Spring Water.

There is a common notion that spring water is pretty much the same everywhere, that its constitution varies much less than that of water from other sources. It is true that in general spring water is the best drinking water. But there are very wide differences in the quality of different springs, and especially in the quantity and quality of the various mineral substances which they contain. The main distinction is into hard and soft waters. The hard waters are those which contain lime and magnesian salts, and consequently will not form a lather with soap until after the soap has decomposed these salts. The "soap test" for hardness consists in employing a solution of soap of a given strength, and ascertaining how much of this must be added to a given quantity of water to form a lather which will last a given time. Hard water may be softened to a considerable extent by boiling it—in some cases an economical expedient. There are hard waters that require seventeen times as much soap to make a lather as soft water requires. The soap thus wasted in using hard water costs the community an enormous sum annually.

Soft water is comparatively free from lime, and from the magnesian salts. The effects of its habitual use on health and growth are still an unsettled question. Of French recruits, says Galton, a larger number from soft than from hard water districts were rejected on examination. But this proves nothing, for the rejection might have been due to other physiological causes. And, "on the other hand, Highlanders are a stalwart race, and the water they have is mostly soft water." In the United States, ever since measurements have been made, the tallest American-born soldiers have come from Kentucky. Then follow, in the order of average statures, the men of Kansas, Minnesota, Missouri, California, Nevada, Indiana and Virginia. In no other States does the average stature run over five feet eight inches. In Kentucky, it may be added, the ailment of stone in the bladder is frequent, presumably on account of the prevalence of magnesian salts in the drinking water.

The terms "hard water" and "soft water" need a little more careful definition than they commonly receive. There are many kinds of hard waters. One kind is that which flows from strata that contain much magnesia. This tends in some cases to produce goitre, a disease of which the chief cause is indeed a very different one, namely, insufficient exposure to sunlight, as among the inhabitants of that rather gloomy tract of the river Rhone, the Valais, just above Lake Geneva. Still the ailment has been traced, in parts of France and England (in the latter it is called "Derbyshire neck"), to the use of hard magnesian waters.

This, happily, is in this country not a danger to health worth mentioning. In general the hard waters that come from the chalk and limestone formations are the best; those from clay soil, from surface soils, and from loose sand, or from soft sandstones, are apt to be impurer. Water that flows from granite rock is generally both soft and pure. But some of the most famous and efficient mineral springs, as those of Carlsbad and Marienbad, come from the granite, and are highly charged with constituents of the granite in solution.

Springs are seldom abundant enough to form the direct supply of a city; it would be better for us if they were. The impurities of city drinking water are generally contracted in the streams, ponds, and reservoirs through which they must pass before reaching the consumer. But there are fortunate exceptions to this rule. The city of Vienna has a new supply from the Kaiserbrunn and the Sixtenquelle, fifty-eight miles from the capital. Besancon, in Eastern France, is thus entirely supplied, and from one of the most beautiful springs that I have ever seen—the Source d' Acier. It pours out of a mountain side 780 feet above sea-level, and sixty-seven feet above the ancient city of Besancon, which it now supplies for the second time in the course of seventeen hundred years. When the Emperor Marcus Aurelius, in the second century, occupied this province, he constructed an aqueduct, which still exists. Its tight brick vaulting is still as perfect in many parts of its six miles' course as when it led the waters of Arces ("The Arches," so called from the brick arches over which the canal was partly carried) to the Roman citizens of Vesontio.

About forty years ago the people of Besancon built the modern aqueduct over nearly the same course as that of Marcus Aurelius. The spring, or subterranean river rather, breaks at a single bound from the limestone rock, deep in an ancient wood. Its leap is like that of the "mighty fountain" in Coleridge's "Cubla Khan." But the torrent is intercepted by a dam, which turns into the mouth of the aqueduct a supply sufficient for sixty thousand people. Caught up by the engineering works the moment it leaves the rock, and before any contamination from air or soil can occur, the water reaches the city as cool and limpid as when it springs from the mountain-side. The living spring actually flows in the old town. It is almost at an unvarying temperature, and the only fault that is found with it is that during the long-continued rains it is slightly turbid. The surplus water rushes down the hill-side at Arcier in a beautiful cascade, and pours into the river Eoubs, the *Dubis* of the Roman wine and water drinkers' time.—*Titus Munson Coan, in Harper's Weekly.*

Raising Colts.

We are asked by a correspondent what kind of foods a colt should have, and whether or not plenty of food will make a better horse than scant food. There is no difference whatever in the principle of feeding young animals. All of them, whether they are children, colts, pigs, calves or lambs, need food of nearly the same character. They are born into the world with perfect but diminutive systems. If we expect to fully develope them into a grown creature, we must feed such foods as will furnish material to increase the size of the bones, and that will build up the muscular system. Unless we do feed such foods we might just about as well feed nothing; for the young animal, if wholly deprived of them, could make no growth and could not retain health. There is, of course, in all foods something of the bone and muscle forming elements, and when fat forming foods are fed almost exclusively to growing animals, those elements are the only elements that keep life in them at all. But if so fed they are loosing all the time, and it is a process of gradual decay. In the case of swine that are often so largely fed from the start in this way, this is as true as it would be with the colt, but they are kept such a comparatively short time that the ill effects are not as conspicuous as they would be with the colt. If we take a colt and feed it corn exclusively we shall have an imperfectly developed horse, and one whose system is full of disease. We again repeat, in this connection, that nine-tenths of the diseases of animals can be directly traced to this process of starving the system by neglecting to supply it with the materials that it needs to repair the waste of bone and muscle, or in case of young animals the materials necessary to make growth of bone and muscle. This, too, will answer the question of our correspondent, whether or not plenty of feed will make a better horse. All young and growing animals are great feeders. It is from what they eat that they must get every particle of growth of bone and muscle, and as they are developing rapidly, they consume a great deal; and they ought to have all of the proper kinds of food that they can digest and assimilate. They do not need fat beyond a limited extent, and they can get all that they do need from what are termed the flesh forming foods. The horse never should be highly fattened, and certainly not when a colt. It is not fat but strength that we want in the horse, and we cannot have that unless we develop its bone and muscles. It is the worst of fallacies to stint a colt in its feed, but that does not mean that he shall be stuffed. An animal may be hurt by too much feeding as well as a child. He should have just enough and no more, and of the right kind of food. What is enough? Of course no rule can be laid down for that. The judgment of the feeder must settle that point with the particular colt that he is feeding. As to the proper food, that must be, as already stated, largely of the bone and muscle forming character. What are these? Oats, barley, rye, millet, meal, peas, oil meal, good hay, wheat bran, roots and grass. It is always well to furnish animals, and especially young animals, with a change of diet, but precisely what we shall feed in the above list will depend upon circumstances, as which we may have, price, etc. It must never be forgotten that all animals need a reasonable amount of bulk in their food. The digestive functions can be maintained in vigor only in this way.

And we desire to call attention here again to the necessity of that very cheap necessary in properly developing the young animal—pure air. Deprive the colt or other young creature of a free supply of oxygen, and we have impeded the entire work of the animal economy. The blood is not oxidized, and that means that it becomes incapable of performing its functions, and that the case, indigestion and all the other ills of animal flesh may, and many of them will likely follow. But it is not the very easiest thing in the world to furnish pure air in the right way. We may open the stable door and get a supply, although that may not be perfect because of the inadequate means of exit for the foul air. But even if such means were perfect, a great draft of air through a stable door is not the thing. Nor is it the thing to establish a means of ventilation by means of a steady draft. Proper ventilation is the admission of pure air in such a way as that the animal shall not feel a draft, and a free exit for the impure air. The former should come in at the bottom of the stable, and the latter should go out at the top of the stable. It is not much trouble to establish ventilation, and it is worth a great deal of money to any owner of stock.—*Western Rural.*

Children at Table.

Brillat Savarin, in his book entitled "Physiologie du Gout," says what, rendered into English, reads thus: "A fine dinner without old cheese is like a pretty woman who lacks one eye." Confessing a weakness for old cheese, I should change the simile thus: A fine dinner without children at table is like the same woman lacking *both* eyes. English children, as a rule, are not allowed at table with their parents before they are twelve years old. In this country, however, as soon as the little tot can feed himself, he is generally admitted—sometimes to receive careful training from judicious parents, and sometimes to train injudicious parents after his own sweet will. To my mind a parent loses much that would add to the cheer and beauty of family life, as well as a golden opportunity for training and culture, by keeping the children at a separate table. Let the little fellow come with you, and try and avoid two extremes—that of allowing him to monopolize the conversation, or of training him in such a manner that the table will be to him only a place where he may, under the most absolute restraint, satisfy his hunger. Bring everything that you have gathered during the day of cheer and brightness to your table. If you have read anything of special interest, or made a pleasant visit, or have a sweet surprise for any one, mention it there.

If the little one asks a question (and he certainly will) take time to answer him (if you can), always teaching him to wait until others have finished speaking. But let him feel that he has a place there. Do not silence him, for a child is often more sensitive than you know, and one who is continually silenced and made to feel that he had no definite place will rarely feel at ease as he grows older, or develop into a conversationalist when you may greatly desire it. If you see him with flushed cheeks and flashing eyes, under the inspiration of an audience, trying to tell of something that interests him, do not crush him by telling him that "little children should be seen and not heard." Who was the author of that outrageous remark? Was it Benjamin Franklin?

Discuss the current events of the day, and let the child feel that the table is a place where he may learn something. But above all things, put far from you, for the time being, anything that tends to annoy. Let not the jar of the domestic machinery—should there be any—be heard at table. Even should you be compelled to reprove, do it so carefully that, if possible, none but the offender shall hear, leaving all severity of discipline, or even moral reflections concerning his conduct, until you have him alone.

All this table training will require a deal of thought and care; call it trouble, if you will, but the labor of training children—or of one child, even—in any direction is no sinecure. Judicious direction will do more than constant repression. They do not care particularly to be "seen," but they do want to be "heard" sometimes. Therefore, let them be heard, teaching them, out of a large patience, good behavior at table; and the eyes that see them and the ears that hear them shall be blessed. —*Mrs. Bradford, in the Congregationalist.*

Fashion Fancies.

Muslins are revived for evening wear. These are fine and generally piqued in floral designs. Tournures and bustles of all kinds are surely going out of fashion this spring. A curved steel is placed in the skirt instead, or perhaps a couple of these steels: Silks for spring wear are shown in floral patterns. There are also some very fine checks displayed. Inch stripes of black and gold are also to be found, these being used for plaited skirts as last year. Satins will be much worn. Gray walking suits of one color look remarkably well. Great discretion should be exercised in the matter of trimming with any color; slight touches of red or blue, the way of linings, are quite permissible however. We are threatened with the English walking hat of several years since. Dotted veils are not nearly as popular as those made of plain Brussels net. This net is so very fine that it can hardly be seen. It comes in brown, black, red, dark blue and green. Long overskirts will be fashionable on all spring gowns. The majority of them will be without trimming. Tight-fitting polonaises, made of cloth and trimmed with bands of feathers down the front, will be much worn. Flowers will trim all the new spring hats, to the exclusion of feathers. Gold-braid princesse bonnets are much worn just now. They have strings of broad maroon ribbon velvet.—*American Queen.*

—A "cow man" is the owner of a herd, while a "cow boy" is one who is employed to drive and take care of the herd.—*Chicago Herald.*

About Orange Trees.

The Agricultural Department at Washington has a good-sized hot-house devoted entirely to the cultivation of orange and lemon trees. There is not much use for any one to apply for an orange or lemon tree who does not live in the orange-growing belt. This experimental nursery is maintained for the benefit of the practical growers of citrus fruits, most of whom live in California and Florida. If every person who wants an orange tree for a hot-house ornament was to be gratified, the department would have to greatly enlarge its facilities for growing plants. The object is to introduce the best varieties of oranges that grow in any part of the world into the Florida and California orchards.

Running down the middle of the hot-house there is a bed of earth, probably four feet wide, in which the big orange trees are growing. There may be twenty or more of these trees, and most of them are fifteen or twenty years old. Constant pruning and cutting has prevented them from growing to the usual size, and the trunk of the largest is not more than two inches and a half in diameter. These trees represent the best varieties of oranges, and once a year they bear fruit, which attests the excellence of the family of which each one belongs. The Scriptural maxim, "Every tree is known by its fruit," is the law of this experimental garden, and such as do not bear good fruit are speedily torn up by the roots. In the summer the roof is taken from the hot-house, and nature is allowed to have its own way. As soon as frost is threatened the glass roof is put back in its place, and if any branches have pushed their way above the ridgepole they are cut off, so that no tree ever gets to be more than fourteen feet high. Orange trees in Florida grow to a height of forty feet in twenty-five years. One tree has been known to produce a crop of 10,000 oranges in a single season. The price of oranges at the orchards is about one cent apiece, so that this tree brought its owner $100 a year. Not many trees are so prolific, but an orange grove within easy reach of railroad transportation is a very lucrative piece of property.

Although the orange is more apt to reproduce from the seed the distinctive qualities of the variety to which it belongs than any other fruit, sometimes it does not; hence the department does not risk the growing of good oranges from the seed. All the little trees are grafts from the big trees in the hot-house. Seeds are put in pots, and when the plant that springs therefrom gets large enough a shoot from the big tree is grafted into it. When it arrives at bearing age it produces the fruit of the big tree. These grafted plants grow very slowly in pots, and at three years of age they are nothing but switches. When planted out in suitable soil they grow much more rapidly, but at best the orange tree is of very slow growth.

It is this circumstance that wrecks the prospects of so many people who go to Florida expecting to make money from an orange orchard. After they plant their orchard they must wait about twelve years before it comes into good bearing. It is not surprising that those who are past middle life get tired waiting for a return for their investment. Aged people should only plant orange groves for their children. The trees are hardy and live a long time. It is said that there are orange trees still producing fruit that are over 500 years old. This may be an exaggeration. A youth, however, whose parents have planted an orange orchard for him is likely to continue to eat of the fruit through his whole life, even if it be prolonged through the four score years allotted to man.

There is an impression in the North that Florida produces a variety of oranges which differs from the oranges of other countries. When people ask for Florida oranges, and are given oranges that were grown in that State, they are satisfied, and if the fruit turns out to be sour or woody in its structure they presume that it has been pulled before it was ripe, and make no complaint about it. Now, as a matter of fact, there are almost as many varieties of oranges as of apples, and pretty nearly all the varieties are grown in Florida. Some are delicious and some are very bad. The Spaniards brought the orange to Florida more than 350 years ago, and probably for 300 years nothing was done to improve the stock. There is a great tendency in all fruits when grown from the seed to run back into wildness, and the Florida orange suffered greatly from this deterioration. The birds carried the seeds about, and the wild, sour oranges that grow in the swamps are the legitimate descendants of the good oranges of a couple of centuries ago. A good many sour and bitter oranges of the old stock are still sent to the North, and find purchasers because they come from Florida. When Mr. William Saunders, Superintendent of Gardens and Grounds of the Agricultural Department, was on the west coast of Florida, last winter a year, he was told at Tampa that the very best oranges grew at Manitee. When the boat arrived at Manitee a man came on board with a basket of oranges, and Mr. Saunders bought a dozen. After tasting four or five, and finding them bitter and sour, he threw them all into the water. The huckster had evidently got hold of a very bad variety of the native orange. The best oranges that grow in Florida have been introduced there since the war.

The Agricultural Department gets orange trees from all the orange-growing countries in the world, and propagates those that seem to bear good fruit. The best orange tree in the hot-house came from Bahia, Brazil. The fruit is medium-sized, thin-skinned, of golden color, and delicious flavor. Many hundred shoots from this tree have been grafted into plants and sent to California and Florida, and from these whole orchards have been produced by budding and grafting. In California particularly this orange has obtained the highest reputation, and it has taken the premium at all the fairs where citrus fruits have been exhibited. Another very good orange is the St. Michael's, a variety that is highly prized in London. It seems to grow better in Florida than in the tropics. The Florida winter gives the rest that all fruit trees ought to have. By far the larger number of the orange trees and plants in the collection of the Agricultural Department were obtained in Italy.

The orange takes nearly the whole year to mature. The trees blossom in February, and the pulling of the fruit begins in November and continues through December. The fruit does not drop readily, and will remain on the branches during the whole winter. It ought to be taken off, however, when it is fully ripe. The trees in the hot-house of the Agricultural Department observe about the same order that they do in Florida. They were in blossom in February and the oranges are now as large as the marbles which boys call "commoneys." Oranges that grow in hot-houses are as good or even better than those that grow in the open orchard, provided the temperature is properly managed. They must not have too much moisture when ripening. The same may be said of grapes and pineapples.—*Washington National Republican.*

—Artesian wells in New York City, show that the East River underflows the island. In the deep wells lately sunk the water ebbs and flows with the tide.—*N. Y. Sun.*

—Mildew may be removed by dipping the stained parts into buttermilk, and putting them in the sun.—*Cleveland Leader.*

SCIENCE AND INDUSTRY.

—Two Western inventors have recently obtained patents for the use of sawdust instead of sand in plastering compositions.

—An Ontario village is lighted with gas made from sawdust, said to be equal to coal gas and free from sulphur.—*Montreal Witness.*

—A man at Enterprise, Miss., has taken out a patent for an invention for hitching a horse to a buggy without any harness except the collar.

—Glass is becoming fashionable as a protection to oil paintings, and as a safeguard against moths and damp the backs of valuable pictures are covered with rubber cloth.—*Boston Globe.*

—Dr. Wilson, in the *Medical News*, claims to have obtained much better results from the use of the internal membrane of hens' eggs for healing large surfaces in wounds than from either human or rabbit skin.

—Two cases have been reported to an English medical society in which the electro-magnet has been successfully used for removing pieces of iron from the eye. Without the magnet it is thought that the sight of the injured eye must have been lost in each case.

—An exchange says that "by means of an ingenious instrument invented by Dr. Lombard, of New York, it is ascertained that a woman's body is warmer than that of a man by three-fourths of a degree, and sometimes as high as one-half of a degree, while in no instance has the warmth of a male's body been found to be greater than that of a female."

—The time required for the formation of mineral veins appears to be much less than has been generally supposed. A ditch which was filled up two years ago with common clay containing iron, has just been opened again by Dr. Fleitman, who has found, to his great surprise, that the clay has become white and is permeated by racks filled with compact iron pyrites, these veins being from a twenty-fifth to a sixth of an inch in thickness.—*N. Y. Mail.*

—A model of a novel canal-boat has been placed on exhibition by a Cleveland inventor. The boat is to be propelled by a screw, so geared that it can be made to turn by horses or mules traveling in a circle in their stable in the boat. The inventor claims that abundant power can be had in this manner, and that a large saving can be effected, particularly in river towing bills and by the reduction of help; that it would be cheaper than the present method of towing even though no better time were made, but he is confident that four or five miles an hour can be accomplished.—*Cleveland Leader.*

—Hitherto it has puzzled eminent surgeons to account for sudden death caused by apparently inadequate wounds in the heart, such as those made by the prick, without penetration even, of a needle. Herr Schmey, a student of the Physiological Institute, Berlin, has, however, discovered that when a needle pricks a certain small spot on the lower border of the upper third of the septum cordis, quite instantaneously the movements of the heart are arrested and forever set motionless in death.

—If any one doubts that the Americans are an inventive people, let him examine the Patent Office reports, which few, however, will do, as they would rather accept the newspaper statements as veritable than wade through a library of shelved and dusty volumes. The patents granted by the Government reach to the enormous number of nearly 300,000. There have been no less than 6,680 patents obtained on the plow alone, about as many on the harvester, and over 8,000 on stoves and furnaces. It sounds singular, in this connection, to hear that 869 separate and distinct ways have been discovered of making a corset.—*Washington Star.*

PITH AND POINT.

—Do not wait till the iron is hot, but make it hot by striking.—*Edwards.*

—Disparage and deprecate no one; an insect has feeling and an atom a shadow.—*Fuller.*

—"Yes," sighed a broken-down man who had given his signature to oblige a friend, "the most foolish thing I ever did in my life was to learn to write my own name.—*N. Y. Commercial Advertiser.*

—A correspondent writes to a country paper that by using phosphate he has had the best corn he ever raised. We have never tried phosphate, but we have found a pair of tight boots to be a very effective corn raiser.—*Buffalo Express.*

—Dumley came into the dining-room and, casting a sweeping glance over the table, jammed down into his chair, and muttered under his breath, "Liver again, of course. We've had liver every morning for two weeks." "What's the matter, Mr. Dumley?" asked the landlady; aren't you feeling well this morning?" "No, madam," he replied, shortly; "I am suffering with liver complaint.—*Philadelphia Call.*

—Old Mr. L., one of the best of men, is an invalid, but always maintains, despite his sufferings, a cheerful exterior. "How do you feel to-day, sir?" queried a friend, recently. "I'm feeling very poorly, thank God," he answered, cheerfully. "Why is that?" asked the friend in astonishment. "You are suffering, and yet you thank God." "Anybody can thank God when he is feeling well," was the reply.—*Boston Globe.*

—What is my opinion of prudence? It is the head on a nail which prevents it being driven too far in.....What is my opinion of affectation? It is a cheap chromo "touched up" to look like an oil painting.....What is my opinion of braggadocio? It is a linen collar with the starch washed out of it. .....What is my opinion of intemperance? It is a fire we kindle in ourselves without a dollar's worth of insurance on the premises.—*Merchant Traveler.*

—An elder in one of the churches was last week making up a club of subscribers for a Sunday-school paper. In his rounds he called at a house where he found a little girl of seven at home. He explained his errand to her, hoping to get her name to the list, and she replied: "Well, I'll ask mother, and I'm quite sure she'll give me the money, for she says we must patronize the peddlers who come along, or they will be driven to steal and rob." He hasn't gone back to see if she succeeded.—*Detroit Free Press.*

—"Bridget," said Mrs. Wigglesworth to the new kitchen lady from Messina, "you may lay the table." "Is thy servant a hen, that he should do this thing?" queried Mr. Wigglesworth, facetiously, as the door closed. "Why not?" returned his wife, for once coming to time, "She is a Biddy." And Mr. Wigglesworth said "H'm!" and went out to see if his sweet peas were coming up, and found that with the assistance of the neighbor's hens they were.—*Rockland Courier-Gazette.*

—At a recent auction sale in Washington of the effects of a colored woman, who was for years the housekeeper for Thaddeus Stevens, a snuff-box, presented to the great commoner by the Territory of Colorado, was purchased by Mr. Thomas Donaldson for $31. The box bears the following inscription: "To Hon. Thaddeus Stevens, from Colorado Territory, through H. P. Bennet, delegate. When Old Thad takes snuff, Colorado will sneeze. Pike's Peak gold."—*Washington Star.*

—Rochester, N. Y., has a man seven feet eleven inches in height.