OUR COLOURED ILLUSTRATIONS.

GATHERING MUSHROOMS AND FUNGI.

"Up with the lark to gather mushrooms!" We suppose they would be just as good if gathered at noon or afternoon; but there is a popular notion that unless secured

When the grass is wet with dew
In the morning early,

these delicious morsels melt away. We incline to think that it is only another instance of the early bird picking up the worm, and that there is no special charm in the early mushroom. Still in common with all fungi the mushroom, Agaricus campestris, grows very rapidly, and a meadow which in the evening may present no signs of mushrooms may in the morning yield a good basket full. Our common edible mushroom is by no means the most attractive in appearance of its family, though we are much inclined to say it is by far the best in its properties as a dainty dish. So many mistakes have of late occurred though uninstructed people eating fungi which they believed to be wholesome, that we are disposed to dissuade from all experiments, and leave it to accomplished and practised observers only to make dishes of untried and unknown fungi in which our woods abound. It is singular, however, that the only fungus amongst many which are received as articles of diet in Italy, which is systematically rejected and thrown into the Tiber, is our own common mushroom, Agaricus campestris. The group of collectors in our Illustration must be tolerably sure of their crop, and practice and observation soon discover any error in the selection. The peculiar form, the delicate pink gills, and the delicious scent of a true mushroom are not easily to be mistaken. It is, however, the Pratiola of the Italians. "May he die of a pratiola!" is the worst wish that an Italian can express for his enemy; so we learn in what poor esteem our general favourite is held by the most extensive fungi eaters in Europe. For the true enjoyment of a mushroom much will depend on the cooking; and in this, as in most culinary matters, our French neighbours, who eat a greater variety of fungi than we do, far excel us. It is essential that mushrooms be freshly gathered, and we can testify to the following being a successful mode of cookery:—"Get a number of young mushrooms freshly gathered, cut them in pieces, wash in cold water, and dry them in a cloth. Put them in a pan with butter, parsley, salt, and pepper, and place them over a brisk fire. When ready, add cream and yolk of egg to bind them together." A more economical method is to peel the mushrooms, remove the stems, place them in a stew-pan with fresh butter, and let them stew over a brisk fire; when the butter is melted, squeeze in the juice of a lemon; after a little while add salt, pepper, spice, and a spoonful of water in which a clove of garlic has been soaked for half an hour, let them stew all together for about an hour, then add the yolk of an egg to bind them. Pour your stew on some small crusts of bread previously fried in butter." But the ways of cooking mushrooms are infinite, and happy is the housekeeper who can reckon on a good supply of fresh meadow mushrooms, for we far prefer those growing in the open fields to the products of the artificial mushroom bed or stove. Our field-mushroom gatherers will doubtless find some that are coarser, larger, and older than those which are to be sent to table as dainties. These will make excellent ketchup, and therefore must not be despised. No rule can be given to the inexperienced as to the discrimination of wholesome from poisonous species of fungi. If the odour be ammoniacal and the taste pungent, the fungus should certainly not be meddled with, and the same if the colour be verdigris or any shade of black or purple and the plant be growing in a damp or shady place. The wonderful variety of form and colour in fungi is as great as the diverse situations in which they are found. Open fields and meadows, woods, among the moss and crimp brown leaves of a former season, or where the newly-fallen foliage of the present year lies thick and wet, rotting vegetable débris, dead sticks and stumps, and decaying organic refuse of every kind are inhabited by the different species, it being the peculiar characteristic of the fungi to seat themselves on dead and decomposing matters, which at the same time they largely assist to remove from view. The fungi are in fact a kind of natural scavengers. Directly anything begins to decay, either animal or vegetable, fungi in some shape begin to consume it; whenever we see fungi growing in crowds we may be assured that there is some substance underneath from which life has departed, if it be not absolutely rotten and offensive. Hence their curious importance in the general economy of nature. The duty may appear mean, but it is not meanly performed. The dead thing, whatever it be, is decked while it decomposes with a strange and anomalous beauty, "Decay's effacing fingers" are adorned, as it were, with jewels. Coincident with their life and history are also many pleasant ideas that detach the mind from the idea of death and produce thoughts almost poetical. Such is the production of the green circles often seen upon soft and grassy hills and downs, and occasionally in quiet fields, and known as "fairy rings." These rings originate with a fungus of the mushroom type, commencing with a single individual, which scatters its spores centrifugally, or from the centre. The fungi that arise from these spores in propagating move further away again, the next crop does the same, and so do the crops that succeed, every new generation enlarging the area, but not a single individual moving inwards (just as we see the little wave circles spread across the surface of still water when disturbed); so that in course of time the ring of fungi is many feet, or perhaps yards, in diameter. The fungi themselves are of course only of temporary duration. When they decay, especially after a fall of rain, the ring of turf they occupied is observed to be greener, and is called a "fairy ring." It is doubtless owing to the fungi concentrating large quantities of nutritive matter, which on their decay becomes deposited in the soil.

It is hardly necessary to say that the fungi do not possess leaves, flowers, proper stems, or roots. The common mushroom is the type of their organisation. The vegetating portion, or thallus, is called "mycelium," and is embedded under the surface of the ground, a substance on which they grow diffusing itself like a whitish mass of filaments, and known to all gardeners in the case of the mushroom as "spawn." Our beautiful drawing of Agaricus muscarius, known also as Amanita muscaria—Fly agaric—deserves especial notice from the curious use to which it is put in some countries. It is very poisonous, and has been employed as a fly poison—hence its common name. Its poisonous qualities are not modified in any climate. The Czar Alexis lost his life by it, and yet it has been affirmed that "in Kamschatka it is used as an article of food." In Siberia it supplies the inhabitants with the means of intoxication similar to that produced by the "haschiseh" and "majoon" of the East. The fungi are collected during the summer months and dried. When used, the fungus is steeped in the juice of the whortleberry, which acquires the intoxicating properties of strong wine. Sometimes the fungus is rolled up into a bolus and swallowed whole, and the intoxicating effects, which are said to be not only cheap but pleasant, follow in about an hour after taking it. Curious descriptions have been written on the peculiar conditions it produces. At first the individual who partakes of it is cheerful, afterwards excited, giddy, and drunk, and sometimes loses entire consciousness. The natural inclinations become stimulated. The dancer executes a pas d'extravagance, the musician indulges in a song, the chatterer divulges all his secrets, the orator harangues, and everything becomes exaggerated. The history of a debauch brought about by indulgence in this exciting substance reveals much of the possible degradation of human nature; and Mr. Cooke, in his "Seven Sisters of Sleep" gives us full details.

We have in another plate examples of the beautiful Agaricus laccatus, which is often to be found in the woods of this country, but is extremely variable in size and colour. Sometimes it is of a bright amethyst purple, as in our example, often of a reddish brown or grey colour, and occasionally yellow. It may be well to say that our Illustrations of Fungi have been chosen for their beauty of form and colour, and not from any supposed possibility of rendering them useful as articles of diet. Were they not as perishable as they are, we should find amongst the fungi almost as many resources for the colours of a bouquet as in the denizens of a flower-garden. Here we have the lovely little Agaricus epiphyllus, which from its name we may almost recognise as a parasite upon trees, and growing almost in the air; the curious golden yellow Clavaria viscosa, looking almost like a piece of vegetable coral. More curious still is Clavaria vermiculata, looking like a bundle of little candles. It is found on lawns and in short pastures, and is said by experimenters to be perfectly wholesome, and if tied together in little bundles like asparagus, and, cooked with butter, parsely, onion, pepper, and salt, to be very good eating. Roques states that at Vienna Clavaria is fricaseed with butter and sweet basil.

In our next plate we have a fine specimen of Coprinus atramentarius. It is very commonly found about old stumps of trees, and also in gardens, flourishing on the naked soil. It is

found in clusters, and is rapidly deliquescent, so that while standing, or more speedily when gathered, it melts away, drop by drop, into a fluid like ink—indeed, it is often used as such The lovely-looking rose-coloured fungus Russula emetica, is one of the most poisonous of its tribe, and fortunately is not very common with us. Although commonly red, it sometimes fades into pink, or deepens into purple. Many stories have been told of disasters arising from the inadvertent indulgence in this emetic agaric, as it is called, only a small piece of which is sufficient to produce very unpleasant results. Cantharellus cornucopeoides, which is more curious than beautiful, belongs to the same genus as the beautiful little yellow Chantarelle, which having once been seen is sure to be recognised, and once tasted, to be remembered. It smells like ripe apricots, and is delicious if properly cooked, as we have tasted it in France and Italy. The pretty white Agaricus nutans and the lowly Peziza humosa complete our illustration. This last fungus is found growing close to the ground, and is one of a large genus whose species are exceedingly variable in size, some being microscopically minute. On damp walls, decayed wood, sticks, rushes, dead leaves, or even gravel walks, we find specimens of the minute and beautiful Pezizas. In the early spring on old dead branches in woods and copses who has not seen the lovely crimson cups of Peziza coccinea, or Dryad's cup, a circular basin of the richest carmine about an inch and a half in diameter? Fries, the great German writer on fungi, attributes his first incitement to the study of this family of plants to his delight in seeing the crimson peziza in its native woods.

POTATO-PLANTING AND PEA-PICKING.

So accustomed are we all at this time of day to the daily and unstinted use of the potato in our ordinary diet that we feel as if we could almost as easily give up wheat and other grain as this pleasant and wholesome root, and we are apt to forget that not very long ago it was unknown in England, and even as late as the end of the seventeenth century writers on gardening treated it with indifference and regarded it as the "food of poor people." In 1584 Queen Elizabeth, of excellent memory, granted a patent "for discovering and planting new countries not possessed by Christians," and under this sanction some ships equipped by Sir Walter Raleigh sailed with him to America. Thomas Hurriott, who accompanied this expedition, sent to England the description of a plant called by the natives of North America openawk. Sir Walter Raleigh, with courtier-like gallantry, called this land Virginia, and here the curious plant was found. Gerarde in his "Herbal" describes the plant, and figures it as having "round roots hanging on ropes, and being good for food either boiled or roasted." Even earlier than Sir Walter Raleigh's expedition to North America, the same plant was known in Quito, South America, under the name of "Papas," which the Spaniards corrupted into battata, and the Portuguese into ba ta ta, to which potato is a very near approach. It seems that Sir Walter Raleigh, on his return from America, planted some of these potatoes on his estate in Youghal, near Cork, in Ireland, and that this easily-grown food became popular in Ireland before it was adopted in England. It is related that it was accidently introduced into England in consequence of the wreck of a vessel on the coast of Lancashire which had a quantity on board. For a long time the potato was cultivated only in gardens and regarded as a delicacy. Gerarde recommends it as the basis of delicate conserves and restorative sweetmeats, with the assurance that its "flatulent effects may be infallibly corrected by having the roots "eaten sopped in wine," adding "to give them the greater grace in eating they should be boiled with prunes." Not until after a considerable time did this valuable plant become the palatable, productive, and farinaceous article of food and cultivation it now is. It appears that in 1725 the few potato plants then existing in gardens about Edinburgh were left in the same ground from year to year as recommended by Evelyn, a few tubers were perhaps removed for use in the autumn, and the parent plants well covered with litter to save them from the winter's frost. The botanist recognises the potato as Solanum tuberosum, belonging to the same natural order of plants as the poisonous deadly nightshade (Atropa belladonna) and the henbane (Hyoscyamus niger). It may be propagated both by its seed and tubers, which latter we eat as potatoes; the eyes or specks we cut out are the buds whence grow the young tubers. The most generally adopted mode of propagation is by the tubers, though new varieties are procured by using the seed, which may be mixed, and so improve the kinds and qualities of the tubers. The shoots coming from the tubers and layers of the stalks may also be used. Planting in the open ground is best done in October and November and may be continued till the end of March Our Illustration shows us that the ground must first be well dug, and that the sets or pieces of the potato or tuber to be planted must each have one or more little eyes or roots in it. Some gardeners recommend the largest potato to be planted whole, others that they be sliced into pieces containing several eyes. Many device are suggested to secure early potato crops, and long treatises have been written on potato-growing. Anyone can plant potatoes if the ground be previously prepared and dug, and we cannot even object to the employment of female labour in this branch of agriculture. With her apron full of slices of the tuber nicely prepared she proceeds to insert them in rows with the dibble, an instrument which is invaluable for the purpose, for early crops twelve inches apart each way, and for the main ones eighteen inches. The sets should be put in about six inches beneath the surface. Afterwards the earth should be raked or struck in with the spade and not trampled upon, but planted as sufficient is dug for receiving a row, for the looser the soil the less does frost penetrate and the more readily does superfluous moisture escape. As soon as the plants come up and can well be distinguished they should be freed from weeds, and of the early crops the earth drawn round each plant so as to form a cup as a shelter from the cold winds, which are their chief enemies in the early part of the year; but the main crops should not be earthed up, as it lessens their productiveness. This year we are reminded that our crops are not always successful, and that the potato is subject to a sort of epidemic disease which is very fatal to its health and life. Very sad tales are told of the great losses to growers of potato crops owing to this visitation. For eleven years we have not had so bad a time. The disease first became generally apparent in 1845, when the whole crop in Ireland, the mainstay of the people's food, was lost, and a famine ensued. Since that time the disease has constantly reappeared, blackening the leaves before they become ripe and rotting the tubers in the ground. Royal commissions have been formed to investigate the nature of this disease, and scientific men are yet discussing it.

We are told on good authority that thoroughly-dried potatoes will always produce a good crop free from disease. Such is the positive assertion of Mr. Bollman, a professor of agriculture in Russia. In a pamphlet written by this gentleman it is asserted as an unquestionable fact that mere drying, if conducted at a sufficiently high temperature and continued long enough, is a complete antidote to the disease. This fact Mr. Bollman proved by a number of experiments, and it has been corroborated by many other agriculturists; but is not, as far as we know, frequently adopted in these islands, where so much loss and suffering is occasioned by a failure of the potato crop, we suppose because, in agriculture as in sanitary matters and many other things, we have yet to learn that "prevention is better than cure." Few persons are probably aware of the quantity of potatoes used in England, America, and the Continent, in the manufacture of starch, arrowroot, and tapioca. A starch manufactory in Maine, U.S., grinds from 16,000 to 24,000 bushels of potatoes annually, and makes 140,000 lb. to 240,000 lb. of starch, which finds a ready market at four dollars per 100 lb.

Dr. Hooker, of the Royal Gardens, Kew, has lately been reviving a suggestion made by the late Professor Henslow, when the potato disease first invaded the counties of Suffolk and Norfolk. It appears that the disease does not affect the nutritive properties of the starch of the potato, and his plan is to grate the potato into water; the starch will then fall to the bottom, and the diseased matter, woody fibre, &c., remain suspended in it. The plan is to drain off the water after several washings, and to dry the starch for use as arrowroot, for puddings or cakes, or mixed with flour as bread. We fear, however, this device will be but a very sorry substitute for "a good mealy potato," and we turn to our next Illustration to assist us out of the difficulty and recollect that even dried peas and beans are no bad food when potatoes or green vegetables cannot be had. Here, however, we have fresh green peas lading the stems and filling the basket. Pisum sativum is the botanist's name for this delicious vegetable, and, were we not reminded of dainty dishes by the sight of its pretty delicate green tendrils and leaves, and its pure white blossoms, we should be forced to admire the graceful appearance of the common garden pea. The varieties of peas are innumerable; but

(*Continued on page* 16.)

LEIGHTON, BROS

GATHERING MUSHROOMS.