

glasses because their sight is becoming "long" or "old," a considerable number also require them because they are "short-sighted." In this condition glasses are necessary for distinct vision at a distance only. Such persons say, and rightly, that they can see perfectly well the smallest objects when close to their eyes. They are, therefore, not a little surprised to learn that, even for reading and writing, glasses in their case are almost always necessary. If, therefore, the reader should be short-sighted, the chances are that he will require spectacles both for distant and for near objects. In the first case he will require them in order to enable him to see things clearly, in the second in order to see them *at a sufficient distance off*. This distinction is a very important one, and one which is moreover too frequently lost sight of. If a short-sighted person can see clearly at about ten or twelve inches distance from his eye he will scarcely require glasses for close work, otherwise he should certainly wear them in order to prevent his short-sightedness becoming worse. The best practical rule to give to such persons in the choice of glasses is to choose the weakest possible with which they can see. There is an almost irresistible temptation to select always much stronger ones than are really required, because they make objects apparently sharper and clearer than the weaker glasses. Strong spectacles are, however, a source of considerable danger in the condition of short-sightedness. The risk is lest they should strain and irritate the eye and so produce internal changes, which eventually may result in total loss of sight. No absolute rules can be laid down for the choice of spectacles for short sight, as has been done for "long" or "old" sight. Short sight bears no relation to an individual's age, and may, moreover,

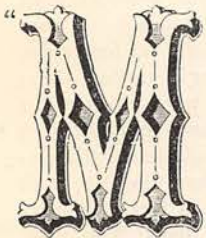
"progress" from year to year. It cannot, therefore, be corrected so satisfactorily or safely by an individual himself as presbyopia can. Little more, therefore, need be said about it than to recommend the weakest possible glasses for use at a distance, and for reading or other fine work, glasses such as will insure comfortable vision of the smallest objects at not less than twelve inches. One pair of spectacles will in some cases fulfil both these indications, while in others two pairs will be required.

Both short-sighted and long-sighted persons may test whether the lenses they are about to use are optically correct or not by simply placing two of the same numbers, but of opposite properties—that is, either convex or concave—together, and observing whether they completely neutralise each other. Thus No. 10 convex should neutralise No. 10 concave, so that in looking through both placed one on the top of the other the effect should be simply that of looking through an ordinary piece of glass.

Of scarcely less importance than the lenses is the frame which holds them. Spectacle-frames are made of many different materials, but for most persons the choice may be said to lie practically between two, viz., steel and gold. The former has the advantage of cheapness and strength, but the disadvantage of rapidly rusting if exposed to sea-air, or when worn by rheumatic persons. The latter is very durable and does not rust or corrode. The chief objection to it is its high price, against which, however, may be set the fact that when worn out or broken the material will be always valuable, and will partly cover the expense of providing new ones. When, therefore, gold can be afforded it is certainly the best material of which to make spectacle-frames.

MILK AS A CURATIVE AGENT

BY A FAMILY DOCTOR.



MILK as a Medicine" was the title first thought of for this paper, and it must be confessed the words sound better than those I have chosen; they have, at all events, the magic power of alliteration to recommend them. But, on the other hand, there are many to whom the very word "medicine"

brings disagreeable associations, though it ought to be remembered that a medicine is not necessarily a drug, albeit a drug ought always to be a medicine. A medicine—if I may be allowed to quote from the first dictionary I can lay my hands upon, without the trouble of getting out of my chair—is "any substance which has the property of curing or mitigating disease." In this sense milk is assuredly a medicine, just as many of our vegetables are which, whether through innate taste, or depending upon our knowledge of their properties, we partake of as health preservatives.

Regarded as a food for the young, milk contains all the elements necessary for existence; the child and the invalid are in many things very much on a par, and milk almost alone, when judiciously administered and in cases where it can be well borne, oftentimes enables a delicate patient to tide over an evil time, and to support his system until stronger food, suitable for the requirements of health, can be easily assimilated.

The milk most commonly used medicinally is that of the cow, although the milk of several other animals is pressed, and rightly too, into the service of the invalid. Let us see what pure milk contains. Of course the proportions of the several ingredients that enter into its composition vary somewhat in different specimens of even pure milk, but the following table of Regnault gives as close an approximation to a perfect analysis as we require for our present purpose. He takes the milk of the cow, the ass, and the goat, and analyses them as follows:—

	<i>Cow.</i>	<i>Ass.</i>	<i>Goat.</i>
Water	87.4	90.5	82.0
Oil <i>i.e.</i> , butter... ..	4.0	1.4	4.5
Lactine and soluble salts	5.0	6.4	4.5
Casein, albumen, and fixed salts	3.6	1.7	9.0
	100.0	100.0	100.0

We may now say a word or two about some of the ingredients of milk.

The *oil or butter*. Fat in some form or other must be taken to support life by keeping up the animal heat; sugar or starch, the farinaceous portion of the food, is also heat-sustaining. Heat is power, power means strength; wherever, therefore, there is a lowering of the animal heat, there must be a diminution of strength, and consequently health retrogression. Fat or butter possesses twice the heat-generating properties of sugar or starch. The value of milk, then, as an article of diet to the delicate or the invalid must be great. There are many people, moreover, who, although they are not as a rule looked upon as invalids, nevertheless suffer from feelings of chilliness and cold, often without apparent cause. It may be simply coldness of the feet and hands, but at times the chest and stomach partake of the same uncomfortable feeling. Rich good milk, if it can be assimilated, is a great boon to such as these. Indeed, it is often the best medicine they can take, better far than the so-called cordials they so often fly to.

The *lactine* is the sugary or sweet portion of the milk. Like other saccharine substances, lactine or milk-sugar is a heat-producer, and acts in several other ways for good on the animal system.

The *salts* or mineral matter contained in milk are all necessary for the maintenance of the body in a state of health, and for assisting to build up its framework and make up for loss or waste in nervous and muscular tissue. They consist chiefly of the phosphates of lime, soda, magnesia, and potash, with the chloride of sodium (*i.e.*, common salt).

The *casein* that milk contains, and of which the curd is principally formed, with the *albumen*, is a very important portion of its composition, being chiefly concerned in the animal economy with the repair of tissue and in its construction, and generally in keeping up the strength. In other words, it is the nitrogenous portion of the milk, which gives staying power to the man in health, and enables the delicate invalid to take exercise without feeling fatigued. The muscles and nerves are to the human body what the wires and other conducting apparatus are to electrical machines—not the essential perhaps, but things, nevertheless, that cannot well be dispensed with, in this world at all events. Casein is the least easily digested portion of the milk. Cheese, we all know probably from experience, is difficult of digestion, unless indeed one is working all day out of doors.

A few words about the purity of milk may not here be thrown away. Most people think that country milk is certain to be good and pure; we shall see about that presently, but let me bring the city article before the reader's notice first and foremost. The impurities or adulterations of this are more likely to

be intentional. The most common addition to milk is water; this water is introduced for commercial reasons—to make it go farther, in fact. Even if the water so mixed with the milk was always pure itself, it would be bad enough, but unfortunately it is not. It is sad indeed to reflect that our supply of milk should not only be deprived of its nutritious qualities, but even rendered in many cases prejudicial to the health; but such is the fact. One would think that the addition of water to milk was easily discoverable, even by the naked eye, owing to the bluish appearance given to it, or by means of the tell-tale hydrometer. This is not so; the adulteration of milk has come to be a fine art, if not a science, and the bluish colour caused by the aqueous administration is hidden by the addition of colouring matter, its specific gravity restored by other ingredients, and even its flavour given back to it, or something that passes for it. In fact, the article of commerce called London milk is, in too many instances, a very much "doctored" article indeed. But is country milk much better? It certainly is, and yet I am sorry to say the sinful science of adulteration is like some giant crab—London may represent the body of the beast, but it sends its claws all over the country. But there are impurities in country milk which are purely accidental. The servants of the most honest dairyman are apt to be entirely oblivious of the fact that cleanliness is akin to godliness, hence milk-pans that are far from fresh, and dairy utensils of all kinds are seldom sufficiently rinsed, far less scoured, to say nothing of carelessness connected with the kind of water which the cows may drink. Cows are far from particular as to the quality of their potations when really thirsty—although they prefer clean soft water to anything else—and hence many cases of typhoid fever have been due to partaking of that much bepraised article, country milk.

If I had to choose milk for a delicate invalid, there are many things I should want to know, which in all probability the "honest" dairyman would deem impertinent: let me couch my queries in the politest language I am master of. I would want to know how the cow was housed and fed, and even bedded, and how often she was milked; and I would like also to see her ladyship, so that I might guess about her age and condition. But here is something that the dairyman has nothing to do with. He may deliver the milk at the door into the hands of your immaculate maid, both rich and pure and sweet, and not half an hour drawn from the cow. The milkman may look like a duke in disguise, both the pail and the half-pint measure may seem made of burnished silver, and the former may apparently have hinges of gold; but having received it, where does your handmaiden place it? In scullery or larder? Surely not. If she does so, hint to her that milk has the power to absorb obnoxious gases and effluvia from the air around it, and do not yourself forget that the purest butter that ever was made, may become tainted and poisoned in one short hour by objectionable surroundings.

Comes now the question of the digestibility of milk. A glance at the table of the composition of cow's,

ass's, and goat's milk will naturally convey the impression that that of the goat is the richest. This is so, but it is on that account the more difficult of assimilation. It cannot, therefore, be recommended for the very delicate, but it is a grand adjunct to the diet of those who are just beginning to regain strength after long severe illnesses. A residence at the seaside to induce a healthy appetite, and a diet consisting largely of goat's milk, would restore many a convalescent far more speedily to health without the aid of drugs than anything I know of.

A course of goat's milk may often be taken with advantage in the autumn by those who suffer much from cold during the winter months, but who do not care to take cod-liver oil. The extract of malt would go well with it as a tonic adjunct. The milk ought to be taken on the principle of little and often, not drunk wholesale.

Again referring to the table, it will be seen that ass's milk contains a larger proportion of water, more lactine, and less oil and casein. This is the reason it is so easily assimilated, and is so often prescribed by the physician for patients who have delicate digestions. It is possible that it may be of a somewhat too laxative nature for some, but this is easily corrected.

Cow's milk most invalids can take. It is often an advantage to give it in conjunction with a little aerated water; and in cases where it has a tendency to turn sour or disagree with the stomach, it should be mixed with a little lime-water. It should be remembered, however, that lime-water must not be taken for any length of time without intermission, or evil re-

sults may follow. Cream, if taken fresh in the morning, and if it can be well borne—which it usually can—is an excellent tonic and restorative. It should be taken with breakfast, and the more fresh it is, and the more good and pure the milk from which it has been taken, the better will be the result. The cream of goat's milk is probably better than even that of the cow.

Skim milk is very nutritious, but, of course, being deprived of a large proportion of cream, it is not calculated to sustain the animal heat so well.

Butter-milk: it is not every invalid who can take this, but it has, nevertheless, much to recommend it as a cooling nutritive summer drink. I might almost claim for it tonic properties; however, there is no doubt that, taken an hour or two before any of the ordinary meals of the day, when a feeling of emptiness and fatigue are experienced, it is of great service. The delicate should have it as fresh as possible.

Milk, talking physiologically, is demulcent, and therefore of great service in many cases of cough and lung irritation, as well as in dyspepsia. I need hardly say a word about the virtue of milk as a medicine for those suffering from consumption. In this case it ought to be drunk warm from the cow, it is certain then to be unadulterated. Too much of it can hardly be taken so long as it agrees.

In all kinds of internal irritabilities, even in dysentery itself, milk is invaluable, and the emollient effects of *milk warm from the cow* are well marked in cases of chronic or winter cough.

I merely mention milk and rum in order to have an opportunity of saying that in no case should such a dangerous mixture be taken.

THE VIOLIN FOR GIRLS.



HE violin has, whether for worse or better reasons, until quite recently, rarely been put into the hands of girls in this country. The certainty that it is an extremely difficult instrument to master, and the prejudice that it is an ungraceful one to play, have combined to restrict its study to the other sex. Both reasons disappear entirely if fairly faced. The violin must be taken up in early youth, if any real success with it is to be achieved; and no one begrudges to girls ample

time for the practice of music; whereas parents and tutors alike are very jealous of allowing boys to spend upon the study of music hours which are claimed by Greek, Latin, mathematics, and the various branches of education which they are expected to pursue.

If, therefore, there are difficulties to surmount which demand hard, regular practice, and time for it, girls have many more opportunities for encountering them. Between their enforced studies, and the passion for

games and field sports which, even if somewhat excessive in this country, we should be the last to say a word to discourage, boys have not much leisure for the pursuit of music; and if success is to be gained in school, and subsequently at the University, no time can be spared for it out of school hours. With girls the case is far otherwise. After the time devoted to studies and exercise, there is always time for practice, and no girl enjoying a liberal education, properly superintended, need find any difficulty in securing two hours a day for the study of music. If we take the results which any ordinary experience of society enables us to verify, they fully bear us out. There are many girls under two-and-twenty in this country who have arrived at a high degree of excellence as pianoforte-players; but the number of young men—we speak, of course, of amateurs—who play the violin even tolerably at the same age is very small indeed. The best general test of a violin-player is whether he can lead a quartet of average difficulty, and we never yet met an English amateur of two-and-twenty who could do this with even decent success. We are not making this a subject for blame,