

fish.

are the
check the in-
overload it.
kadees, &c.,
s. Warblers
Blackbirds,
the surface of
l under the
ive duties to
it is an un-
swept from
t, vegetation
ld become so
withstand the
occasioned by
evastated the
thinning out
e hens, &c.,
d inestimable
and florist by
nd experience.
The little
e than com-
xious insects
ow has been
ar more good
insects he de-
s in the few
e of the farm-

dens:

than ordinary
us in many dis-
r considerably
s. Therefore,
the means by
weather must
rtificial water-
eeded; but in
ution affords in
watering pot.
do not every-
gements should
some practical
ing stream, as
ld be taken of
e this is imprac-
water; recourse
ying. Where,
ther convenient
must be sunk;
e country is no
wever, must not
ective garden is

a pump will be
the well into a
the level of the
a main pipe be
e centre of the
troughs may be
into tanks dis-
tter still, means
th a hose. This
watering, and, in
ation, as in the
watered whether
s, by the former
separately, and
head, an operation
neficial to vegeta-
ever water is given
always be of a
a few degrees of
be applied.

Eat.

ohn W. Robinson,
Society, on birds
interesting as any-
ject.
upon squirrels, rats
e farmer's friend.
takes a barnyard
in mice and moles.
t-flies and various
at is not destructive
great crested fly-
ds of the orchardist,
he bobolink eats the
at the South, rice.
the delicacy of its

in the spring lives

principally on cut-worms, wire-worms, caterpillars and the larvæ of noxious insects; later, they attack corn, and also eat the seeds of various plants. The purple grackle follows the plowman in the spring and destroys the larvæ of many noxious insects. The oriole feeds on beetles, curculio, pea curculio, and the long-snouted nut weevil, and, we may add in parenthesis, it is thoroughly detested by the fruit growers in Southern Illinois. The orchard oriole, a wren, is too little known and appreciated by orchardists. It devours hosts of worms and noxious insects, and is the most industrious bird the writer knows. The meadow lark lives principally on subterranean larvæ. The blue jay, this pert and showy bird, the writer considers mean, deceitful, tyrannical and sly, yet he is one of the few birds which eat the orchard caterpillar.

The butcher bird is one of the most industrious of the feathered tribe, and feeds on caterpillars, spiders, grasshoppers, &c. The cedar bird eats the canker worm. The white-breasted nut hatch, and American creeper, live on tree insects solely. Robins eat grubs, the larvæ of the May beetle, and cut-worms, and are especially destructive to the canker-worm and codling moth. The finch family includes about twenty varieties and subdivisions. They spread over large tracts of country in search of grubs, larvæ of insects and seeds. The American red start is a gay little fellow, flitting about from place to place after swarms of flies. The warblers are a great service to the farmer and horticulturist, for they destroy great multitudes of noxious insects.

House wrens, the patient, persevering, and yet brave little fellows, feed exclusively on caterpillars and insects. The black-capped titmouse eats the larvæ and cocoons of the codling moth.

Woodpeckers are the true laborers for man, their chief food being tree larvæ. The American or rain crow is a quiet bird, having a timid and retiring disposition. He guts the tent of every orchard caterpillar he once meets. The quail is one of the intermittent destroyers of the cinch bug and the striped pumpkin bug, and is one of the most valuable of birds to the farmer and horticulturist.

The essayist believed that farmers and horticulturists had not discriminated enough between friends and foes; and he noticed a number of cases where the indiscriminate slaughter of birds had worked evil to the products of the farm and garden.

Hollyhock Culture.

BY F. R. ELLIOTT, LANDSCAPE GARDENER AND HORTICULTURIST.

This flowering plant is very much neglected, being interspersed amongst other plants in shrubbery borders, but if planted in rows in rich, well drained soil, so as to form a background to a neat border, it would well repay the grower with a splendid display of bloom.

It is true, the hollyhocks of fifty years ago were not gems of beauty; tall, stalky, with only a single flower of medium size and no beauty, but now varieties have been originated of beauty in their habit of growth, and bearing double flowers of colors, from pure white to rich bright scarlet, set upon the sides or around the stems, of two to four feet in height, forming perfect pyramids. In the making of a large bouquet they come in perfectly as would the camellia or rose.

The hollyhock is propagated by cuttings, single eyes and seeds. The cuttings should be taken off the plants early in spring, and do best dibbled in light soil, in a frame where a slight bottom heat can be given. When well rotted take up carefully and plant them in six-inch pots, using one-half rich loam, one-fourth well decayed manure, and one-fourth leaf-mould with a little clean sand and fine charcoal, all well mixed together. Remove the plants to a cool frame for a short time to harden off previous to planting them out in the open ground. This mode of propagation has the advantage of affording a succession of blooms after the old plants have succumbed, and though the spikes are not so fine in the first season as those on old plants, they will fully equal them the next.

The next mode of propagation is by single eyes taken off in July and August, and inserted in light soil, in small pots well drained, and placed in a frame of leaves and fresh fine manure, so as to have the assistance of a little bottom heat, giving air as required.

When the eyes have made a little growth, and are sufficiently rooted, pot the young plants singly

in three inch pots, replace them in a close frame for a few weeks, and when the pots become full of roots another shift will be required, this time into six-inch pots, using soil as directed for cuttings. At this stage the plants may be placed in a cool pit or frame to protect them through the winter, admitting plenty of air on all favorable opportunities. They will be ready for the open ground in the spring, or they may be established in the ground now, if planted in well drained soil, and protected by some light mulch. Another method of propagation is by dividing the roots in early spring, or by seeds in a frame, or the open ground according to period of season. Where a particular style of growth, or color of flower is desired it is best to obtain a plant of each, rather than trust to the seed.

A New Way of Growing Strawberries.

There is no doubt but that in many parts of the country the "hill" or "stool" plan is a failure because of hard winters. Fruit is much larger and finer grown by the "stool" system (that is keeping the runners clipped off), and the reasons for this are that the ground gets better cultivated, and the plants, being worked upon all sides, make a luxuriant growth and bear in proportion. Now, if we can adopt some plan by which the soil can be better stirred all around the plants, we know fine fruit will be attained. Therefore we propose what we will style the "matted hill system," which is as follows:

Prepare the ground well, mark it 3 or 3½ feet each way, as for corn, and at each crossing of marker set a strawberry plant (or, if you have plenty of them, two in each place will be safer and better). Keep the cultivator running both ways, and quite often, as plants commence to run freely, and by doing this, and when cleaning the hills by hand, drawing stray plants and covering with earth, a matted hill will soon be formed 1½ to 2 feet across. We have noticed that where there were vacancies in matted rows, and clumps of plants here and there, that the fruit was much finer than where the matted rows of plants were continuous. Roots of strawberry plants run much further than what one would suppose, and where the ground is filled with them, the finest is not so fine as when they can have more room. We advise the trying of this plan by those who have plenty of land and horse help. After they are through bearing, a small plough, with a sharp knife or wheel, can be run through both ways, and hills ploughed down closely, ground levelled off, and cultivator and hoe run through as before.—*Fruit Recorder.*

The Raspberry Rust.

The red rust found upon the raspberry, blackberry, and strawberry leaves, on the under side, is a fungus known as *Aragma bulbosum*. When examined under the microscope the red matter is seen to consist of a number of foot-stalks bearing spore cells, ranged in a cylindrical method upon the foot-stalks, to the number of four, five, or seven. This fungus has a double condition of existence, being at one stage red in color and at another black; just as the related wheat rust, which is red, is only one condition of a plant which finds another in the state of smut, which is black. Unfortunately, the character of these rusts, of which there are over 1,000 distinct species or varieties, is not very well known, and a wide field for investigation is open. The best description of them is given in Prof. Cooke's *Microscopic Fungi*, an English work. The remedy is a preventive one, viz., to cut off the affected shoots and burn them, to drain the soil, and to apply fresh, dry-slacked lime to the leaves upon the under side when wet with dew. As the wild varieties are badly infested, it is rather questionable if we shall succeed in getting rid of the parasite.—*Ec.*

During the past few weeks we have noted growers very busily engaged in tying up their early cabbages in the market gardens at Fulham and elsewhere. The operation is simple, just, in fact, that adopted in the case of *Cos* lettuces. The succulent outer leaves are folded carefully around the heart or centre of the plant, and the whole is bound firmly with a withe or piece of bast. There are several good reasons for this practice. The centre being protected from the weather, the cabbages heart sooner by two or three weeks than they otherwise would do, and they are more easily handled in gathering and packing for market, and compact little cabbages are always preferable to loose ones, which, moreover, are apt to get broken in gathering.—*English Garden.*

Effects of Smoke on Trees and Flowers.

The frequent failure of trees planted in town is to be attributed to other causes than the injurious effects of smoke. The plain fact that some trees thrive while others fail, though all are alike exposed to the same influence, is strong proof that where failures do occur they must be due to some other cause. The *Pall Mall Gazette* offers the following very pertinent remarks on this subject:—

"The planting of trees in towns has of late years become a common practice, but many failures occur, owing to the trees selected not being adapted to the soil and climate in which they are expected to flourish. Some valuable remarks on this subject were made by Mr. R. H. Alcock, F. L. S., at a recent meeting of the Manchester Field Naturalists' and Archaeologists' Society at Handforth. Mr. Alcock, who had paid particular attention to tree-planting in towns for many years, gave the result of experiments he has made in planting trees in close proximity to his mill in the outskirts of the town of Bury, and said that the tendency to attribute every failure in plant cultivation in towns to smoke involves a fallacy which requires to be guarded against. He finds that rhododendrons, for instance, grow very well in his neighborhood, regardless of smoke or soil, although they will not grow at all in the purer air of Evesham, in Worcestershire. Again, the plane tree, which flourishes in Paris and London, will not grow at Bury. Poplars make rapid growth at that place but soon die. Limes, notwithstanding the smoky atmosphere, grow well in Bury and in Manchester. Among other trees which appear to flourish in smoke are the wych elm, sycamore, birch, horse-chestnut, and Turkey oak. Mr. Alcock has grown three or four plants of the ash for about four years, and they seem to do well. The beech also grows well, and he has not lost a single tree during the last 25 years. Many shrubby plants will also grow well. The holly or the hawthorn will grow anywhere. His experience of the laurel is adverse. The laburnum, on the other hand, does not mind the smoke. On the whole the effect of a smoky atmosphere on some trees seems to be favourable rather than otherwise; and certainly flowers appear to flourish in London, to judge by the brilliant colours of the balcony and window gardens now relieving its dinginess.

A Remedy for Ivy Poison.

At this season of the year many people become poisoned either by handling or exposure to poison ivy. Generally all sorts of remedies are tried with little immediate effect, and the poison is slowly thrown off by the process of nature. There is, however, a remedy which is vouched for by a correspondent of an agricultural paper as a sure and speedy cure. The agent is common lime, a small piece of which should be dissolved in water, and the parts affected bathed with the water. This remedy is simple and should be widely known.

Linseed Oil for Pear Blight.

The *American Rural Home* says:—A year ago we gave some accounts of experiments by D. P. Wescott, of this city, in treating blighted pear trees with linseed oil. He had in the latter part of the previous year washed several pear trees which had commenced blighting with raw linseed oil, and the spread of the blight seemed to have been arrested, and the trees had then put forth their foliage, which appeared perfectly healthy.

We felt a little anxious to know whether those trees entirely recovered, or whether in course of last season they succumbed. So yesterday, June 1st, we visited the grounds again and were pleased to find his trees looking perfectly healthy and making a vigorous growth of new wood. You can see upon the trunks, and on some of the branches, the dead, blackened exterior bark, showing the effects of the blight two years since, but not a leaf indicates that any remnant of the disease remains. We took a knife, and cutting through the dead bark, found the inner bark green and sound. We think that these results are sufficient to warrant further trial of the remedy, as it is easily applied and seems to do the trees no injury.

Let verbena stalks lie down on the ground, if you wish to propagate for fall blooming. Hold them to the earth with hair-pins, split sticks or bits of wire.