

NEVER SATISFIED.

"Only a housemaid!" She looked from the kitchen—
Neat was the kitchen and tidy was she;
There at the window a seamstress sat stitching—
"Were I a seamstress how happy I'd be!"
"Only a Queen!" She looked over the waters—
Fair was her kingdom and mighty was she;
There sat an Empress, with Queens for her daughters;
"Were I an Empress, how happy I'd be!"
Still the old frailty they all of them trip in!
Eve in her daughters is ever the same.
Give her an Eden, she sighs for a pippin;
Give her an empire, she pines for a name.

LITTLE BY LITTLE.

"Little by little," the torrent said,
As it swept along its narrow bed,
Chafing in wrath and pride.
"Little by little" and "day by day,"
And with every wave it bore away
A grain of sand from the banks which lay
Like granite walls on either side.
It came again, and the rushing tide
Covered the valley far and wide,
For the mighty banks were gone.
A grain at a time they were swept away;
And now the fields and meadows lay
Under the waves, for the work was done.
"Little by little," the tempter said,
As a dark and cunning snare he spread
For the young, unwary feet.
"Little by little" and "day by day"
I'll tempt the careless soul astray,
Into the broad and flowery way,
Until the ruin is made complete.
"Little by little," sure and slow,
We fashion our future of bliss or woe
As the present passes away.
Our feet are climbing the stairway bright,
Up to the regions of endless light,
Or gliding downward into the night;
"Little by little" and "day by day."

How to Visit the Centennial.

SUGGESTIONS TO STRANGERS—
WHAT CAN BE ACCOMPLISHED
IN A SINGLE DAY.

The French phrase, "Embarras de richesses," is the one that applies to the difficulty that confronts visitors on their entrance within the Centennial. It has, therefore, been thought while to plan out a tour or route that will enable a person to see the most within a visit of one day. Enter the Main building at the east door of the grand central aisle. Go at once up stairs to the Massachusetts Educational department, which is the gallery overhead of the entrance. From this gallery a grand vista is obtained of the main hall. Pass down the main aisle to the middle of the building, where the central transept crosses, and the visitor will have gone through the end devoted to the United States. Then pass out the right hand door and through Memorial hall and thence to the art annex. Retrace the course and come back again to the Main building, walk up to the top of one of the towers of the Main hall, and there can be had a general view of the geography of the grounds. Coming down again proceed to the end of the Main hall, passing, during this walk, the displays made by foreign nations. Pass now to Machinery hall and walk to the centre to the Corliss engine; then to the large tank, and, returning again to the long lines of Machinery hall, proceed to the end of it and go out the west door. Go up by the Catholic fountain to the Japanese building, and pass to the English cottages. If the visitor has a state building, inquire for it, and visit the state agent. Then go to the United States Government building, thence to the Woman's building, thence to the Agricultural building, thence to the Horticultural building. A stroll through the grounds towards the Main building will show many structures devoted to specialties or built by foreign governments. Visitors arriving by the Reading railroad or from the city by the Girard and Market street cars will find the east entrance of the Main building their best starting point. Visitors arriving by the Chestnut and Walnut, Vine or Arch street cars, or by the Pennsylvania railroad, will do best to enter at the Belmont gate and enter the west end of the Main hall, and go eastward to the central transept, through Memorial hall into the art annex; back to the main hall of the tower; then

to the east end; then back again to the west end and take up the route indicated above. — *Philadelphia Press.*

SERICULTURE.

(CONTINUED).

SPINNING COCOONS.

When the worm is within three or four days of its spinning time it has acquired its greatest size and most ravenous appetite and formidable appearance. From this time until it begins its cocoon it seems to lose its appetite and diminish in size and weight. It also from that time gradually changes its color from a rank greenish white to a light pearly yellow, and generally to assume the appearance of maturity. The last three or four hours before going to spinning it becomes in a degree translucent, and its skin about the neck becomes somewhat wrinkled. It becomes restless and uneasy, frequently raising its head as if to reach something; and if it eats at all at this time it does so daintily as if feeding on dessert. These signs admonish the keeper to prepare for a harvest if not a golden, certainly a silken harvest. At this stage the worm begins to hunt some nook or corner out of sight, in which to wind its body in a silken shroud, and the sooner it can find a suitable place to suspend or fasten its cocoon the more perfect and complete that cocoon will be made, and the more valuable will be the harvest to be gathered. Hence it is very important that good provision be promptly supplied in which the worms can all spin their cocoons. Many plans for this purpose have been invented. The best—or such as combine the qualities of economy, cleanliness and adaption to the seeming fancy or real wants of the worm—should be adopted. Common wild mustard, cut just before the maturity of the seed, and the branches brought together and tied at the top, and laid between or set up inside the pews of branches upon which the worms have been feeding, is very good. Also boughs of willow, or any other small and bushy twigs, similarly prepared, may be used; but clean wheatstraw, cut off good length and tied up at each end, in bunches of three and four inches in diameter, and then pressed longitudinally so as to make a bulge in the centre of the bunch, is about the best plan for this country, as it can be obtained everywhere, and the worms seem to like it as well as anything. It has this advantage, that the cocoons are easily gathered from it, and with very little loss of floss silk—no dirt adhering to the cocoons. [Where oak-brush can be had it answers the purpose well, as the worms seem to like it. Slats, or lath arranged about three-quarters of an inch apart, standing on end, and fastened together, have been used in this Territory, to good advantage. But as this last mode is somewhat expensive, the new beginner had better use oak-brush or other material having good foliage and easy of access.]

After the worm commences the cocoon, it must not in any manner be disturbed, and if allowed to proceed unmolested it will finish in from three to five days. In from six to eight days after the cocoons are formed they should be gathered, and all, except those selected for hatching, must be exposed for three or four days to the direct rays of the sun, to kill the chrysalis within. It will be well to expose them longer so as to be sure to completely dry up or evaporate the fluids or moist substances of the chrysalis, otherwise there is danger of injuring the silk, by staining it with the putrid matter of the decaying chrysalis. It is also important that this chrysalis be thoroughly dried, to prevent the bad smell that would otherwise be admitted from the cocoons when stored away, and also to prevent their heating. If you are prepared to reel the cocoons at home, this work may be now commenced, or if the cocoons are to be sold, they are now ready for market. But in any event it must be remembered that mice will destroy the cocoons if not kept out of their reach. So fond are mice of the chrysalis that one mouse in a very short time will destroy hundreds of dollars worth of cocoons.

It's an advantage sometimes (says the Brooklyn Argus) to beguile your neighbor's servant girl into your own service. A servant girl who is up family secrets as a candle stores up water for future use.

When to Cut Grass, Clover, etc., for Hay.

A correspondent of the Ohio Farmer says—

I have lately observed several articles on the best time to cut clover for forage purposes; some giving a certain day of the month as the result of their experience. Most of these articles are opinions, as the result of observations and experience. But I have not seen any based on chemico vegetable reasons—the true basis on which can rest with safety all agricultural operations.

All valuable plants used as fodder, contain in a state of solution in their sap certain nutritious substances which are very desirable to retain in the hay after grazing off the aqueous solvent. This evaporation is called curing, and if properly done retains all the nutritious elements and removes the water; while the amount of these substances retained, the nutritious matters, constitute the real value of the fodder.

Seeing this is the state of things, then, the best time to cut these plants undoubtedly is at the time that they contain these substances in the greatest abundance, wholly regardless of the day of either the month or the week. It is a well established fact in botany that the same plant contains, at different stages of its growth, different quantities of sap, and of varied chemical qualities, and of course the nutritious matters obey the same universal law.

A law, too, of equal universality; plants grow as long as they live, and during this period of growth, if healthy, there is a uniformity in their sap, both in quantity and quality, but at different periods arise great changes in both. Thus when they begin to make preparations for fructification, by the gradual formation of floral envelopes for the protection of the delicate organs of procreation, then a destined change ensues in the chemical constitution of the sap. Soon after the seed has reached its embryotic state the flower not being of any further use to the plant's well-being, loses its vitality and drops off. At this change the plant's sap undergoes another change. Its nutritious matters are needed, and the whole energies of the plant, and everything available in it, is called into requisition towards the perfection of the seed, the chief object of its existence. So much so is this action and its energies required that in many plants it is attained by complete exhaustion and death of the whole plant except its seed. This is the case with all annuals. In herbaceous perennials, as in most of our grasses, this takes place with every part but that which remains underground, which remains there to recuperate by rest until the following year.

If it is desired to cut plants to secure the largest percentage of sap charged with the greatest amount of nutritious matters, then they ought to be cut, as near as can be, at the time that the flower is dropping off, irrespective of the day of the month or the age of the moon; then carefully removing the watery part by drying, recollecting that the contained nutritious matters are not volatile, but remain in the hay, which, when thus cured, affords sweet, palatable, nutritious fodder.

These principles apply to all our forage plants—clover, grass, etc., used as hay, and are not based on experience or observation, which, taken alone, are neither always reliable nor safe guides in agricultural operations, but on scientific principles, which, when perfectly applied, never mislead.

BIG GUNS.

The recent trials with the 81-ton gun, as described in our columns, will have given our readers some idea of the power of modern artillery. Yet it is not easy to form an adequate conception of the enormous forces thus set in operation. The ignition of three barrels of powder in the chamber of a gun is productive of an explosion which might be expected to prove altogether uncontrollable, but which is nevertheless employed to propel a ponderous projectile along a rifled bore, the whole operation being conducted with all the nicety of scientific experiment. The shot is made to rotate as it proceeds and is sent spinning out of the gun like a bullet from a soldier's rifle. There

is a distinct measurement of the velocity with which the shot flies on its way, as also of the pressure which the exploded powder exerts in the gun. A pressure of twenty-two or twenty-three tons on the square inch is not readily to be comprehended. If a bar of iron an inch square were to be placed so as to rest upright on an iron plate, this bar would have to be continued upwards for nearly two miles and three-quarters before its entire length exercised a pressure of twenty-two tons on the square inch of plate. There is another way of looking at the fact, which is worth notice. Taking the pressure of the powder gas as between twenty-two and twenty-three tons on the square inch, the base of the projectile in the 15-inch gun will receive a total pressure of nearly 4,000 tons.

Accordingly if the gun was fitted with a piston like a steam cylinder, and were placed with its muzzle upwards in a vertical position, it would be capable—so far as mere force is concerned—of lifting such a vessel as the *Rover* (an iron corvette) completely out of the water, the ship having all her engines, guns, stores and men on board. Pretty nearly the same thing could be done with the *Royal Adelaide*. The *Pallas* could be readily lifted after the same fashion, supposing the power could be brought to bear. Or the entire armor of the *Inflexible*, weighing 3552 tons, could be heaved upwards. Two of the 81-ton guns could very nearly lift the *Hercules*, with all her weights on board. Three of these guns could lift the *Inflexible* herself, with her full load. Hence, we may say that the four guns which this ship will carry are capable of running away with her, big and weighty as she may be. Of course our guns are intended not merely to look big and make a noise, but to perform certain work whenever it may be required.

What the 81-ton gun can do against an armed target has not yet been practically demonstrated, but some important results have been achieved with the gun which, so far as Woolwich is concerned, come next below it in magnitude, and to these we would invite attention. Thus, as a matter of fact, the 38-ton gun has sent its projectile through the following combination: A 12-inch plate, an 8-inch plate, six inches of teak, and two inches into a five inch plate, or altogether more than twenty inches of iron and six of teak. In another instance the projectile was sent through a target built up in the following manner: A 4 inch plate, an 8-inch plate, six inches of teak, a 5-inch plate, six inches of teak, and an inner skin with angle irons, making altogether 18½ inches of iron and 12 inches of teak. Granting that this was done at close quarters, still it is a wonderful performance for a gun of 38 tons weight.

All that Herr Krupp has done towards piercing the armor of the *Inflexible* has been to send a projectile through 18 inches of iron and six of teak. This was certainly effected at a range of more than a mile; but on the other hand the Krupp gun weighed 56 tons, or half as much more as the Woolwich gun to which we have just referred. An attempt has been made to show that the Krupp gun of 56 tons is superior to the Fraser gun of 81 tons, but this view was evidently based on an erroneous assumption. The Krupp gun has developed an energy of rather less than 22,000 tons, whereas the 81-ton gun has very nearly reached 25,000 tons, and will in all probability, considerably exceed that point before the experiments are at an end. The novel expedient of enlarging the powder chamber of the big muzzle-loader is now being effected, and in another month we may see some yet higher results. The powder chamber, we believe, will undergo an enlargement to the extent of one inch in its diameter, thus making it sixteen inches, while the diameter of the bore where the shot travels will still remain at fifteen inches. When the gun appears in this new form it will be capable of taking a larger charge of powder, and if the pressure does not prove too great we may see its present enormous cartridge enlarged by another half barrel, so as to make up a total of 350 pounds of powder. Even if so high a point as this be not reached, we may expect to see a material advance in the force of the projectile. Much interest attaches to the progress which is being made at Elswick with the eight

100-ton guns intended for the Italian navy. The rifling of the first of these enormous weapons is going steadily forward, but is necessarily a long process. In a few weeks we may expect to hear that the huge piece is on its way to Spezzia on board the large Italian transport—the *Europa*. The length of this gun is thirty-two feet, with a diameter of six feet and a half, the caliber being seventeen inches, and the rifling uniform, on the polygroove system. The projectile is to weigh 2,000 pounds, and will be propelled by 300 pounds of powder. An immense pontoon has been designed by Sir W. Armstrong's firm, and will be used for floating and firing the gun in Italian waters. The arrangements are such as to test not only the gun, but also the hydraulic machinery provided for working it. As the guns, when on board ship, will be fired in turrets, very little room will be allowed for their recoil. The hydraulic presses which are to receive the shock will, we believe, only allow the gun to recede something like two feet. The strain must be tremendous, and there is obviously as much need to prove the machinery as the gun. Concerning the qualities of the gun, there can be no doubt that they will be such as to sustain the reputation which Sir W. Armstrong has long possessed as an artilleryman. The relative merits of the Woolwich and the Elswick monsters will be a matter of some interest, but the real contest is with the Krupp. For the present we cannot see that Essen is gaining any victory, or is doing anything more than producing good guns at a great cost. For safety nothing can compete with the guns that are produced at Woolwich and Elswick, and unquestionably this is a consideration to which great weight must be attached. The breech-loading question is losing its importance daily, though considerable efforts are made to press it on the notice of the public.—*London Standard.*

By Telegraph.

AMERICAN.

NEW YORK, 9. — The Hudson river Tunnel Co., who have been delayed for more than a year by an injunction, have again resumed operations at the shaft in Jersey City. The roadway under the river will be 5,400 feet long and twenty-five wide, the outlet to be at Washington Square, New York. The estimated cost is \$15,000,000, and upwards of \$10,000,000 in stock has already been subscribed, the principal parties to the enterprise being Californians. It is intended to complete the work in two years.

In the suit of Morris K. Jessup & Co., Drexel, Morgan & Co., Perkins, Livingston & Post and others vs. Thomas A. Scott, President of the Pennsylvania Railroad, and others, for railroad iron supplied for the building of the Davenport and St. Paul Railroad, Judge Sanford, in the Superior Court this afternoon, gave a direct verdict for plaintiffs in \$306,208.37 in gold.

SAN FRANCISCO, 9. — Warrants were issued to-day for the arrest of Leland Stanford and E. H. Miller, President and Secretary of the Central Pacific, on complaint of J. R. Robinson, a stock holder of the company, for refusing to exhibit certain accounts of the company. The facts in the case are, that in the examination of the books of the company now going on, in suits brought by Robinson and other stockholders, the secretary was asked to produce a certain report made by Stanford to the directors of sundry expenditures. The secretary produced the paper, but refused to state the contents, and being asked if it did not contain a statement of the amounts of money paid to influence state and congressional legislation, declined to answer. A warrant, therefore, was issued to compel the production, under the State code governing corporations. The examination discloses great unwillingness on the part of the secretary of the company to testify on material points.

CHICAGO, 10.

The *Times'* Bismarck special says a train of twenty-seven wagons, under command of Don Stevenson, arrived here last evening from the Deadwood mines for supplies. They brought in about \$15,000 in gold dust.

The steamer *Yellowstone* also arrived yesterday, and brought \$21,000