

FAMOUS FOUNTAINS.

The Poor Mechanic Who Invented the Marly Water-Works at Versailles.

There is a curious history about these Marly water-works. When Louis XIV. was laying out the gardens at Versailles he discovered that the springs and ponds included in the grounds were insufficient for supplying the fountains of the park with water. His engineers studied over the matter, and finally it was determined on the construction of a machine to bring it from the Seine by means of an aqueduct. The plan accepted out of the several presented was one by the Chevalier de Ville, an engineer connected with the works in progress at Versailles, but the real author of the Marly machine, considered at the time one of the wonders of the world, and the scientific chef d'œuvre of Louis XIV., was a poor carpenter named Renquin Sualem. Shut up in a little cottage at Bongival he patiently elaborated the diagrams of the complicated ensemble of beams, wheels, and dams, for which Chevalier de Ville got all the credit, and he submitted to this injustice rather than lose his only means of support, the small salary paid him as a subordinate to the Chevalier de Ville. The machine was intended to force the water of the Seine to the top of the aqueduct. This was accomplished by 14 wheels, each 39 feet in diameter, working 64 pumps, which carried the water to a first reservoir dug in the side of the hill, whence 79 other pumps carried it to a second reservoir, and from there it was forced by 78 pumps to the reservoir from which it flowed into the aqueduct. In all there were 221 pumps to raise the water to a height of 564 feet from the surface of the stream and to carry it a distance somewhat less than two miles. The inauguration took place in 1682, in the presence of Louis XIV. and his court, who were stationed on the top of the great tower of the aqueduct. At a signal given by the King the fourteen wheels commenced turning and in a few minutes the water was flowing into the granite basin at his feet. The Chevalier was overwhelmed with praise, and rewards in the shape of titles, honors and money were freely bestowed on him, but poor Sualem got nothing and soon afterward died in poverty. Since then his name has been given to the quay on the river nearest to the machine he created, a tardy and sterile reputation. The machine cost 9,000,000 livres, a sum which would nowadays be equivalent to \$15,000,000. Its capacity was six thousand cubic yards of water per day; but this was found to be an insufficient quantity to realize the project of Louis XIV., which was to have the fountains playing all the time. Then another scheme was devised, that of turning the little river Eure into a reservoir, and of utilizing its water for the purpose. Work was commenced and pushed forward actively. The erection of an aqueduct, the remains of which still exist, near the village of Mariteon, was undertaken, canals were dug and more than thirty thousand soldiers labored on the enterprise. The sickness caused by the turning over of such masses of earth was so fatal among the troops that wagon loads of dead bodies were carried away from the hospitals by night, and as secretly as possible, in order not to cause a panic among those who were well enough to work. The project was persisted in for several years, and only abandoned in 1688, when the war required the presence of soldiers elsewhere. According to Louis XIV. was not sorry to cause to abandon an uncostly of which far estimates. It is a well-known fact that the King was so much spent at Versailles that he was obliged to relate to the maturation of the Marly machine has been, and at the same time of water it could supply diminished. At the present century the supply dropped to 300 cubic yards of water per day. The machinery was repaired and improved several times, but the results were still unsatisfactory. In 1857 it was entirely rebuilt, and two years later the Mansart aqueduct was constructed, which supplied the grounds at Versailles with from 10,000 to 18,000 cubic yards of water per day. This instead of being a masked fortress of rafters and wheels which occupied a surface of 900 square yards and deafened the neighborhood with its noise, and which it took Sualem seven years to build, was a machine, simple in its parts, working with accuracy and noiselessly. From the small brick house that sheltered the machine, the water is pumped directly into an aqueduct that carries it to a reservoir with a capacity of 850,000 cubic yards and from the reservoir it is distributed through three mains to Marly, Versailles and St. Cloud.—Paris Cor. N. O. Peayune.

The Voracious Spider.

A spider, as shown by an estimate by means of actually weighing it and then confining it in a cage, ate four times its weight for breakfast, nearly nine times its weight for dinner, thirteen times its weight for supper, finishing up with an ounce, and at 8 o'clock p. m., when he was released, ran off in search of food. At this rate a man weighing one hundred and sixty pounds would require the whole of a fat steer for breakfast, the dose repeated with the addition of a half dozen well-fattened sheep and four hogs for supper and then as a lunch before going to his club banquet he would indulge in about four barrels of fresh fish.—N. Y. Star.

A couple of colored children, boy and girl, near Foliciana, La., recently became engaged in a quarrel, and at a certain stage the young man threatened to shoot the girl if she did not stop talking. The girl wanted the last word, as usual, whereupon the boy pulled a revolver and shot her in the eye, killing her instantly. The boy is under arrest.—N. O. Times.

FRENCH PEASANTRY.

Beneficial Results of the Division of France into Small Agricultural Properties.

M. Baudrillard declares that the division of land in France into small agricultural properties is in accordance with the natural configuration of the country, and is, accordingly, normal and healthful. Many of the products which add enormously to the wealth of France, such as the vine, the olive, and a multitude of fruit trees, need manual labor in their cultivation, as do horticulture and market-gardening. In all these lines of production the division of property into small estates tends directly to larger returns. Before the French revolution there were 4,000,000 land owners. Ten years ago this number had doubled, and although it may have been reduced somewhat since, in consequence of the long agricultural depression, it is probably not far from that figure at the present time. Half the landed estates in France pay less than five francs in taxes, but these plots of ground yield a gross produce of double and triple the calculated return. When the evil of excessive division becomes too great, it constantly tends to correct itself by the action of self-interest, and there is now going on in many parts of France a movement toward the reconsolidation of estates. The average yield of these small properties is far in excess of the average yield of larger estates. In the matter of stock-raising the small farms have decidedly the advantage as regards banded cattle, and the large farms as regards sheep. Since 1821 the value of small properties has trebled and quadrupled, while that of large properties had only doubled.

The industry and thrift induced by universal land-holding have practically banished agricultural pauperism from France. There are a few wandering beggars and a few persons in each community depending upon aid, but provincial France is self-supporting. The peasants are less deeply in debt than formerly; they borrow less and their savings constantly accumulate. The rise in the price of agricultural labor has made the lives of this class of laborers much more tolerable than formerly, while the small proprietors have steadily improved their condition. White bread has superseded largely the rye bread of former days, and in the more prosperous provinces meat is frequently seen on tables from which it was once almost entirely absent. The style of living is, of course, of the plainest description, but it is comfortable and adequate, and the families are independent and enjoy the humble pleasures which spring from these conditions. The great majority of cottages are decently furnished, with respectable accommodations, and the housekeeping is often admirably conducted as regards cleanliness and system.—Christian Union.

A NEW DISINFECTANT.

How Coffee May be Used as a Temporary Dressing of Wounds.

Years ago some studious Germans made the observation, the correctness of which he endeavored, and to a great extent also succeeded, to establish by statistical data, that coffee, if taken in the morning on an empty stomach, acted as a preventive against infectious and mainly acute epidemic diseases. He quoted a great number of cases where individuals accustomed to drink a cup of hot coffee for breakfast had either escaped an epidemic of typhoid, then ravaging the part of Germany in which the observer lived, or if attacked by the disease, contracted it in a much milder form; while all those who died from the disease had not been in the habit of taking coffee in the morning. This was a good number of years ago, at a time when in many parts of Germany coffee was still either an unknown or so costly a beverage as to be looked upon as a luxury that only the rich could enjoy. We have forgotten the name of the physician, but remember that the medical profession did not take kindly to the idea of coffee being a disinfectant, or as they then said, an anti-zymotic, and those who could not deny the correctness of the observation itself, ascribed the apparent immunity to other causes, many to the hot water with which the coffee was prepared.

That the physician, however, has not been so wrong has been recently proved. During the last meeting of the Prussian army surgeons in Berlin, Medical Director Oppler reported that after extensive investigations, which he related in detail, he had discovered that we possess in coffee an antiseptic remedy of no mean value, but one which could well serve for the purposes of a first dressing of a wound in a battle. If employed at once it totally prevented suppuration, but if used after pus has already accumulated in the wound it leads to the formation of a scab, beneath which the wound heals with complete aseptis. The coffee should be employed in the form of powder as it might entail the loss of valuable time to have to grind first the roasted coffee bean, which in Prussia every soldier is bound to carry about him. Dr. Oppler recommends the use of coffee tablets, which have recently been discovered by a Hamburg firm and which answers the purpose admirably well, as it is only necessary to rub these tablets a little, when they at once assume a powder form.—Medical and Surgical Reporter.

—Mr. Payne, who was the bugler boy for General Sully in the Indian campaign of 1862, lately visited a battle-ground near Cranden, in Spink County, D. T. He says two hundred Indians were killed there and all buried in one grave by the soldiers. Skulls are now seen lying on the ground turned up by the plow. It was not known before by the settlers whether Indians or whites were buried there. Mr. Payne also locates the spot not far away, on the east side of the James river, where twenty-nine soldiers were buried. It is probable the attention of the War Department will be called to the matter, and proper care given their burial-place.—Chicago Times.

SOUTH PACIFIC SAVAGES.

The Wars, Dress, Rites and Social Habits of the South Sea Islanders.

The inhabitants of the South Pacific coast islands are in many respects strange human beings, and not the least singular fact in connection with them is their manner and custom of life, both in the domestic circle and when battling with other tribes. Some six thousand miles from this city is the Marshall group of islands, the inhabitants of which are conspicuous for their warlike propensities, great size and gigantic strength, together with other traits of strongly original character, and regarding which little or nothing is known in the civilized world. A few days ago the three-masted schooner John Hancock returned from a trading cruise to the Gilbe and Marshall groups, and the master of the vessel, Captain William Chipman, secured a valuable collection of curiosities in the shape of war-clubs, spears, boat-paddles, shells, etc. With Captain Chipman, as a passenger, was a young man, S. F. Gray, of this city, who, during his visit to the islands, gained much interesting information concerning the islands and their inhabitants.

The natives are large and powerful. They are not unlike the New Zealanders, being of a dark, copper-colored complexion. In addition to a natural inclination for warfare they are very treacherous and in some portions of the group are cannibals. Their main occupation is like that of the Indian, looting and picking coconuts, which are prepared and shipped to this country with considerable profit. When not engaged in harvesting the coconut crop or loading about on the ocean in a dug-out canoe, the Marshall Islander puts in his time carving grotesque figures on canoe paddles and in whittling out murderous-looking war-clubs, spears, arrows and other similar weapons. In carving they display great ingenuity and while the figures shown on the paddles are not exactly pretty, they are very intricate and are not unlike similar work done in China.

The figures on the paddle represent idols and, according to the Islander's belief, if upon his boat paddle there is carved the figure of an idol he can safely navigate anywhere. In this connection it may be well to state that these Islanders are the boldest and most skillful canoe navigators in the Pacific. They make voyages extending over many months, trusting to Providence, or rather rain, to supply them with fresh water. They navigate by means of a small chart composed of small sticks tied together and representing the position of the various islands as regards the point of departure.

In warfare their weapons consist of clubs, spears and arrows, all of which they use with the greatest skill and accuracy. The clubs are made of iron-wood and are very heavy. They are of various shapes, the most murderous being the gnarled root of the ironwood tree. The other clubs are of lighter character. The arrows are made of light bamboo, the points being of iron-wood. The spears are also made out of the same kind of timber and run down to a fine point, which is tipped with a poisonous preparation. The feather end is fantastic and gaudy, a regular bouquet of feathers plucked from the rarest birds being used and blended together with a strict regard for colors.

The Islanders, particularly in the vicinity of New Ireland, have no particular love for the whites, and it is not an infrequent occurrence to find some settler lying in front of his door dead. It is the work of some native, who, having become offended at the white man, has lain in wait and killed him.

The natives do not tolerate polygamy, and after marriage the women are famous for their fidelity. A sort of a slave traffic exists throughout the islands, though, and single women can be purchased for servants for a mere trifle. Clothing is a thing unknown in most of the islands. In and about New Britain and Ireland, however, the breech-cloth is used.—San Francisco Examiner.

CLEAN NEWSPAPERS.

The Rapidly Growing Feeling Against Sensational and Unreliable Sheets.

There is a growing feeling in healthy communities against journals which make it their special object to minister to a perverted taste by seeking out and serving up in a seductive form disgusting and licentious revelations. There is good reason to believe that the clean newspaper is more highly prized to-day than it was four or five years ago. It is also safe to say that, as people in all ranks of life, who protect their own, at least, from contamination, become more conscious of the pernicious influence of a certain class of journals, which are called enterprising because they are ambitious to serve up dirty scandals, they will be careful to see that the journals they permit to be read in the family circle are the class that never forget the proprieties of life. Already men and women of refinement and healthy morals have had their attention called to the pernicious influence of bad literature, and have made commendable efforts to counteract the same, by causing sound literature to be published and sold at popular prices. These efforts are working a silent but sure revolution. The best authors are more generally read to-day than at any previous day. The sickly sentimental story paper and the wild ranger and pirate story books are slowly but surely yielding the field to worthier claimants. In praise of the decent newspaper it may be said that where it has a place in the family, and has been read for years by young as well as old, it has developed such healthy tone and such discriminating taste, that the life-nature of the slums has no admirers. Fortunately, the number of such families is increasing in the land, and as they increase, the journal that devotes itself to sickening revelations of immorality will be compelled to find its supporters solely among those classes who practice vice and crime, or are ambitious to learn to follow such ways.—Printers' Circular.

SUGAR-MAKING.

How the Saccharine Matter is Extracted From Cane or Roots.

The process of "sugar-making," in its essentials, is a simple enough matter of cookery. The first care of the producer is to get all the sugar possible out of the cane or grass or root, either by squeezing out the juice or washing out the sugar; the sugar-maple saves the sugar-maker this trouble, delivering the sap ready for the boiler. The juice is then cleaned of its impurities, as coffee is cleared by the white of an egg, or water is filtered through charcoal; it is then boiled, to evaporate as much of the water as possible, and crystallize the solid sugar; it is then cooled, and the molasses drained off, leaving the soft dark sugars, in which each crystal has its thin coating of molasses, or dried by a centrifugal machine as clothes are dried in the whirling drier, whence the water flies out, or further clarified and left to crystallize in white loaves, which are sawed or crushed or ground or powdered into the several varieties of fine white sugar. Most of these earlier processes are performed on the plantation, but in many cases they are repeated and the sugar carried through the final process in the great refineries. "Refining" is, in fact, little more than a finer repetition of the processes of "making," and to do these simple things on a great scale and in the best way is the sole purpose of those enormous bee-hives of industry.

The sugar-maker's first aim is to get from the cane as much of its percentage of juice as it can be induced to give up. The juice is enclosed in little cells of lignose, or woody fibre, which make the other tenth of the cane's weight. There are three ways of extracting the juice—by crushing, by soaking out the sugar by the process of "diffusion," or by a combination of crushing and maceration in water. Crushing or grinding the cane is a process in use from the earliest times, as is seen in the primitive sugar mills of the East, which consist of the hollowed stump of a tree, within which is a grinding pestle worked by oxen treading their round, driven from the arm of the bar by one man, while another feeds in pieces of cane, one by one, and takes out the crushed remains. A mill almost as primitive as this is still in use in Arkansas.

The sugar-house on a great plantation is a large, high building, the center of the farm, to which roads or tramways lead in all directions. As a load of cane comes up, it is fed upon an endless belt or railway, which carries it up slowly to the crushing-mill, an affair of simple construction but of enormous power. The crushers are great rollers of cast-iron, in pairs or triplets, set one on top, and sometimes more, working at a pressure of from fifty to eighty pounds to the square inch, and so arranged as to give slightly before any extraordinary strain. There are all sorts of opinions as to whether it is better to crush once only or to repeat the operation with increasing pressures. The juice flows from the crushers in one direction; the residual cane, now known as "baggas," is carried off in another by an endless belt, to be used either for dressing for the cane fields or as fuel in the heating processes which the juice is next to undergo. One of the great improvements in modern sugar-making has been the development of furnaces which get most of their fuel from the baggas.—R. R. Bowker, in Harper's Magazine.

ORIENTAL LIFE.

Ceremonies Observed at a Fashionable Turkish Dining Party.

In the Oriental household there are no fixed hours, no fixed habits, no regular sitting-rooms, dining-rooms, bedrooms. The divan, which serves as a seat or lounging place during the day, serves as a couch at night. Each person eats when disposed to. Sweetmeats, sherbets and coffee, particularly the last, are partaken of at intervals all day long. When a regular meal is served, it is usually an "occasion" of some sort, and it is served in courses. The greater the "occasion," the larger the number of courses. One dish composes the course. It is served on a large circular platter of copper or brass or silver or gold, according to the wealth of the host. The platter is placed on a circular table of the same circumference as the platter, and about a couple of feet high. Around this table the guests place themselves either on cushions or—in order to be accurate I must be in-elegant—squatting. There are neither knives, forks nor plates, nothing but the huge platter, which entirely covers the table; and from this huge dish each person helps himself with the first two fingers of the right hand. Never under any circumstances must food be touched with the left hand; to do so would be to defile it. A meal served in this way consists of any where from six to twenty-six courses. Some of them are very nice, many of them very nasty. It is hardly necessary to say that no wine is served. The good Mussulman never drinks wine in public. After every course servants hand to each guest a small basin containing tepid water delicately perfumed and a clean napkin. This is very refreshing, and, when the manner of dining is remembered, very necessary. There is no lack of liquid refreshment, but as this is made up of sherbets of various flavors, but all extremely sweet, one is apt, about midway of the feast, to long for a draught of cool, clean, comfortable water.

Of course, it is always more or less of an "event" when the master of the household visits the harem. There is always sad heart-burning and jealousy of the favorite wife—generally the last of the lot. From this circumstance one is apt to conclude that there is a great deal of human nature about the Turk, after all.

It is a very pretty sight to see a Turkish lady of rank taking her afternoon drive. This is always in a coupe or elance; never in an open carriage. First comes the "saice," or running footman, always a tall, lithe, handsome young Arab, with bare legs and feet, clothed as to body in a thin white shirt, with wide, open flowing sleeves; a sash of gay colors around his waist, his head covered with the inevitable "tarboosh," around which is rolled a great turban of

IN THE POULTRY YARD.

How Hens and Young Chickens should be Cared For in Early Summer.

One must not expect too much of a poultry-keeper certainly will be disappointed unless he discounts his losses by fifty per cent, and is contented with his net profit as such as he expected. The making of the old story who counted her chickens too soon is only a type of the modern poultry amateur, who uses additional and multiplication too freely, and badly cut up by division when he comes to sum up the results of his business. Nevertheless, there is a way of being successful in keeping poultry, and a man or woman, boy or girl, who can keep a flock of twelve or twenty for a season a profit of a few dollars for the season, is on the way to making a large business profitable. One thing at least is favorable, which is that poultry products are salable everywhere at high prices, while near a large town or city a good price can be obtained for both eggs and chickens. Near a city a profit of \$7 per head has been made from a flock of twenty-two Brahma hens, the eggs averaging a dozen to each hen for the year and young fowls forty pounds per year, which resulted from an average of 25 chicks to each hen, and each young fowl when fat for the holidays, weighing one with another, five pounds, 25 cents a dozen for the eggs and ten cents a pound for the chickens the total equaled \$8.75 per hen. This stance will afford a basis for comparison with other flocks less favorably situated, and if the usual division indulged in and the product be halved, and the prices then be halved, it will still be the very comfortable satisfactory profit of nearly \$2 per hen. This figuring ought to be encouraging to the ambitious young poultry-keeper who can see very clearly that it will pay to rear poultry, although the price of eggs and fowls may be low, if he be careful and attentive to the needs of the flock.

In spring and summer care is needed. The brooders are busy and young chicks arriving freely require attention. The greatest care however, in the poultry yard is fussing. When the hen is well set she should be left alone. The hen understands the business of incubation better than any incubator maker, and the only care required after a hen is safely on the nest is to watch for the chicks and be ready to take them from the nest until all the brood is hatched. A small basket, with a piece of blanket or soft woolen cloth to cover the young nestlings will be found very useful to save the young chicks from being crushed in the nest. As they are hatched they should be brought in and put in the basket, which is kept in a warm place. No feeding is required for twenty-four hours or more. The little creatures will sleep and digest the remnants of the yolk enclosed within them during the one or two days the remainder of the brood are coming forward. The coops should be roomy and should be put in a dry place. After a number of years' practice we think an open shed facing the south is the best place for coops, which are thus protected from sudden rain storms or rough weather. When the hen is in the coop with her brood she will get along without being watched, and fussing is again a hinderer. The staple food for young chicks is cracked wheat and corn. A coffee mill will serve to crack the wheat and a bushel of corn may be taken to the mill and be ground into coarse hominy. This is for the first few days' feeding. Whole wheat may be given when the chicks are ten days old. The greatest treat is a few earth worms dug from rich damp soil, and these are swallowed with avidity, and seem to be healthful. In place of these we take some lean beef and chop it fine and give a teaspoonful to a brood of ten or twelve once a day. Pure water renewed three times a day is indispensable. The very frequent "grapes" which destroys one-third of all the chicks hatched, as we believe, is easily avoided by keeping the chicks on clean ground. Our chicks have the run of the garden, the coops being set among the melons, where there is more room, but adjacent to the other coops. The sprightly, active young creatures will wander over half an acre of garden, picking up the flea beetles from the radishes, and the snips, the flies from the onions, jumping up to take striped bugs from the melons and cucumbers, and by their restlessness disturbing every insect pest, thus saving something from its ravages. In a garden of half an acre there is room for twenty crops of ten chicks each, and the service these 200 chicks will do will pay all the cost of rearing them. A little corn-meal scattered around a plant tree, which is jarred immediately afterward, will bring up the chicks, which will seize upon every sly creature which drops and lies as if dead, and will thus save the plums. The garden ground clean and the grape worms are not picked up to infest the young chicks.

But the hens should not be neglected altogether. They are, or should be, inclosed in a yard and kept out of the chief. If the yard is large, as it should be, and divided into two parts to allow a change, and each half alternately sown with oats or peas, or rape seed for green picking for the hens, they will do as well as if on a range. But among other varied food, a liberal tri-weekly allowance of fresh bones from a butcher, broken up small with a hammer, should not be neglected and an abundance of pure water should be provided. We have found a pasture of young rape and mustard sown upon half of the yard to be a most excellent provocative of eggs, and the plowing of the yard—a hand plow—very useful for this purpose—buries the foul matter and keeps the ground sweet, pure and healthful. This sort of food and ground is particularly conducive to health, and health to eggs and flesh, and consequently to profit.—Henry Stewart, in N. Y. Times.

BEE-CULTURE.

The Annual Profit to be Derived From an Ordinary Hive.

As to how much honey may be expected from each hive no one can give a correct answer. A swarm may store a large supply one season and fall short the next. The temperature of the atmosphere, the duration of the winter, the length of the following season, and the number and kind of plants within their reach affects the result. Then, again, something depends upon how much the bees are assisted. By supplying artificial comb, and arranging the hives so as to permit the colony to have plenty of cells to fill, as well as keep up their numbers, they will perform a greater amount of work. Bee-keeping is a science, and he who engages in the business should make himself familiar, not only with the habits of the bees, but also with the condition of the colonies at all periods of the year, as well as with the plants upon which the bees work. By strict attention to his duties a New York bee-keeper succeeded in netting twenty dollars per hive from his bees for thirteen years, the number of hives being forty-two. We may estimate much lower than such figures for the average bee-keeper, and allow only five dollars as the net profit, which, considering the ease with which the bee-keeper will secure that proportion, is an amount that will amply reward the owner. The profit depends upon the food and its abundance as well as the number of colonies. It is much better to have only ten strong colonies, yielding ten dollars per hive, than twenty weak colonies that produce only five dollars per hive. As a rule, the majority of bee-keepers are induced to keep too many bees, which is not always the more profitable method.—Farm, Field and Stockman.

—Several cheese factories in Chautauque County, New York, have lately been transformed into creameries for the manufacture of butter of a high grade. Low profits in cheese is the reason for the change.—Buffalo Express.

—The New York Legislature passed a bill providing that no minor under the age of eighteen and no woman under twenty-one shall be employed in any manufacturing establishment more than sixty hours per week, and that no child under thirteen shall be employed in any such establishment.