters, a little butter, according to taste, two ounces of flour, a small quantity of grated nutmeg, and a teaspoonful of Chili vinegar. Add to these a quarter of a pint of cream, or good milk, and stir over the fire till it boils gently. Toast should be eaten with all these broths.

XXVIII.

ON THE HYGIENE AND CUISINE OF THE SICK-ROOM.—IV.

Dear Lady Pomeroy,—In a former letter I pointed out to you that in preparing food for invalids it is necessary to pay special attention, not only to the condition of their digestive organs and powers of assimilation, but to their particular tastes and fancies. Your patient will not thrive on food which he does not like. For the living organism is a wilful creature; its juices refuse to flow at the call of aliments repugnant to it; it must be catered for, not as a mechanical apparatus for the consumption of fuel, but as a complex and finely-endowed being, whom, if need be, you must wheedle and propitiate with all manner of subtle devices. Therefore you will understand that in the application of what I am about to say regarding sick-room cookery, you must bear in mind always the special partialities and aversions of individual patients, and, within due limits, provide accordingly. Thus, some invalids have an unconquerable repugnance to jelly, and recoil from it with disgust; others sicken at the sight of arrowroot, gruel, or milk puddings. Sometimes this dislike is due to the form in which such foods have been habitually presented to them, to the insipid manner of preparation adopted, or to some neglect easily remediable. You must take pains to ascertain the facts in respect to these details before accepting as final the emphatic declaration, "Oh, I

can't bear this or that; it never agrees with me. I hate the taste of it." For it often happens that the addition of some savoury condiment, a sprig or two of pot-herbs, a little mace, a few cloves, a scrap of lemon-peel or cinnamon, may make a world of difference in the character of the broth or the gruel which you are anxious your patient should take. Sick-room cooks ought, however, to be specially chary of one particular form of condiment, the proportion of which employed is often greatly in excess of the requisite quantity. I speak of *salt*, an ingredient which should be administered very sparingly to invalids, because it is liable to hinder and impede digestion, to irritate the mucous surfaces, and to excite unnatural thirst. Salted meats are, as is well known, very indigestible, the reason being that salt is, in its nature, a preservative agent, preventing disintegration, and hardening and consolidating organic substances. When it is wished to preserve butter, fish, flesh, or other perishable matters, it is customary to salt them, because by this means they are rendered refractory to decomposition and alteration. But, by this very action, they become equally refractory to the process of assimilation and dissolution in the stomach, and their presence in a delicate or enfeebled organ is apt therefore to set up a state of grave irritation and of subsequent fever.

Salt ought to be viewed rather as a medicine than as a condiment, for it differs widely, both in its operation and in its nature from all other condiments in common use, being, unlike these, a mineral inorganic product, and needing to undergo in the living economy a more complex evolution than principles immediately derived from vegetable or animal sources. In its crystallized state, moreover, salt exhibits an extraordinary avidity

for water, and thus causes thirst, which should especially be avoided in cases of debility, tendency to fever and invalid conditions generally. Use, therefore, in your sick-room cookery, only just sufficient salt to make your dishes palatable, depending rather for their savouriness on such organic substances as ginger, pepper, spices, thyme, bay-leaves, vanilla, parsley, mint, celery, chives, eschalot, horseradish, and other aromatic or pungent stimulants of the digestive functions.

Before serving a meal of any kind to an invalid, see that his hands and face have been washed, and his mouth well rinsed with tepid water to which a few drops of myrrh have been added; if he is able to clean his teeth, so much the better. You will find that when these little attentions have been observed he will relish his food far more than when they are omitted. Take care, also, that the tray on which any viands brought to him are served, be covered with a clean white napkin, the glass and silver bright, the dishes prettily garnished, and the general aspect of the meal as inviting and appetising as possible. With a sick person such small details often carry great weight, and strongly influence the imagination.

Before I enter into particulars in regard to special recipes and preparations, it will, I think, be well to give you some general ideas in regard to the relative digestibility of the various articles of food in common use, in so far as it has yet been possible to ascertain their properties in this respect. By the word "digestibility," we must understand the quality any given aliment possesses of yielding promptly to the digestive juices the sum of its nutritive elements. The proportion of nutriment which it may contain is independent of its digestibility, since, as will presently be seen, fruit is more

digestible than poultry, though the latter is certainly richer in alimentary principles. Again, certain conditions of the constitution and preparation of different viands modify both their digestibility and their nutritive properties; for example, highly concentrated foods, such as pure albumen, are far less nutritive than aliments containing an admixture of various principles; and a process of cooking which disintegrates and dissociates tissue in such a manner as to render it easily soluble in the stomach greatly enhances its value as food.

Solid foods, of whatever kind, are always more readily converted into chyme—that is, into the state necessary for assimilation by the blood—when eaten roasted than when prepared in any other manner. Boiling deprives the material subjected to the process of a large proportion of its nutritive substances which escape by evaporation from the water in which it is cooked. Thus is lost a great part of its flavouring matter, called by chemists osmazome, its fatty and gelatinous elements; while its whole mass is rendered tougher and more fibrous. Part of its albumen is dissolved, and, with its hematosine, coagulates and floats on the surface of the boiling water in the shape of froth and scum. The meat which has undergone this process is largely deprived of its most nutritious principles. It is the more difficult of digestion, also, in proportion to the quantity of water used and the length of time the boiling process has been continued. Roast meats are more savoury, more stimulating, and more nutritive; but the heat applied to them should be uniform and gentle; hence slow fires cook better than fierce ones, the object being to expand and rupture the fibres of the viands, so as to render them susceptible of easy division and mastication, and not to char or harden them. In the process known as baking,

the comestibles are penetrated and softened by the vapour of their own juices, and although the nutritive principles are thus largely retained, the food is less easily digestible than when exposed before an open fire. Fricassee, frying, and similar methods of culinary preparation, in the course of which considerable quantities of grease are used—this grease being usually of a most objectionable nature, such as pork fat and dripping—should be avoided, especially in catering for invalids or persons in delicate health. These methods of cooking give rise to certain chemical changes in the ingredients used, the effect of which is to deteriorate the meats and to cause thirst and severe indigestion.

Of all processes of cooking applied to fish and flesh-meat, that of grilling or broiling is the best; while of all modes of preparation to which vegetables can be subjected, that of steaming is to be infinitely preferred. In fact, all vegetables, of whatever description, are perfectly cooked only when they are steamed. A boiled potato is tasteless, watery, poor in soluble salts and nutriment; a potato steamed in its skin in a covered receptacle made for the purpose, is both delicious in flavour and valuable as food. Nor is the potato the only vegetable that is habitually spoilt by unscientific preparation. One of the most delicate and precious foods for invalids—asparagus—which, when cooked with due art and served on toast might tempt the appetite of an ascetic, is generally ruined, and deprived of its subtlest and most sapid qualities by the ordinary treatment which it undergoes in English kitchens. Asparagus, of whatever variety, should, before cooking, be loosely tied in a bundle with a wisp of long grass, and the ends cut exactly even. The bundle should then be placed, standing endwise, in a deep covered saucepan, not three parts full of water.

The heads should be out of the water, the steam sufficing to cook them, as they form the tenderest part of the plant; while the hard stalky part is rendered soft and succulent by the longer boiling which this plan permits. Instead of the orthodox twenty minutes allotted to average asparagus boiling in the usual manner, a period of thirty or forty minutes on the plan recommended will render quite a third part of the stalk delicious, while the head will retain its full flavour and consistency, being cooked by the steam alone. Sir Henry Thompson, in his little treatise of "Food and Feeding," advocates this method of preparing table vegetables. The same plan is, of course, applicable to seakale, celery, vegetable marrow, tomatoes, cauliflower, and all similar comestibles; remembering, however, that the process of steaming requires, always, twice the time at least, needed for boiling them in the usual manner.

Upon farinaceous, oily and fatty matters, the effect of cooking is somewhat more complex than in the case of the foods we have just enumerated. Starch—the feculent matter constituting so large a proportion of the various meals and grains in common use, as well as of certain edible roots and stems, such as sago, tapioca, and arrow-root—consists of minute cells or granules which, under the influence of heat and moisture, whether derived from steam or boiling water, swell and burst, thus becoming soft, and loosening the texture of the substance they compose. A considerable portion of the fecula becomes transformed into dextrine, which substance is the connecting link between starch and sugar. Although by this process such foods as tubers and the farinacea are rendered lighter and more digestible, these beneficial results are, in the case of some preparations, in which fat or oil is largely used, more than counterbalanced by

the nature of the change which cooking produces in these latter substances. Fat, whether animal or vegetable, when subjected to prolonged heat, undergoes decomposition, attended by the formation of fatty acids and of a pungent volatile product called acrolein, liable to cause dyspepsia. These acrid matters are the source of the gastric disorder known as "heartburn." Baked fat undergoes greater decomposition than boiled fat, and for this reason, pie-crust, and pastry generally, are compounds of a more indigestible order than boiled puddings.

Having thus resumed the chief modifications caused by cookery in the digestibility and nutritive value of various foods, I will briefly sum up for you the conclusions arrived at by Dr. William Beaumont in regard to the relative solubility in the human stomach of the comestibles most commonly used in this country.

He found that beef, mutton, pork, and veal are less easily digestible than game and poultry, and these, again, much less readily than fish. Fish are, as a rule, a great deal more easily digestible than any other kind of animal viands. Roast meats of whatever description are more easily digestible than meats boiled or fried. Mutton and beef are both more digestible than pork. White fowl is more easily soluble than game, and fresh fish than fish salted. Milk and milky products are more digestible than any of the preceding articles, fish only excepted; and milk *boiled* is more digestible than it is raw. Cream is more readily disposed of than butter or cheese. Eggs, when lightly cooked, are as easily digested as boiled milk. Beef tea and meat broths are very refractory, and quite as difficult of digestion as pork. Feculent vegetables are as digestible as milk, eggs, and fish; bread is less so than potatoes; starchy foods when unmixed with grease

are very readily soluble. Fresh green vegetables are digestible in the same degree as poultry. Lastly, the most digestible of all foods in the human stomach are fruits.

Of course, you will remember that individual peculiarities and idiosyncrasies may modify considerably the special application of these data, as also may an unnatural or diseased state of the stomach itself. Experience and personal observation must qualify all scientific deductions, for no general rule is without its exceptions and variations.

XXIX.

ON THE HYGIENE AND CUISINE OF THE SICK-ROOM.—V.

Dear Lady Pomeroy,—Now that you have a general idea of the various kinds of regimen appropriate to special states of ill health, it will be well to add a few suggestions in regard to the method and times of administering food to invalids. Patients suffering from acute diseases involving fever should, in the earlier and severer stages of the malady, be strictly dieted on a few albuminous broths, and acid or milky beverages. Chicken broth is prepared in the same manner as the fish broth for which I gave a recipe in a former letter. It should be served hot, with small slices of crisp, freshly-made toast. Any of the acidulated or demulcent drinks described in my last epistle would suit as beverages. Very little food should be taken at a time, and a pause should be allowed between each spoonful. The best time for administering food in such cases is in the morning, between eight and twelve o'clock, for the pulse is then more normal and the temperature lower than in the later part of the day, consequently the digestive organs are better able to receive nourishment. At night the only aliments permitted should consist of some such light drink as barley-water, lemonade, or tamarind milk, and even these must be given with caution. When convalescence sets in after acute disease, some patients develop an abnormal appe-

tite, and ask for solid viands, which, in health, may have been favourite dishes, as, for instance, beef steak, sausages, mutton chops, or beans and bacon. These cravings must on no account be satisfied, for their indulgence will almost inevitably induce relapse, and *febris carnis*—or meat fever, as physicians term it—will result, to the great detriment, and even danger, of the enfeebled organism of the patient. Until perfectly restored, and until exercise in the open air can be freely taken, no convalescent should be permitted more than one meal of animal food daily, and this food should not consist of any coarser meat than that of white fish or poultry, with a single glass of good claret.

In the earlier stages of convalescence the poultry or fish would be better dispensed with, and instead the patient should have an egg lightly poached on toast, asparagus or seakale prepared by steaming in the manner already recommended, and served on toast with a little simple sauce; custard pudding, ground rice boiled with milk, racahat, or an omelette. Very few English cooks know how to make a good omelette—a fact which is greatly to be deplored, for no more delicious dainty has ever been invented than is an omelette *secundum artem*. Here is the continental recipe; but the continental skill can be acquired only by practice:—

First, you must have a china fire-proof omelette pan, with a wooden handle, and a steady, smokeless fire giving a good heat. Next, break three or more fresh eggs, according to the size of the omelette required, but never less than three eggs, beat up yolks and whites separately and thoroughly in a basin; have ready your omelette pan, quite hot, put into it about an ounce of good butter, then turn in the beaten eggs, add immediately a sprinkling of fine sweet herbs chopped very small,—marjoram, basil,

lemon thyme, parsley, and chives or eschalot, with a little pepper and salt; when the omelette has begun to settle, turn one half over on to the other with a broad silver knife, and serve at once, *in the omelette pan.* Omelettes should be eaten directly they leave the fire, and must never be covered, or turned about from one dish to another. A richer and more tasty omelette is made by adding a spoonful of cream and a little piece of butter to the eggs, and whipping up the whole together before pouring into the pan. Foreigners generally add a clove of chopped garlic to the herbs, but this would not be suitable for an invalid *cuisine.* The art of omelette making consists in the lightness and rapidity with which the operation is performed, and in the quantity and quality of the heat employed. Only experience can supply the necessary skill.

Racahat is an Arabian preparation of fine lentil flour, rice, and cocoa. It is a perfect food for invalids, at once nutritious, digestible, and exquisite to taste and smell. All first-rate chemists supply it, with directions for its preparation, which must be carefully followed, for its excellence depends in no small degree on the method of cooking it. Milk jelly, an Italian dish, is another nourishing and toothsome dainty, made as follows:— Whip several eggs (from four to six), white and yolk together, in a basin, adding two dessert-spoonfuls of powdered sugar, or less, according to taste; then pour in gradually a pint of fresh milk, beating up the mixture all the time. Flavour with vanilla, cinnamon, almond, or other flavouring. Pour the mixture into a mould, and put it on the fire in a *bain-marie* till it thickens to a jelly. When cold, pour it out, and serve it. Ordinary jelly, orange or lemon, is pleasant as a refreshment, but it must not be viewed as a fitting substitute for more sub-

stantial food, for it contains but little nourishment. It should be stiffened with isinglass, not gelatine.

Macaroni *au blanc de poule* is a Swiss dish, quite suitable for invalids entering upon convalescence. To make it a sufficient quantity of medium-sized macaroni should be boiled for an hour over a gentle fire. Meanwhile, melt in a saucepan a piece of butter, about an ounce, if the dish be for one person, and add to it a dessert-spoonful of flour, mixing well. Pour on this gently a breakfast-cup full of milk; add a little salt and pepper, and when these are well mingled, cook the whole in a saucepan for about ten minutes. Now, if the macaroni be well done, take it out of the water, put it in a saucepan, and cover it with the dressing you have prepared, then cook it, without boiling, another ten minutes. When ready for serving, beat up one or two eggs in a cup with a very little hot milk, and pour them over the macaroni in the dish. And here permit me a word on the subject of macaroni. Properly dressed, it is an invaluable and most delicious food (to be aware *how* delicious, one must have eaten it, as I have done, in Italy), but unskilfully and ignorantly prepared, it is insipid, and even worse. "Never," says the sapient author of "Dinners and Dishes," "never ask me to back a bill for a man who has given me a macaroni pudding." Macaroni is not meant for puddings; it is alien to sugar and jam, but it is bosom friends with pepper, salt, butter, and Parmesan, and as a savoury dish dressed with grated cheese and cream, or tomatoes, it is ambrosia. Very few invalids can digest cheese, so in cooking macaroni for them you must get as near only to the right thing as circumstances will permit. In case, however, the physician in attendance should think cheese may safely be given, I append a recipe for macaroni *à l'Italienne*,

which, if followed with skill and care, will produce most satisfactory results.

Put some macaroni into eight times it weight of boiling water. A pound and a pint being equivalent quantities there should be four pints of boiling water for half a pound of the paste. Let it simmer with a little pepper and salt for twenty minutes—more or less, according to the quality of the macaroni, particularly its freshness. Test a piece between the fingers to know when it is done enough. Then drain it from the water in a colander, and put it back in the stewpan with as much hot milk as it can absorb in a further simmering of a minute or two. Half a pound of macaroni will take about half a pint of milk. In the meantime have ready (for half a pound of macaroni) four or five ounces of grated cheese, half Parmesan, half Gruyère, and an ounce of butter. Shake half the cheese into the macaroni, and toss it well, then mix in the ounce of butter; finally shake in the remainder of the cheese, and when all is well mixed by tossing, and it begins to get stringy, serve it. Some people like the cook to be liberal with the pepper-pot in this dish.

Macaroni au Gratin is prepared in the same way. It is then heaped up on a dish which will stand the fire. It is sprinkled with grated cheese and with fine bread raspings; it is bedewed with melted butter; it is put into the oven till it becomes of a golden hue; and if the oven is not hot enough, it may be finished with the salamander.

You can vary this dish by sprinkling over it tomato-sauce or stewed tomatoes. Remember that in cooking for invalids, you must be especially on your guard against adulterated and stale foods. Be sure that the butter, milk and cream used are all thoroughly *pure* and un-

mixed with manufactured fats, oils or thickening matter, besides being irreproachably sweet and fresh both to taste and smell.

When macaroni, vermicelli, or other pastes are added to broth or consommé, they should be first boiled in water for five minutes, otherwise they will be apt to dim the transparency of the soup. An extremely dainty and appetizing broth for invalids is *Consommé aux œufs Pochés.* To make it, put into a saucepan equal quantities of sliced carrots and onions, a sprinkling of chopped shalots and garlic, with a little very finely cut parsley, celery and bay-leaf, some powdered basil, thyme, nutmeg, sugar, and a good-sized piece of butter. Put the whole upon a brisk fire, and turn it about with a wooden spoon continually, that the vegetables may not stick to the bottom of the saucepan. When they are well browned, add to them two or three pints of water and about one of good dry white wine. If you wish to have consommé de poisson, add some fish-stock and boil; if not, proceed, without the stock, to boil, and simmer afterwards, for a couple of hours. Pass the consommé through a tammy, and clarify it with the albumen of two or three eggs. When this consommé is well made, it ought to be of a deep russet colour. *Julienne maigre* is made with carrots, turnips, leeks, onions, and the white stalk of celery, chopped up and put into a saucepan with butter and a little sugar. These ingredients are then placed over a moderate fire until well browned, turning meantime, as before, in preparing the consommé. They are then moistened with vegetable broth, added gradually, to the amount of about two or three pints. Then let the whole boil, and immediately it bubbles, remove it to the side of the fire and let it simmer for two hours, adding more broth, if necessary, little by little. Skim, strain, and serve

It is of the utmost importance, if a *clear* julienne is required, that the saucepan should be moved away to the side of the stove directly the first boiling occurs. Of course, the *proportions* in these recipes may be varied at will, as taste or requirement may indicate. Poached eggs may be served with either of these soups. The eggs should be lightly poached in water; then, just as the soup is served, one should be deftly slipped into the bowl or soup-plate placed before the invalid, care being taken not to break the egg in so doing. Toast should be eaten as before with this preparation.

I must not prolong this epistle, and cannot therefore continue to descant on the enticing subject of recipes. Modern literature is rich in culinary manuals, from which you may cull many a pleasant suggestion for varying the monotony of sick room dietaries. In passing, I commend particularly to your notice two cheap little books, one, in French, entitled "Le Livre des Soupes et des Potages," by Jules Gouffé, a well-known Parisian "chef;" the other, a little English manual called "Maigre Cookery," which contains many excellent formulas suitable for invalids, and costs only eighteenpence. Before concluding this subject, I have two general admonitions to give. First, remember the value of savoury herbs. Always have at hand bunches of dried thyme, marjoram, basil, mint, sage, *et hoc genus omne.* In the good old days every lady had her herb-garden, and in every kitchen were to be seen, suspended from the cross-beam of the ceiling, rows of sweet-scented bundles drying for winter use. Some of these simples were used for culinary purposes, others had medicinal uses, and right wholesome and good they were. Now, all the flavouring is done by means of extracts and essences bought at the grocer's, and all the physic comes in phials from the chemist's. Alas for

the wise old times! There is hardly any dish that you may not make palatable and attractive by the skilful employment of herbs and the addition of a few vegetable stimulants. Savoury broth, far nicer and more wholesome than ordinary *bouillon*, can be made, for instance, by some such formula as this:—Take a quart of good clear lentil stock, prepared in the usual way by gentle boiling for several hours; slice three or four onions, one small carrot, and six or eight button mushrooms. To these add a small bunch of herbs, a little celery seed, a few peppercorns and cloves, an ounce of butter, and a bay-leaf; let all simmer till the ingredients are quite soft, then season with salt and sugar, strain through a tammy, and serve. You may vary this recipe at pleasure, according to taste or necessity.

Next, bear in mind that invalids like surprises in the way of food. Do not give every day the same thing. Change the *menu* as often as possible, and let all your dishes look and smell invitingly, and be served in small quantities, so that the patient may not be repelled by the sight of more than he can eat. Be sure that everything required is placed on the tray before it is taken into his presence; otherwise servants will have to run for pepper, salt, bread, or what not necessary as adjuncts to the meal, and meantime the broth will get cold, and your patient, not unnaturally, will lose both his temper and his appetite. And now, good-bye. Set your ingenuity to work, and, on the strength of these hints, multiply tasty and nutritious dishes for your sick clients.

XXX.

ON CLIMATE.—I.

My dear Edith,—There have been many fashions in medicine, and every epoch has had its peculiar *panacea*. At one time, now, happily, remote, the leech and the lancet were employed indiscriminately alike in surgical and in medical cases, and it was, no doubt, in consequence of this all-prevailing custom that medical practitioners acquired the popular name of "leech," still preserved in the books of writers on medicine and philosophy from the sixteenth to the eighteenth century. Then followed the age of blisters, cupping, drugging with mercury, and over-heating with heavy bed coverings, during which period it was customary to exclude air from the sick room by every possible device, to wrap the unhappy patient from head to foot in thick blankets, and to draw damask curtains round his bed, thus enhancing the danger of febrile disturbance when it did not yet exist, and aggravating the mischief when fever had already declared itself. In those days, therefore, small-pox, scarlatina, and other zymotic diseases attained their deadliest percentage, and, where they spared the life, ruined the constitution. Anon appeared another medical fashion—happily of short duration—the method of treatment by alcohol. Wine and brandy were administered in large quantities, and patients were sometimes kept for weeks in a condition of semi-intoxication, under the

impression that alcoholic stimulus imparted strength to the system. All these various practices, and many others almost as deplorable, have now dropped out of medical fashion, and have given way to treatment by sounder and saner methods for which we are indebted to the discovery and definition of the science of hygiene. Hygiene has taught us the necessity of ventilation, of bathing, of cleanliness—personal, domestic, and public—and the very important part played in therapeutics by diet and climate. I have already, in former letters, discussed at some length the question of diet, and have spoken about the various regimens appropriate to different conditions of ill-health and convalescence, besides giving details in regard to cookery for invalids. I have likewise had occasion to write about the necessity of fresh air, sanitation, and exercise, but, as yet, I have not touched on the subject of *climate* in relation to health and to the treatment of disease, so I propose that we should consider it in the present letter.

Of course it is a matter of common knowledge an experience that invalids are constantly benefited, or the reverse, by change of residence. Physicians are in the habit of sending their well-to-do patients with weak chests to winter in the south of France or elsewhere; while invalids wanting "tone" are despatched to bracing sea-side or moorland resorts; asthmatic or rheumatic subjects to inland towns or alpine levels, and so forth. It will be interesting to devote a few sheets of letter-paper to a study of the scientific *rationale* of this method of treatment, which is now very generally superseding the old-fashioned employment of drugs in maladies of hereditary and constitutional character. The principal factors of climate are quality of air and quality of soil. Quality of air depends on altitude and position

with regard to the sea or inland waters, and to the propinquity of forests, heaths, and large towns. After height above the sea, the most important consideration is distance from the sea. Sea-air contains a large proportion of moisture and holds various salts in suspension, with, occasionally, small quantities of ozone, a substance which, by combining very readily with organic effluvia, possesses the property of purifying the air. The proximity of the sea exercises also an equalising influence over the temperature of the land, because during the day the land absorbs heat more quickly than the sea, and by night it cools more rapidly, the sea meanwhile remaining almost as warm as in the daytime. Consequently the breeze blows landward in the daytime, because the hotter the air over the coast the higher it rises, allowing the cooler and heavier air to rush inland from the sea; and at night-time the breeze blows seaward, because the air over the coast is now colder than that over the water, so that the current of the atmosphere is reversed. By these constant exchanges between land and sea the climate of places on the coast is kept at a more equable temperature than that of others, and as, moreover, the air of seaside towns is thus being continually purified and agitated, their advantage over towns where the air is comparatively stagnant is very great indeed.

Altitude affects climate in a different but not less important manner. The higher the altitude of any place the lower its temperature, and also the dryer the air, because the air of mountainous regions is much less dense than that of low-lying levels, and consequently it does not so readily absorb sun-heat, while the absence of vegetation on lofty ground renders the atmosphere less moist. Forest lands attract humidity, and cause abundant rain-

falls, while, inversely, places devoid of vegetation, and at the same time low in altitude, such as deserts, are dryer and hotter than any others in the world. Marshes, lakes, and rivers affect the climate of places in their vicinity by the evaporation which always goes on from their surface, especially in warm weather. Riverside and lakeside towns are usually humid, and often foggy, because the channels of rivers, and the beds of lakes, as a rule, occupy valleys and gorges whence the heavy, mist-laden air cannot get away, so that it remains more or less stagnant, and often becomes loaded with smoke and organic material. Cold places, such as those situated on Alpine heights, are also usually dryer than low-lying places for another reason, which is that cold air dissolves much less water than hot air, and its point of saturation is represented by a much lower figure. For instance, air at the temperature of 64 deg. Fahr. will hold in solution $6\frac{1}{2}$ grains of moisture per cubic foot, and when that quantity is reached, it is said to be saturated; but air at 96 deg. will hold as much as $17\frac{1}{2}$ grains of water in each cubic foot, and air at freezing point (32 deg. Fahr.) only 2 grains of water for the same measure. Therefore cold atmospheres, other things being equal, are far less moist than hot atmospheres, and hot climates are much more rainy than temperate or cold climates. More rain falls at the equator than anywhere else.

You may prove the fact that cold air does not hold in solution so much moisture as warm air, by putting a piece of ice into a wineglass. Dew will very soon be deposited outside the glass, because the surrounding warm air has been lowered in temperature by the cold atmosphere emanating from the glass, and, as this lowering of the temperature changes the saturation point of the air, the moisture it was before capable of holding in solution

is deposited under the form of dew. Now, as this country is an island, and as its atmosphere, even in the Midland counties, is continually charged with a considerable quantity of humidity due to the proximity of the sea on all sides, its cold season is inevitably a time of fog, and hence of clammy and penetrating moisture, because the coldness of the air, while preventing the damp from being maintained in solution, condenses it, and holds it in suspension as mist or fog. On the other hand, Continental countries, however cold, enjoy a much clearer atmosphere on account of their immunity from humidity, and as cold dry air is always much less nipping and keen than cold moist air, the result is, of course, that Continental cold is a great deal pleasanter than insular cold. When cold air is also dry air, as in Switzerland and other places removed from contiguity to large expanses of water, its effect on the skin is not felt as "chilliness," because it does not tend, as does moist air, to repress evaporation from the cuticle and respiratory surfaces of the body. We lose more heat and less moisture in a damp atmosphere than in a dry one, and therefore in this country diseases caused by chill and insufficient glandular action—as rheumatism, asthma, bronchitis, kidney complaint, and congestion or inflammation of the lungs—are very common in winter time; and in order to escape them delicate people are sent by their medical advisers to such resorts as the Upper Engadine, where the air, although far colder than in England, is dry and clear. There is, moreover, another reason why mountains are beneficial resorts to many delicate persons, especially to those who have not strong lungs. High altitudes have a rarer atmosphere than low-lying regions, and every inspiration of the pulmonary organs in hilly places draws into the chest a less weight

of air than in lower altitudes. Consequently, in order to obtain air enough for the needs of the body, mountaineers breathe more quickly than people living in the lowlands, and obtain thereby more lung exercise. You may gather from this fact that although a sojourn in Alpine districts constitutes an excellent method of treating weak-chested patients by expanding their lung capacity, giving tone and stamina to their mucous surfaces, and helping to invigorate their muscular and circulatory systems, that it is not likely to prove so beneficial whenever the lung complaint is caused or complicated by disease of the heart, for in such a case the heart's action would also be considerably quickened, and this is not desirable if the organ in question be enfeebled, liable to palpitation, fatty, or dilated.

As for soils, they may be roughly divided into pervious and impervious. The most pervious soils consist of gravel and sand, the least pervious of clay and marl. Pervious soils, being loose and porous, do not retain damp; they permit rain to penetrate through them easily, and therefore are favourable to dryness, while thick, heavy soils hold water as in a basin, and thus hinder drainage, and give rise to ground mist, miasma, and constant humidity. Rocky soils, such as those common in hilly regions, are usually dry, because the water is not absorbed in them, but flows off their surface into natural basins at lower levels. Springs are thus formed in mountainous places, the rain remaining unabsorbed, and running underground along the rock until an outlet is reached, whence it gushes forth as a spring.

Of all the various climates we have been considering, that of the high and dry altitudes is, on the whole, the most healthful and valuable in cases of disease. Consumption, anæmia, rheumatism, neuralgia, asthma, and

malaria, in all their many forms, are frequently amenable to the climate of high altitudes when all other curative means fail to affect them. The rarefied air of Alpine regions stimulates the lungs, and exercises the bronchial functions in a degree impossible in heavy and stagnant atmospheres, while the dryness of mountain air is eminently favourable to patients afflicted with any of the disorders named. Again, sea air is extremely beneficial in cases of convalescence from zymotic complaints, such as measles, scarlatina, or small-pox, on account of the constant interchange of sea and land air, and the presence of the purifying agent, ozone, in the atmosphere. Ozone is oxygen in an electric state, and it is therefore often found in comparatively large quantities in breezes after thunderstorms. It has valuable disinfectant properties, which have been tested and demonstrated chemically as well as physiologically. Sea air is also useful in cases of wasting diseases, rickets, and scrofula, because certain valuable salts—bromides, iodides, chlorides, and others—usually spoken of collectively as "saline particles," are suspended or dissolved in such air. But generally, when scrofula and strumous disease take the form of skin eruption, it is better to seek mountain than sea air, for chloride of sodium, or sea-salt, is not remedial in such cases. Cholera and kindred complaints have never yet been known to visit very high altitudes; they confine themselves as a rule to low levels, and especially to moist and riverside places. Cholera was born on the brink of the Ganges, and it is always observed to haunt particularly the vicinity of inland waters. Typhoid fevers exhibit the same tendency. Relaxing and warm climates are suitable in some cases of constitutional heart complaint, kidney disease, and certain forms of nervous malady. Formerly it used to be thought that con-

sumptive patients were benefited by sojourn in such temperatures; but most physicians are now agreed that high and dry climates, such as that of the Engadine, Davos Platz, and other Alpine stations, are best suited to invalids suffering from tubercle uncomplicated by other disease, and in its earlier stages. Such cases, too, are frequently greatly modified, and sometimes cured by residence in or near pine forests, where the atmosphere is laden with the aroma of the trees, and the soil loose and rocky.

In most constitutional complaints the nature of the soil is a highly important consideration. Thick, sodden clay soils are extremely pernicious to persons suffering with rheumatic, neuralgic, or lung diseases, and in such cases very little good can be effected by medical treatment so long as the patient lives over ground of this nature. Intermittent fevers, and all disorders of the ague type also imperatively require the removal of their victim to a dry sandy soil as the first condition of cure.

Moist atmospheres favour the development of obesity, dry atmospheres of leanness; because less evaporation occurs from the bodily tissues in humid atmospheres, and liquid is a principal factor in the production of corpulence. *Ergo*,—if you want to grow fat, my dear Edith, you should reside in a moist, warm climate.

XXXI.

ON CLIMATE.—II.

My dear Edith,—I am glad to hear that my letter on climate interested you so much, and am quite willing, since you wish it, to continue the subject. You ask me to explain to you in what manner the air of cities differs from country air, and why I said that the propinquity of large towns must be taken into consideration in gauging the quality of any given atmosphere.

Other things being equal, the air in and near great centres of human habitation is warmer and drier, but less pure than that of the open country. The presence of trees, or of other vegetation, always diminishes the heating effect of the solar rays on the soil, which, if denuded of herbage and foliage, as in towns, becomes very warm during daytime, and reflects heat with considerable intensity. Moreover, the soil of towns is usually well drained, and hence, again, far drier than that of grassy and uninhabited places. Moisture, as I pointed out in my first letter, is attracted and encouraged by foliage, so that forests are always more or less humid. As for the purity of the atmosphere, it is easy to understand that in this respect there is an enormous difference between cities and country districts. The air of cities is loaded with organic and mineral particles, arising from exhalations of living bodies, the diffusion of suspended dust, and the presence of smoke, consisting chiefly of

vapour of sulphur and of unconsumed carbon. Dr. Angus Smith has computed that in a large town like Manchester the air breathed by every inhabitant in the space of ten hours contains thirty-seven millions of organic spores besides suspended mineral particles. I remember being, when a student, greatly astonished at a post-mortem examination held on a man who had spent all his life in the East-end of London, by finding the entire surface of both his lungs encrusted with a complete pall of fine black dust, which, being scraped away gently with the thumb-nail, exposed the healthy tissue of the organs beneath it. In my innocence I had at first supposed this unsightly sable covering to indicate a diseased state of the lungs; but it was only carbon dust deposited inside the chest by the bronchial apparatus, and resulting from the fact that this man had for some fifty years or so continuously inhaled a smoky and soot-laden atmosphere! The air of towns, as Professor Tyndall has shown in his many interesting microscopic and other investigations, is filled with floating infinitesimal fragments of every imaginable kind of material. Dust of iron from wheels and machinery, dust of wheat and other grain from bakeries, dust of cotton, linen, velvet, fur, wool, and other fabrics from the clothes of the citizens, dust of wood and stone from the pavement of the roads, particles of manure, vegetable and animal germs, atoms of food of all sorts, and other products too various to enumerate, jostle each other in the atmosphere of London and all cities. As for other constituents of town air, it contains very little ozone, and a great deal, comparatively, of carbonic acid gas. One of the most mischievous social tendencies of the present time is that which leads the inhabitants of civilised countries to mass themselves together in crowded areas, forsaking the villages and

hamlets in which our ancestors spent such long and healthy lives. The continual inhalation of vitiated air, loaded with the products of decomposition, and depleted of vitalising elements, occasions much of the lassitude, nervous irritability, craving for alcohol and stimulants of all kinds, sleeplessness, pallor, anæmia, and other complaints common to residents in great towns. The atmosphere of such places is *burnt* atmosphere, deprived of all invigorating and naturally stimulant qualities, and hence the need so often felt by those who constantly breathe it for artificial stimulants and hot drinks after meals. Smoky air, moreover, irritates mechanically the mucous membranes of the mouth and throat, setting up dryness, tickling, hoarseness and congestion; and all these symptoms contribute also to create thirst and feverishness, thus inducing improper habits of diet and abnormal desire for strong beverages. Drunkenness is a commoner vice among the poor of cities than it is with country peasants.

You will gather from these remarks that I do not think city air, on the whole, very healthful. It is, nevertheless, distinctly beneficial in some seasons to some cases, as, for instance, in spring and summer to persons who suffer from hay asthma, chronic catarrh, rheumatism, and certain forms of hysteria. But even such patients as these ought not to live continuously in towns, and care should be taken in every instance to select dry, well-drained, and high situations for residence. As for country air, that of inland districts, sheltered from cold sweeping winds by the proximity of forests or mountain ranges, is best suited for convalescents from acute diseases, fevers, or general inflammatory maladies. For such cases mountain or sea air would be too exciting, and might, very likely, retard instead of hastening recovery, by pre-

maturely stimulating the activity of the circulation, or by arousing an appetite for food incompatible with the capacity of an enfeebled digestive system. "*Chi va piano va sano,*" says the Italian proverb, the wisdom of which is nowise better exemplified than in application to invalids of the type just mentioned. But where repose and gradual healing by soothing processes are not necessary, where muscular debility and organic exhaustion do not make rest imperative, the bracing influence of high altitudes or of sea-breezes may be extremely beneficial. Mental depression, irritability of disposition, impaired appetite; deterioration by prolonged sojourn in cities, harassing cares or brain pressure; as well as dyspepsia, atony of the digestive organs, and many types of nervous complaint,—all find their most potent remedy in Alpine resorts. For renovation of the nervous system, and especially of the brain, fatigued with labour or long-continued ill-health, there is nothing comparable to mountain air. It is also, in the opinion of many physicians, especially valuable in cases of incipient and even advanced consumption, chronic asthma, and bronchial affections. "A certain morbid sensitiveness to cold, or rather to 'taking cold,' is," says Dr. Burney Yeo, "often greatly lessened by a residence in the bracing, rarefied air of elevated localities." As a rule, young and middle-aged persons benefit more from a visit to mountain "stations" than elderly people, probably because the latter are less able to bear the changeful and stimulating atmosphere of high altitudes than those whose circulatory and respiratory organs are capable of being roused to more vigorous activity.

After surgical operations, or accidents, or in convalescence following grave chronic disorders, sea air is far better than either inland or Alpine air. In my former

letter I pointed out the beneficent effect of sea air in cases of recent zymotic complaints, rickets, wasting disease, and some forms of scrofula, so that I need not again insist upon this fact or its causes; but I may add to what I then said on the subject that aged persons who do not suffer from rheumatism are usually benefited by sea air on account of its even temperature, which braces, without trying, the animal forces. Of course, however, you must remember that I am now speaking very generally, for seaside places differ enormously in regard to character. All the west and south coasts of England, for instance, possess a far warmer, moister, and more relaxing climate than those on our eastern shores. Torquay, Bournemouth, and Hastings differ widely in temperature from Cromer, Scarborough, or Whitby, and invalids with very sensitive throats or chests, who derive benefit from frequenting the former places, would suffer proportionately from the bracing winds of the latter. But I must not go into particulars, for I am not writing a guide-book for invalids, but only a friendly letter to an inquiring "gossip."

INDEX.

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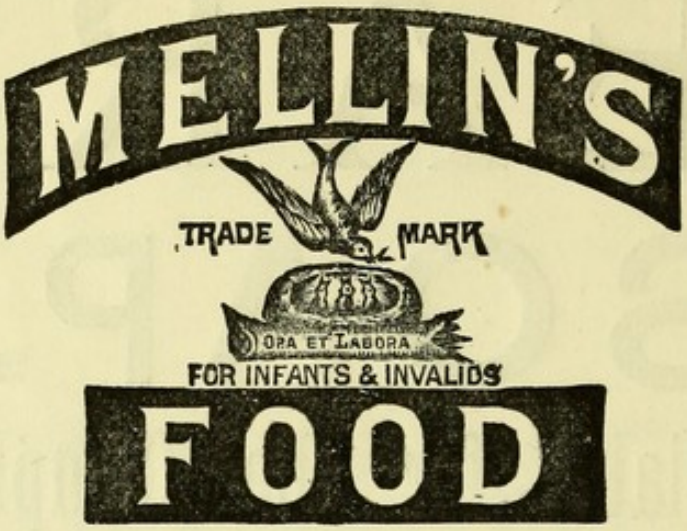

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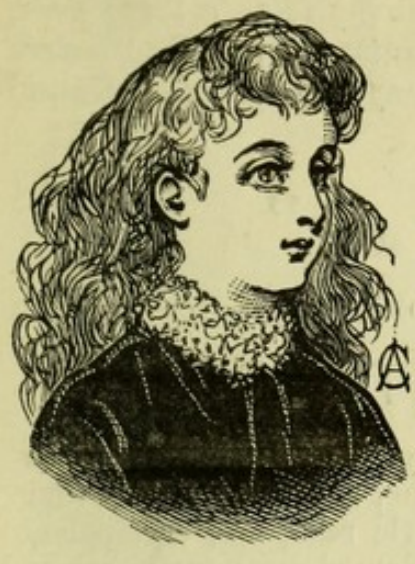

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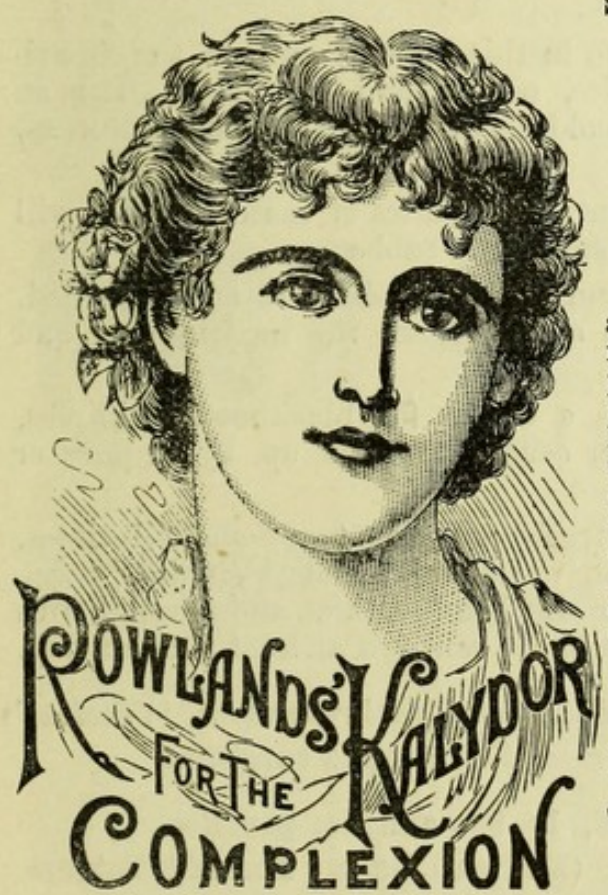

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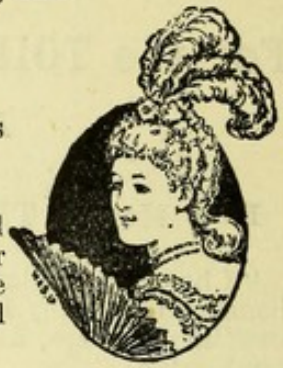

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