

THE
CANADIAN
Horticulturist.



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VOL. I.]

**SEPTEMBER,
1878.**

[NO. 9.

THE CHERRY CURRANT.

This currant has been widely disseminated, and is doubtless to be found in every collection of currants, not only in this Province, but in the sister Provinces, and throughout the United States. Its large size and deep, rich color combine to give it a very attractive and showy appearance, so that it is a beautiful ornament upon the table, looking exceedingly nice and tempting; and in the market attracts the attention of purchasers, commanding a ready sale, and sometimes a higher price than the smaller sorts. Yet in point of quality it is

not equal to the well known old Red Dutch, nor to the Victoria, being admittedly only second rate; and is another instance of a fact well known to dealers in fruit, that size and beauty of appearance are of more importance than flavor.

In the writer's experience with this variety, grown upon a moist sandy loam, there has been a lack of that productiveness which has generally been accorded to it. Those who have grown it on a stronger and heavier soil have not seemed to find so much deficiency in this respect. At times, too, it has seemed as though it suffered from the severity of our climate, yet we have met with no complaints from others of this nature, hence we are disposed to the belief that it will be found to thrive best and be most productive on a strong clay soil. Those who find it to thrive well and produce abundantly may plant it liberally for market purposes.

The history of this handsome currant is not without interest. Mons. Adrienne Seneclouse, a distinguished horticulturist of Bourgargental, Loire, France, received it from Italy among a lot of other currants, who noticed the extraordinary size of the fruit, and gave it in consequence the name it yet bears. In the year 1843 it was fruited in the nursery of the Museum of Natural History, and figured from these samples in the *Annales de Flore et de Pomone* for February, 1844. Doctor Wm. W. Valk, of Flushing, Long Island, State of New York, introduced it to the notice of American fruit growers in 1846, having imported some of the plants in the spring of that year.

Some years later a currant was introduced and disseminated under the name of Versailles or La Versailles, for which it was claimed that it was as large as the Cherry, longer in the bunch, and not so acid. Some pains was taken to obtain this variety on different occasions, and from the most reliable sources, so that there might be no mistake as to the correctness of the name, but after many years of trial we are unable to perceive any decided variation either in the quality of the fruit, the length of the bunch, or the habit of the plant, from the Cherry Currant.

A great many names have been given to this currant besides that of Versailles, and designing and dishonest men have taken the opportunity to use them to increase their sales and prices. If any of our readers should have offered to them plants of Red Imperial, La Caucase, Irish Grape, Macrocarpa, or Napoleon Red, they may rest assured that they are only the Cherry Currant under a new name.

THE JAPANESE IRIS.

(*Iris Kæmpferi.*)

This beautiful Iris is now attracting very considerable attention. The editor of the *American Agriculturist* says that he saw a bed of these plants in the garden of James Hogg, of New York City, ten years ago, and that after they had stood there long enough to show that they were perfectly hardy, he gave an account of them in the October number for 1870, with an engraving, which though considerably reduced in size, was sufficient to show their great beauty, and how unlike they were to any heretofore known forms of cultivated Iris. He says they come into flower after the ordinary varieties have done blooming; and the flowers are spread out in a flat plate, so that they are best seen when looked down upon; that the flowers are from four to six inches in diameter, and present a great variety in form, color, and marking; there are pure whites, pure blues, and some of the richest imaginable royal purple. Also that in the markings there is the greatest imaginable variety; that nothing can be richer than some of the intense purples and blues, with lines of golden yellow; or more delicate than the whites, with net-work of blue and purple.

We noticed in the same number, *American Agriculturist* for August, a description of twenty of the finest varieties which Mr. Hogg has selected and named, and learn from it that some are double, some semi-double, and others we infer are single; one is blue, mottled and spotted with white, with a fine yellow eye; another is dark pink, pencilled with white; another white, pencilled with purplish stripes, and purple centre, and so on in great variety. Our enterprising florists will doubtless procure them, and soon advertize them, so that our readers will be able to give them a trial.

THE GOOSEBERRY.

Are we entering upon a new era of the gooseberry? There seems to be indications that a race is springing up on this continent, proof to that enemy the mildew, and that need not be ashamed even in the presence of the great

gooseberries of the father land. The first step in this direction was taken by the Houghton, which originated with Abel Houghton, of Lynn, in the State of Massachusetts. Then came the Downing, a seedling of the Houghton, larger and better than its parent. Some time after, Smith's Improved, another seedling of the Houghton, was sent out, also an improvement on the parent, but no better than the Downing.

At the last meeting of the Fruit Growers' Association of Ontario, some fine looking gooseberries were exhibited by Chas. Scott, of Orangeville, larger than Downing or Smith's Improved. The history of this variety is thus given by Mr. Scott: "A friend of mine received some gooseberry seed from England, and from it grew some plants from which I picked a berry, and from the seed of it raised about eight or nine plants, but destroyed all except the one from which these were gathered, as they did not seem to have any merit. It has never mildewed with me as yet, though I have grown it for about ten years. It is the only large gooseberry that I can grow free from mildew. I have Roaring Lion, Crownbob, Whitesmith, and others, but as yet have never got a berry from them, as they all mildew and rot off the bushes; and not only the berries but the new shoots are all mildewed this year. This variety is a vigorous, open grower, quite hardy and productive; soil, a sandy loam."

At the same meeting, W. H. Read, of Port Dalhousie, exhibited a large number of seedling gooseberries, mostly of the English type, all of which, he stated, had so far proved perfectly free from mildew on a sandy loam soil. He also showed two varieties which manifested a large strain of native blood; these were fully double the size of the Downing, of much the same color, and judging from the branches exhibited, extremely productive. These also had been quite exempt from mildew.

In addition, we notice that E. P. Roe announces that he has discovered in an old garden in Newburgh, New York, two seedling gooseberries, one of which turns red when ripe, the other and later sort retains its beautiful green color until it drops from the bush, and that both of these are free from mildew. The berries, he says, are large, many specimens measuring three and a quarter by three and a half inches. To the first of these he has given the name of Roe's Early Ruby, and the other he calls Roe's Late Emerald, both of which he intends in due time to send out.

It will be a matter of considerable interest to watch the career of these gooseberries. Should they prove to be mildew proof in other places than these where they originated, and to bear abundant crops of large-sized fruit, a new era in the culture of the gooseberry will have been fairly inaugurated, and we may expect to go on multiplying varieties not subject to mildew, until there

shall be no lack of gooseberries of fine size and of excellent quality.

THE ROSE A TYPE OF INFINITY.

FROM THE PEN OF THE LATE A. J. DOWNING.

A fresh bouquet of mid-summer roses stands upon the table before us. The morning dew-drops hang, heavy as emeralds, upon branch and bud; soft and rich colors delight the eye with their lovely hues, and that rose-odor, which, every one feels, has not lost anything of its divine sweetness since the first day the flower bloomed in that heaven-garden of Eve, fills the air.

If there is any proof necessary that the rose has a diviner origin than all other flowers, it is easily found in the unvarying constancy of mankind to it for so many long centuries. Fashions there have been innumerable in ornaments of all sorts, from simple sea-shells worn by Nubian maidens, to costly diamonds, that heighten the charms of the proudest court beauties; silver, gold, precious stones, all have their season of favor, and then again sink into comparative neglect, but a simple rose has ever been and will ever be the favorite emblem and adornment of beauty.

Now the secret of this perpetual and undying charm about the rose is not to be found in its color; there are bright lilies, and gay tiger flowers, and dazzling air-plants, far more rich and vivid; it is not alone in fragrance, for there are violets and jasmines with "more passionate sighs of sweetness;" it is not in foliage, for there are laurels and magnolias with leaves of richer and more glossy green. Where then does this secret of the world's six thousand years' homage lie? In its being a type of infinity.

Of infinity! says our most innocent maiden reader, who loves roses without caring why, and who does not love infinity, because she does not understand it. Roses a type of infinity! says our theological reader, who has been in the habit of considering all flowers of the field, eye, and of the garden too, as emblems of the short-lived race of man. Yes, we have said it, the secret of the world's devotion to the rose, of her being the queen of flowers by acclamation and forever, is that the rose is a type of infinity.

The rose is a type of infinity because there is no limit to the variety and

beauty of the forms and colors which it assumes. From the wild rose, whose sweet, faint odor is wasted in the depths of the silent wood, or the Eglantine, whose wreaths of fresh sweet blossoms embroider even the dusty road sides, to that most perfect, full, rounded, and odorous flower that swells the heart of the florist as he beholds its richness and symmetry; what an innumerable range of shades, and forms, and colors. And indeed, with the hundreds and thousands of roses of modern times, we still know little of all the varied shapes which the plant has taken in by-gone days, and which have perished with the thousand other refinements and luxuries of the nations who cultivated and enjoyed them.

All this variety of form, so far from destroying the admiration of mankind for the rose, actually increases it. This very character of infinity in its beauty makes it the symbol and interpreter of the affections of all ranks, classes, and conditions of men. The poet, amid all the perfections of the parterre, still prefers the scent of the woods, and the air of freedom about the original blossom, and says,

“Far dearer to me is the wild flower that grows
Unseen by the brook where in shadow it flows.”

The Cabbage Rose, that perfect emblem of healthful rural life, is the pride of the cottager; the daily China Rose, which cheats the window of the crowded city of its gloom, is the joy of the daughter of the humblest day laborer; the delicate and odorous Tea Rose, fated to be admired and to languish in the drawing room or the boudoir, wins its place in the affections of those of most cultivated and fastidious tastes; while the moss rose unites the admiration of all classes, coming in as it does with its last added charm to complete the circle of perfection.

Then there is the infinity of associations which float like rich incense about the rose, and that after all bind it most strongly to us, for they represent the accumulated wealth of joys and sorrows which has become so inseparably connected with it in the human heart.

“What were life without a rose?”

seems to many, doubtless, to be a most extravagant apostrophe; yet if this single flower were to be struck out of existence, what a chasm in the language of the heart would be found without it. What would the poets do? They would find their finest emblem of female loveliness stolen away. Listen, for instance, to old Beaumont and Fletcher:

“Of all flowers,
Methinks a rose is best;
It is the very emblem of a maid;
For when the west wind courts her gently,
How modestly she blows and paints the sun
With her chaste blushes. When the north wind comes near her,
Rude and impatient, then, like chastity,
She locks her beauties in her bud again,
And leaves him to base briars.”

What would the lovers do? What tender confessions hitherto uttered by fair half-open buds and bouquets, more eloquent of passion than the Nouvelle Heloise, would have to be stammered forth in miserable clumsy words; how many doleful suits would be lost; how many bashful hearts would never venture; how many rash and reckless adventurers would be shipwrecked, if the tender and expressive language of the rose were all suddenly lost and blotted out. What could we place in the hands of childhood to mirror back its innocent expression so truly? What blossoms could bloom on the breast of the youthful beauty so typical of the infinity of hope, and sweet thoughts that lie folded up in her own heart, as fair young rose buds? What wreath could so lovingly encircle the head of the bride, as that of white roses, full of purity and grace? And, last of all, what blossoms, so expressive of human affections, could we find at the bier, to take the place of the rose? the rose, sacred to this purpose for so many ages, and with so many nations:

“Because its breath
Is rich beyond the rest; and when it dies
It doth bequeath a charm to sweeten death.”

PRIDE OF THE HUDSON RASPBERRY.

This is one of the new aspirants for public attention, and as the readers of the *CANADIAN HORTICULTURIST* desire to be informed with regard to the new things as well as the old, we shall put them in possession of what information we have in regard to this variety. Its origin is shrouded in darkness that can not be penetrated; no hybridist claims to have wedded its parents, and all that can be said of it is that it was found in an old garden in Newburgh, N. Y. “I ’spects I growed,” said Topsy, and that is the history of the origin of this new

raspberry, it grew. So many varieties of raspberries were grown in this old garden that even guessing seems to be for once at fault. But no matter how it came into existence, especially since no one can ever tell, yet here it is, challenging the world to prove its worth. It claims, among other things, to be very hardy. It is five years old, and has passed through five winters without injury, though wholly unprotected. Hardiness is a very desirable quality in a plant that must stand out in our winters; we may take the pains to protect a few pets, but can not summon the patience to lay down and cover acres of raspberry canes. It pays well, we are told, to take this trouble, but we want a raspberry that will pay well without the trouble. It claims to be a most vigorous grower, and thus far to have thrown up suckers moderately. Raspberry canes that sucker immoderately are an immoderate nuisance. There's the Brandywine, it suckers awful. It is well for this new-comer that so far it has not gone extensively into the suckering business, else it would soon be voted more trouble than profit. It has a long period of ripening, beginning to ripen about the first of July, and having yet on the 24th of July an abundance of green berries and blossom. This is very nice for the private garden, where one requires a quart or so of berries a day, and wants them to continue until blackberry time; but the market gardener does not want to be everlastingly travelling up and down the rows to pick the berries; he wants them to ripen up when their time comes, so that he may pick them and be done with it; he prefers to grow another variety that will come in with a crop afterwards, to being continually gleaning over the same bushes. To compensate in some measure for this, it promises to be a great bearer. On one short cane, three feet high, over six hundred berries were counted, and on a single branch, eighty-eight. Yes, that is considerable. But in growing fruit for market, it does not answer to apply the rule of three to the problem, if one cane, three feet high, will produce six hundred berries, how many will an acre of them produce. It is said "figures do not lie," but they do though; if any one does not believe it, let him try to grow an acre of raspberries by the rule of three, and see how he will come out. However, this variety proposes to do better in this respect than many others, by reason of the great size of the berries; several were picked last summer that measured three inches in circumference. We all remember the amusing *equivoque* of the man who had gooseberries so large that many of them would weigh a pound; how many it took to weigh the pound he forgot to mention. But this is no equivocation, each berry measured three inches in circumference, not many it is true; and some of the canes yielded berries nearly every one of which would measure two and a half inches. And then in flavor it is thought to resemble closely that standard of raspberry excellence, Brinkle's

Orange; while the color is that bright-red so popular in the markets.

The plant has the habit of dropping its leaves early, like the Hudson River Antwerp, those at the tips of the canes remaining green, and continuing to grow until the advent of cold weather. It thrives best in northern exposures, and in cool, moist rich soils.

Chas. Downing, our greatest American authority on fruits, says of this berry, "I regard it as the largest, finest, best flavored, and most promising red raspberry that I have yet seen." William Parry, the great small fruit raiser of New Jersey, says, "I consider it superior to any other raspberry that I have seen; plant a remarkably strong, vigorous grower; fruit of mammoth size, measuring from two and a half to three inches around; bright red color, firm, excellent quality, and very productive."

Perhaps our readers would like to give this promising stranger a trial. It is not the custom of periodicals to advertise gratuitously; but as the object of this journal is to promote the dissemination of good fruit in our country, if any one wishes to procure plants of the Pride of the Hudson, they can get them from E. P. Roe, Cornwall-on-the-Hudson, Orange County, New York, the gentleman who first introduced it to public notice.

LETTUCE.

Who does not welcome with a cheerful satisfaction the first crisp heads of lettuce that grace our tables in early spring? If any there be among our readers who do not feel like rubbing their hands in gleeful complacency as the tender, succulent leaves, nicely folded over each other in delicate whiteness, are placed before them, they had better pass this page by; it will have no interest for them. But those who know how to enjoy a good head of lettuce after the long winter, may derive some pleasure by reading on, even if they do not find anything instructive to them in this short chapter about a very common, plain, simple, vegetable.

Those who wish to have nice early lettuce will sow the seed in this month of September, not later than the middle of the month. Having selected a bit of ground that is thoroughly drained, and in good heart; it should be spaded and pulverized in the usual manner, so as to be light and porous, and perfectly

friable, and the seed sown in drills. The extent of the sowing will depend upon the number of heads one wishes to winter over. In about a month the lettuce plants will be ready for transplanting into the beds in which they are to pass the winter.

The bed in which the plants are to pass the winter in this climate, is what gardeners term a cold frame. This bed should be of good, rich soil, well pulverized, located in some place sheltered—a spot sheltered by buildings, or tight board fence—from the cold, bleak winds of winter and early spring, yet exposed to the south, so that it may feel the first warm breath of the south wind, and enjoy all the sunlight as the days begin to lengthen. As a sash is usually about three feet wide and six long, a frame of boards should be set up on the bed by running two boards, set on edge, parallel to each other, and nearly three feet apart so that the sash may rest on them; and a board at the back ten or twelve inches wide, and another at the front seven or eight inches wide, to give the sash sufficient pitch to carry off the rain and catch to the best advantage the rays of the sun. These boards can be held in their places by nailing them to posts placed in the corners. In a sash of this size, five or six hundred lettuce plants can be safely wintered. That will be quite sufficient for the wants of a family of the average number; those who require more can increase the number of sashes.

The cold frame should be ready to receive the plants by the middle of October. By this time the lettuce plants will be ready for transplanting, and may be set in the frame two inches apart each way. Of course they will need a little attention to see that they do not suffer for want of water, or from weeds springing up among them. When winter approaches, they will need to be protected by covering with the sash at night, and when the weather becomes very cold it will some of the time be necessary to leave the sash on all day. The plants are sufficiently hardy, if properly treated, to endure twenty degrees of frost—that is, they will not perish if not exposed to a lower temperature than twelve degrees, Fahrenheit. But in order to enable them to endure that temperature safely, they should be abundantly aired on every mild day by lifting up the sash at the back, and keeping it tilted up while the weather will admit, and closing it only when necessary. On fine days the sash should be drawn off altogether, and the plants exposed as fully as possible, unless, indeed, the thermometer indicate too great a degree of cold. In this way the plants will be kept hardy and vigorous, able to endure the changes of temperature with no other covering than the sash, even though the thermometer outside the frame falls to zero. In those parts of the country where the cold is much below zero, it will be necessary to add a straw mat to the

covering of sash.

When the spring has opened, and the ground become quite settled and in condition for working, a bed should be prepared and the lettuce plants transplanted into it about twenty inches apart each way. Some fifty of them may be allowed to remain in the frame at a suitable distance apart, and by covering them with the sash at night, and when the weather is cold, forced, so as to make fine heads very much sooner than those in the open ground. If one wishes, a few frames may be prepared in the fall, and filled with leaves or any coarse litter that will prevent the soil in them from freezing, and when the weather becomes mild in the early spring the litter can be taken out, the soil forked over and enriched, and about fifty lettuce plants transplanted into each of these frames, covered with sash, and forced so as to be fit for use by the time the remaining plants can be set out in the open ground.

The variety of lettuce that seems to give the best satisfaction for early spring, is the one found in our seed stores under the name of Gardeners' Favorite. It not only forces well, making large, solid heads, but is exceedingly crisp and tender. For a late crop, we have found no variety that will stand the heat of summer better than Bruce's Nonpareil; besides, it is very tender, and heads well.

FRUIT SHIPPED IN 1877 FROM MEAFORD AND OWEN SOUND.

BY HIRAM BOND, MEAFORD.

Believing that it would be interesting to the numerous readers of the *CANADIAN HORTICULTURIST*, I have taken some pains to ascertain the amount of plums and apples shipped from two of our towns, during the season of 1877, respectively, Meaford and Owen Sound. There was shipped from Meaford, 5,000 boxes of plums, and 3,000 barrels of apples; Owen Sound, 3,327 boxes of plums, and 1,579 barrels of apples.

Your readers will see by this that although this is but a new county we are not altogether behind in horticulture. And I might say that trees are coming into the county by the thousands every year, and we hope before long to be one

of the first counties in the province for apples, plums, pears, cherries, grapes, &c., and in some localities peaches do well. Our prospects this year for apples and grapes are good, but plums, cherries, pears, &c., are light.

THE EARLY HARVEST AND RED ASTRACAN APPLES.

There is a strange fascination about new things, and when a new fruit or new flower is heralded, with considerable flourish of trumpets, great is the desire to see and to possess the stranger. This is quite natural; we all love variety, and the advent of a new fruit produces a flutter of pleasurable excitement among pomologists, quite akin to that produced by some new discovery in the scientific world. But while it is well to be interested in the dissemination and testing of new fruits, it is not well to forget those that have been long and thoroughly tried, and have stood the test. Designing and unscrupulous persons have often availed themselves, and still do and will avail themselves of this love of novelty to sell at high prices fruit trees of some new sort that is not as valuable or profitable as many that might be purchased at a much more moderate cost. To-day it shall be our pleasure to call attention to two of our best summer apples—varieties that have been long tried and have proved themselves to be well worthy of a place in every fruit garden or orchard.

The Early Harvest is of American origin, according to the authorities, but the writer has never seen any account setting forth either the time or place of its nativity. It has been very widely disseminated, and in the last report of the American Pomological Society is recommended for cultivation in thirty-three of the States and Provinces represented in that Association, extending from Nova Scotia to Texas, and from Maine to California.

According to our observation, this variety produces the finest fruit when planted in soils that abound in lime and are thoroughly drained. In rich alluvial soils, and especially if imperfectly drained, the fruit is frequently spotted and cracked, and deficient in flavor. But on the other hand, when the soil is suitable, the fruit is perfectly developed, fair, smooth, and of high flavor. The

tree is a moderate grower, comes into bearing early, and yields abundantly. The fruit is of medium size, light yellow with white flesh, juicy, and of a sprightly sub-acid flavor, ripening in the end of July and beginning of August. It is very valuable both for cooking and dessert, and worthy of a place in the smallest collection.

The Red Astracan was introduced into England from Sweden in 1816, and thence it has been brought to this continent, in no part of which is it more at home than in Canada. The tree is very hardy and will thrive vigorously in places where the Early Harvest would suffer from the cold. It receives the double star of great merit in Nova Scotia and Maine, Michigan and Wisconsin, and twenty-two other States, and that even as far south as Louisiana and Texas. It is reported as doing well in the Counties of Glengarry and Carleton, and may with safety be planted in very cold parts of our Province; yet we have heard of its failing to succeed in Arnprior, in the County of Renfrew.

It is one of our most handsome fruits, being of full medium size, of a dark crimson, covered with a light bloom. The flesh is white, crisp and juicy, of a rich acid flavor. It is an excellent cooking apple, and its showy color gives it great popularity in the markets. It begins to ripen before the middle of August, and continues to ripen its crop gradually, so that it lasts for some time.

These two varieties of summer apples may be safely recommended for general cultivation, and while the Red Astracan is the more hardy sort, and may be planted farther northward than the Early Harvest, yet the latter, on soils abounding in lime, is by no means a tender tree. Having these, the possessor may well be content on the score of early apples, and leave to others the pleasure, and the labor too, of testing new and untried substitutes.

THE ARCHIPPUS BUTTERFLY.

(*Danais Archippus.*)

The writer was recently examining one of the species of the milk-weed that is grown in our greenhouses, the *Asclepias Curassavica*, when to his surprise there were found several of the larvæ of the Archippus Butterfly feeding upon the leaves. The plants had been taken from the greenhouse and plunged in a

frame for the summer, and the female of this butterfly, in her wanderings about the grounds in search of milk-weed plants upon which to deposit her eggs, with a knowledge of botany far beyond that of many a gardener, had recognized this *A. Curassavica* as a species of milk-weed upon which the young larvæ could comfortably feed.

It is very interesting to observe the habits of insects. They seem to be endowed with some faculties that are not given to animals of a higher order. By what powers of perception was this butterfly enabled to tell that this plant, which she had never seen before, that cannot endure our climate but must be kept in a warm greenhouse, belonged to that genus of plants which were the proper food

of her young? We attain to such knowledge only by much study and comparison; she sailing past on careless wing, without having read the first lesson in botany, knows the foreigner to be a milk-weed, and stops to deposit her eggs upon it, that when the young larvæ hatch out they may have suitable food at hand.

The eggs she lays are very small, conical objects, about the twenty-fifth part of an inch long, white at first, but in two or three days turning yellow, and then just before the time of hatching they become a dull grey. If one of these eggs is examined with a microscope it is seen to be covered with a beautiful net-work of raised lines, the longitudinal lines appearing like ribs joined together by cross lines, and coming together at the apex. The lower part of the egg, by which it adheres to one of the leaf-ribs on the under side of the leaf, is flattened, giving the egg the appearance of a truncated cone, or of one of those conical bullets, which are used in breech-loading rifles. If the reader will look at fig. 11, *a*, he will see a magnified representation of the egg, showing the longitudinal ribs and cross lines; and at *c*, the egg of natural size, attached to the rib on the under side of the leaf, just as the butterfly places it.

In about a week after the butterfly has deposited the egg, there hatches from it a very small caterpillar, not more than the tenth of an inch long. It however grows very rapidly, and soon becomes too large for its jacket. But its jacket is very accommodating, and when the little fellow has got tired of it and wants a new one, the old one splits down the back, so that he can crawl out of it with a new jacket on, and looking as bright and gay as any new suit. And

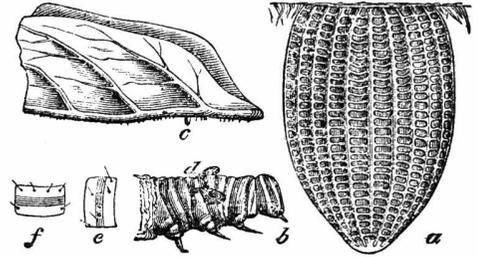


Fig. 11.

now it is a very pretty little creature, with transverse bands of black, yellow, and white, and a pair of black horns near the head, and another pair not quite so long near the other end. If it is examined with a microscope a few black hairs will be seen on each segment; these are shown at *e* and *f* in fig. 11.

The caterpillar seems to eat as though eating was the sole purpose of its life, and in consequence it increases in size very rapidly, so that it is obliged to crawl out of its skin twice more before it has attained its full size. This process of changing its coat is called moulting. Just before each moult it ceases to eat for a few hours, but as soon as that process is over, it falls-to again with greater voracity than ever. At each moult the black fleshy horns become longer. The new horns are nicely folded up under the skin, as can be seen at *d*, fig. 11, but soon grow straight after the old skin has been cast off.

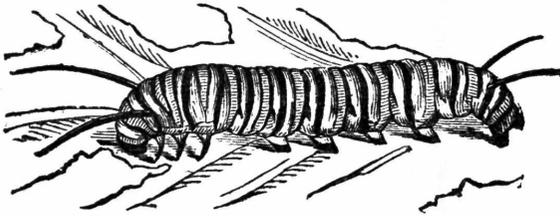


Fig. 12.

If any of our readers, the younger readers especially, have a desire to begin the study of entomology, they will find this insect a very interesting subject with which to make a beginning. The writer can well remember his excursions to a neighboring field

overgrown with milkweeds, when he had scarce attained to the dignity of pantaloons, in search of these beautiful larvæ. These he gathered in considerable numbers, confined them in a box, and watched with delighted interest the various metamorphoses they underwent. Those who have never witnessed them, if they have any taste for the study, will be surprised and greatly gratified to watch the changes undergone in the progress from the egg to the butterfly. The creature is of such a size, and so beautiful in all its stages, that there is no difficulty in seeing it at all times, and each step adds some new feature of interest.

When the caterpillar has attained its full size it will be about an inch and three quarters in length, and will have the appearance shown in fig. 12. The markings are very distinct. Each segment has a transverse band of black in the centre, bordered on each side with white, with a yellow band between. After it has reached this stage of its life it ceases to eat, and presently begins to roam about in search of a suitable place to undergo its next change. And a wonderful change it is; instead of a hungry creeping creature, eating voraciously night and day, it is about to fasten itself to a spot from which it can not move, and

pass into a condition in which it will have neither mouth to eat with, nor feet with which to walk. To all outward seeming it will have ceased to live; cold, and stiff, and motionless, it will manifest no sense of feeling whatever, nor any symptom of life.

Having found a place suitable for the metamorphose about to take place, which will always be the underside of some convenient support, the caterpillar proceeds to cover a considerable space, a diameter of three or four inches, with fine, white, silken threads, which it spins from its mouth, or from spinnarets placed at the mouth. These silken threads are laid on thicker and thicker towards the centre of the chosen spot, and at the centre a small pointed knob is raised of the same material. All this is done in order that the creature may suspend itself, head downwards, and hang securely by this silken knob without danger of being torn by its weight from its fastenings. Having completed all these arrangements, it proceeds to suspend itself by fastening the hooks on the pair of feet upon the last or anal segment into the silken knob, and when these are secured lets go its hold of the silken carpet with all the other feet and hangs suspended in mid-air, from the underside of some fence rail, or horizontal bar, or if in confinement, from the lid of the box or ceiling of the room.

What strange spell is upon the creature that it leaves its food, which a short time ago was all its desire, and travels off in search of some hidden retreat, some lonely nook? And why is it now travelling round and round within the circumference of a few inches upon the ceiling, laying down so carefully such a network of silken threads? Who has told it to lay them down increasing in thickness from the circumference to the centre? And now it has ceased to travel about, and has stationed itself with its head in the centre of its silken carpet; if you will watch it closely, you will see that it is yet spinning, and now and then it moves its head to the right and left, about as far as it can conveniently reach. As you look you see a little projection is being built up directly under its head, and that these motions to the right and left are made in the act of laying down some anchoring cables that shall fasten it securely to the web or carpet it has fastened upon the ceiling. What schoolmaster taught it that a cone is the strongest form in which it can arrange its gossamer threads? And who told it to go and hang itself thereby, suspended from its hindermost feet? Does it know the future that is before it; the life that lies beyond this gateway of seeming death? (*Continued in next No.*)

TRANSCRIBER NOTES

Misspelled words and printer errors have been corrected. Where multiple spellings occur, majority use has been employed.

Punctuation has been maintained except where obvious printer errors occur.

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