THE INSECT WORLD.

The Gall Insects.—We may all have noticed the excresence or ball, of a red mossy apppearance, upon the stems of the wild dog-rose. This is called a gall; and is formed by an insect named a Gall-fly, as a place wherein to deposit her eggs. There the larvæ live and pass the winter, sheltered by the mossy covering of the gall-nut from the intense cold of that season, when the hedges are bare of leaves, and could therefore afford them but little shelter.

Another species produce those singular-looking galls called artichoke galls, becausc of their scaly appearance. The overlapping scales of these are intended, also, as a protection against the cold.

Galls of the willow may also be found upon the branches of that tree. They are covered with a smoother bark than that upon which they grow.

The Gall-fly produces the excrescences which are found in the form of small round berries on the leaves of the oak. The galls of the oak, called oak-apples, are also formed by a species of Gall-fly.

Many species of Aphis, or "blight," produce partial galls or cells on the leaves of trees and plants. These cells form cradles for the young. They may often be found on the leaves of the black poplar and mountain ash. We often meet with them on the leaves of currant and raspberry bushes.

Spiders.—The Gossamer-spider it is which forms those minute threads, or webs, that sometimes spread over the ground, in autumn, in numerous filmy flakes. These insects may frequently be seen throwing out their webs, upon which they are lightly borne upwards into the air. Upon this line, or streamer, they are carried rapidly aloft and sometimes disappear in an instant. It is supposed that it is in search of minute insects, found only at some height in the air, that these spiders take their flight. The appearance of the Gossamer in the air and on the ground is generally after the season of corn harvest. At that period the stubble ground may sometimes be seen literally covered with their filmy threads.

The Diadem-spider, or Garden-spider, is the most beautiful of its kind. The web is constructed with the greatest regularity and precision: so much so, that it bears on that account the name of the Geometric Spider.

Towards the end of summer, clusters of the eggs of the Diadem-spider may be seen on bushes and hedges. When hatched, the young all keep together, huddled up in a ball. This seeming bubble bursts apart when touched, and the alarmed insects scatter themselves in all directions. As soon as they can re-assemble, they do so, and group together, as before.

The shepherd-spiders are found in the latter part of the summer; when they are seen resting upon palings and other places, and are easily recognized by their long, thin legs.—Some call them "Harvest-men."

Some Spiders, instead of weaving webs, hunt their prey. The Zebra-marked Spider, as well as some others, does this; and when within a convenient distance, springs sideways upon its victim. Others wait in ambush for their prey; concealing themselves in rolled up leaves, holes in walls, crevices of bark, or even in the bells of flowers.

Besides these, there is the Diving-spider. This species dives under water in search of food. The little divers reside in a filmy dwelling, or air-filled diving bell, attached by threads to plants. This they close up, and in it pass the winter.

Others, of similar habits, skim the surface of pools, in pursuit of food.

London Geological Society, April 10.

Sir C. Lyell, President, in the chair. The following communication was read:—"Observations on the Discovery, by Professor Lepsius, of Sculptured Marks on Rocks in the Nile Valley in Nubia, indicating that within the Historical Period the River flowed at a Higher Level than in modern times."—By L. Horner. Esq. The author, having given Professor Lepsius's account of the position and character of certain hieroglyphics registering the heights of the river floods, sculptured in the time of Amenemha the Third (Mœris) about 2200 years B. C., on the face of the foundation rock and the masonry of two fortresses which were built by Sesuatesen, predecessor of Mœris, on the banks of the Nile at Semne in Nubia,—and having referred to the hypothesis proposed by Professor Lepsius in explanation of the great difference (26 ft. 8 in. English) apparent between the highest ancient level of the water of the Nile, as indicated by the uppermost of the markings, and the highest level of the water during the inundations of the present day, viz., that the bed of the Nile in Nubia has been excavated to a depth of 27 ft. during the last 4000 years,—proceeded to inquire into the physical and geological features of the Nile Valley in Nubia, noticing the power of the stream and the hardness of its bed—including the volume and velocity of the river, its depth and degree of inclination, and the lithological character of the rocks over which it passes. After a lengthened consideration of these important conditions, the author arrived at the conclusion that any wearing away of the bed of the channel north of Semne, the site of these ancient Nilometric markings, could not have taken place within the Historical period. The only hypothesies that in the author's opinion could meet the requirements of the facts observed, would be either the wearing away of a reef or barrier at the place in question,—a process requiring too long a period, or the existence at some distant period of a dam or barrier, formed perhaps by a landslip of the banks, at some narrow gorge in the river's track below Semne, which in the course of time had again been washed away:—but of the existence of any such contraction of the channel where such a barrier was possible, the author stated there is as yet no evidence; and he concluded by observing, that the conditions attending these markings, at present so enigmatical, offer an interesting problem to any geologist, well versed in the questions of physical structure involved, who may hereafter visit Nubia.—*London Athenæum, April 27.*

Manufacture of India Rubber.

Here we saw the manufacture of rubber.—The man of the house returned from the forest about noon, bringing in about two gallons of milk, which he had been engaged since daylight in collecting from 120 trees, that had been tapped upon the previous morning. This quantity of milk, he said, would suffice for ten pairs of shoes, and he could collect the same quantity every morning for several months.

The trees do not usually grow thickly, and such a number may require a circuit of several miles. In making the shoes, two girls were the artists, in a little thatched hut, which had no opening but the door. From an inverted water jar, the bottom of which had been broken out for the purpose, issued a column of dense, white smoke, from the burning of a species of palm nut, and which so filled the hut that we could scarcely see the inmates.—The lasts used were of wood, exported from the United States and were smeared with clay to prevent adhesion. In the leg of each was a long stick, serving as a handle.

The last was dipped into the milk and immediately held over the smoke, which, without much discoloring, dried the surface at once. It was then re-dipped, and the process was repeated a dozen times, until the shoe was of sufficient thickness, care being taken to give a greater number of coatings to the bottom. The whole operation, from the smearing of the last to placing the finished shoe in the sun, required less than five minutes. The shoe was now of a slightly more yellowish hue than the liquid, but in the course of a few hours, it became of a reddish brown.

After an exposure of twenty-four hours it is figured, as we see upon the imported shoes. That is done by the girls, with small sticks of hard wood, or the needle-like spines of some of the palms. Stamping has been tried, but without success. The shoe is now cut from the last, and is ready for sale, bringing a price of from ten to twelve vientens, or cents, per pair.—*Edward's Voyage up the Amazon.*

The Farm.

RECLAIMING WET MEADOWS.

It is only about half a century since the first efforts were made to increase our crops of hay by reclaiming wet meadows, and carrying on to our dry gravel lands, what was taken from the ditches to drain them. Forty-seven years ago this month, a young man in my neighborhood commenced the improvement of a piece of sunken meadow and swamp land, by draining, and wheeling on gravel and sand, from four to six inches deep. The neighbors unitedly sneered at the undertaking, and some of them inquired of his father, whether he permitted his son to trade and do business for himself. The son, however, having succeeded by the third year, to raise six tons of timothy and foxtail, on two acres, called upon a son of one who had ridiculed the undertaking, to assist in harvesting the crop. His father, on being made acquainted with the result of the experiment, sent one of his younger sons into a swamp, and kept him there during his minority. But it was many years, before much was done in this branch of improvement; and most of our farmers thought that land that could not be ploughed, could not be improved.

Some pieces of meadow land, of shallow soil, where the plough would run to or near to, the hard pan beneath, were cultivated, and made productive of rich grasses, for one or two years only; for, although they were sufficiently ditched, to take the water from the soil above the hard pan, the subsoil would retain the water so long before it found its way to the drains, rendering the earth at the bottom of the roots of the grass so cold, as to re-produce the natural grasses in two or three years, unless it was constantly warmed with manure. But by using the subsoil plough, breaking up and loosening the soil to a greater depth, the draining may be facilitated.

Our wet meadows and swamps, where the mud or peat is from two to ten feet in depth, if capable of being drained at a reasonable expense, are of much greater value for reclamation, than those of a shallow soil; as, by sinking the ditches to a proper depth, they may easily be made as dry as may be desirable for the growth of grain, vegetables and grasses. These lands of deep soil are mostly incapable of being ploughed at the commencement of improvement, and it is bad policy so to do, where they will admit of it. The most economical mode to be adopted, as far as my experience enables me to speak, is to clear the surface of grasses and bushes, and cover with sand or gravel, sufficient to kill the native growth of vegetation; then manure, and sow with rye and grass, if in the autumn, or with oats and grass, if in the spring or summer; for if the grain fails, the roots of the rye or oats will strengthen the surface, and aid the grass in getting root.

These lands, improved in manner aforesaid, without ploughing, continue productive without any additional expense, much longer than those which have been ploughed; the decomposition of the original growth, which has been covered by the top-dressing, furnishing food for the cultivated grasses. By an experiment I made some twenty years since, by the above mode, on one acre, I obtained good crops of hay for eight years in suceession, without any dressing: the ninth season, the crop was somewhat less than a ton; it was then ploughed in the fall of that year, and planted the first day of the following June. The sand and peat had become well mixed, was very mellow and easy to till. The acre produced fifty bushels of corn—having one row of potatoes around the margin. The next year, it produced about forty bushels of barley.—*Hon. Asa T. Newhall's Address at the last Fair of the Essex Agricultural Society.*

Spayed Cows and Constant Milk.

With farmers who raise milk for the market, and gentlemen who keep but one cow to supply their own family with milk, the inquiry is important. How can cows be made to give milk every day for a number of years? This object may be secured by *spaying* them, a surgical operation which it is not proper in this connection fully to set forth. For a minute description of it, we must refer our readers to treatises on veterinary surgery. The effects of the operation are similar to those of castration upon the other sex. Spayed heifers bring forth no calves. Spaying, says M. Morin, in his veterinary surgery, induces permanency of milk, increase of quantity and improvement of quality; richer, more butter, superior color, finer taste and flavor.

Stevens' book of the farm thus sums up the advantages of spaying milch cows. 1. Rendering permanent the secretion of milk, and having a much greater quantity. 2. The quality of the milk is improved. 3. The dangers incident to breeding are avoided. 4. The disposition to fatten is increased, even when giving milk, and when from excess of age or injury, the secretion of milk is checked, a very short time is requisite to put the animal in a state fit for the market. 5. When fattened, the meat is of a superior quality.

This operation is less practiced in our own land than in many European countries. We have seen occasional notices of it in the dairy districts of New York: but we think it worthy the attention of the two classes to whom we referred at the commencement of this article.

DROUGHT.

On this subject, we lately read in an agricultural journal the following wise remarks, which we transfer to our columns for the benefit of such of our agricultural readers as may possess land subject to drought. The use of stone and rock upon sandy land is not sufficiently appreciated by farmers. Stones in dry weather protect land from drought by condensing the atmosphere upon their surface, in consequence of being of a lower temperature. Rocky, mountainous lands never suffer from drought, and stony lands suffer less from drought than lands free from stone; the difference will plainly be seen in the increase.—Clay is very useful on sandy land; it retains the moisture,—and sand on clayey land adds to its warmth and fertility. Farmers would be great gainers in the increase of the products of their lands, by carting clay upon sandy land, and plowing it in, and *vice versa*. Salt, mixed with clay, and thrown upon dry soil, attracts moisture, and will be found to a certain extent very useful. In many sections of the United States dry lands are found with swamps and bog meadows interspersed; these swamps and meadows have been accumulating the wash of these lands for ages, retaining it in a cold wet state. If this is taken out, dried and mixed with clay, salt and lime, in suitable proportions, and thrown upon the surrounding dry land, it will be found a most useful and valuable manure.

Preserve your Corn from the Crows.

In a recent number we described a method of doing this, which many have found successful. The substance of the article is contained in the following prescription: "Into one gallon of boiling water, put four table spoonsfull of tar. Put into this solution six quarts of corn which you intend for planting. Stir the whole till it is mixed, not exceeding two minutes. Draw off the water, and mix with the corn one pint of plaster of Paris, stirring it till the plaster adheres to the kernels." As this mode can be adopted only before the corn is planted, and as it may be too late for many of our agricultural readers to adopt it the present year, we extract the following from a recent number of the Cultivator:—"Last year I planted five acres of corn. I struck it, lined and cross-lined it, put up barrels, old junk bottles, my man of straw and two flags; all this was done as soon as I planted it, but did no good; the crows came, pulled up about twenty hills the first day, sixty the next, one hundred the next day, and it seemed as if they would take all my corn. I thought then that I would try an experiment. I carried into my corn field from my door yard, all my small chips, old shoes and woollen rags, and a lot of combustible stuff; made two heaps, covered them over with sods and put fire to them, and this had the desired effect; no crows troubled me afterward."

How to Preserve Cut Flowers.

Mrs. Loudon thus addresses a class of her fair countrywomen:—As you are fond of flowers in the room, you will, perhaps, be glad to know how to preserve cut flowers as long as possible. The most simple rules are, not to put too many flowers into one glass, to change the water every morning, to remove every decayed leaf as soon as it appears, cutting off the tip of the stems occasionall as soon as they show any symptoms of decay. A little powdered soda or saltpetre, thrown into the water, will keep them a fortnight.

Fireside Amusements.

The Changeable Rose.—Hold a red rose over the flame of a sulphur match, and whatever part the fumes touch will become pale or white, so that out of a red rose you can form a white rose. I have heard of young ladies keeping flowers in this way from summer till the season of winter gayety with success.—Towards the close of the season they picked a number of the finest roses, taking care that they were quite dry; they then held them over the fumes of sulphur until the color faded completely away: the flowers were then sealed at the cut stems, and shut up in air tight boxes. When the Christmas and New-Year festivities began, the roses were taken from their retirement, dipped in water, and carried into ball rooms nestling in the hair or on the bosoms of their fair owners.

Another way of making "Chameleon Flowers" is by the use of the spirit-lamp. Sprinkle the wick of the lamp with a little salt. Place a few scarlet flowers beside it, and they will appear yellow. Purple flowers will appear blue.