

"Is it so valuable, then?" demanded the gentleman, with a smile.

"To me, most precious," she replied. "No wealth could purchase it."

"In that case you had better confide it to my care," observed Franion.

Seeing that she hesitated, he added, "By the rules of the poorhouse, the master is entitled to take it from you."

"For what purpose?"

"To see if it contains valuables or money: with me it will be safe till you are well enough to quit this place."

"Is there no way of preventing his examining it?"

"None."

Bella Harding looked earnestly in his face, and then placed the satchet in the hands of the doctor.

"It is more than life," she whispered, "that I confide to you—the future of my child—the honour of his mother!"

"Heaven reward me," exclaimed the kind-hearted man, "as it shall be religiously kept."

Great was the disappointment of Gilbert when Humphrey Skillet informed him of the failure of their plan. Still he rewarded his agent, feeling that he might require his services again, and, having done so, resolved to set out for London.

He quitted Wicksal, after arranging a correspondence with the master, and without learning the important fact that Captain Gaston, the man who held him in his power, was the husband of two wives.

Had he done so, he would have presented himself before his taskmaster with very different feelings.

(To be continued.)

The Amateur Gardener.

BY GEORGE GLENNY.

As it is in the power of almost everybody to grow mushrooms, even if they have not a foot of garden ground, we have no doubt some will try, when they find the means so simple.

We will suppose they have nothing better than a cellar floor, and that perfectly dark. This place would appear to be as hopeless as anything could well be, yet we should hardly desire a better opportunity.

Horse-droppings which boys can gather from the public road, say two or three barrows full, may be laid in a sloping direction against the wall, reaching three feet on the floor, and two up the wall. This is to be pressed pretty close, but only by patting it with the spade; it must not be trodden. When it is done, poke a stick in the middle to reach to the corner, and leave it in.

In a day or two pull out the stick, and feel if it be warm; if you find it very hot, you must pull your fabric to pieces, turn it over two or three times, and build it again as before, leaving a trial-stick in as before.

When you find it heat to about the temperature of new milk, it is ready to, what is called, spawn; that is, to plant with lumps of spawn about as large as an egg, or about as much as, if soft, you could form into one, nine inches apart all over. Tuck these lumps of spawn into the dung, but not deeper than the surface; then cover it all over with an inch of damp mould, which must be patted smooth; and, lastly, put on a covering of straw, say, six inches thick.

There is a little uncertainty which experience alone will get over: for instance, if the bed gets too hot, the spawn will burn; if too cold, it will lay dormant for a long time; if too wet, it will rot; and if too dry, it will not work.

But we have known a bed so made yield nothing for months, and then, all at once, crop abundantly. The greatest misfortune is when we get hold of bad spawn, and the only certain way to avoid this is to deal with a respectable nurseryman.

Mushroom spawn is sold in cakes, and for use it is broken to pieces of about two ounces weight. This has been called the size of an egg, instead of the weight; but it really matters but little about the size.

Some persons put up shelves in the cellar, eighteen inches to two feet wide, with a front six inches high, and fill this with the droppings, sloping up the back like a bank, and then spawn it as recommended for the other.

But mushroom spawn may be put in a large flower-pot full of droppings, one lump just under the surface, and a little mould at top. This, put into a warm place, has produced many.

In fact, the only conditions required to grow mushrooms are, that the droppings shall be well worked and divided, and allowed to heat to the temperature of new milk; that the spawn shall be good; that the soil shall cover it an inch; and that it shall be warmly covered with straw or long litter.

These conditions observed, success is certain. When the bed gets dry, sprinkle it with warm water, such as you can bear your hand in. Upon a larger scale it may be grown in an outhouse, or under a shed, or under the stage of a greenhouse, so that the covering be effective.

It may appear strange that all this fuss should be required to grow a thing that springs up in the meadows and by the road-side without any provision being made for it.

But the seeds of the mushroom are floated about in the air an impalpable powder, and all that alights upon places congenial to their growth germinate. But spawn is not the seed: it is the roots which run and spread in all directions, like the roots of mint, and, when once they grow, they spread, whether in a field or a cellar.

The German Language

CLEARLY TAUGHT AND QUICKLY LEARNT.

LESSON XXVIII.

In German the adjectives and verbs offer comparatively little difficulty, but there is no denying that, in order to express oneself idiomatically, and to understand the language exactly, the adverbs and prepositions must be carefully studied and thoroughly understood in their various bearings. A slight variation in the use of these parts of speech alters the meaning of a sentence.

The preposition *aus*, "out of," is sometimes used in the same sense as we use it. Sometimes it stands for our preposition "from," and at others it represents "of," when followed by the materials of which things are made. We shall give some examples of the use of this preposition *aus*, and also of *ausser*; in English, "out of," "outside of."

THE USE OF THE PREPOSITIONS.

He is coming out of church.	Er kommt aus der Kirche.
This step has been taken from necessity.	Mann hat diesen Schritt aus Noth gethan.
He took the money out of the purse.	Er nahm Geld aus dem Beutel.
Many people are extravagant from vanity.	Manche Menschen sind aus Eitelkeit sehr schwenderisch.
He will give no money, out of avarice.	Aus Geizwill er keinen Geld geben.
For good reasons, I never go.	Aus guten Gründen gehe ich nie.
No one but myself was present.	Niemand außer mir war zugegen.
We learn many things better from experience than from books.	Vieles lernen wir besser aus Erfahrung als aus Büchern.
When I heard the news I was beside myself for joy.	Als ich die Nachricht erhielt, war ich außer mir vor Freude.
The house of my brother is outside the walls.	Das Haus meines Bruders steht außer den Mauern.

In the dialogues you will see plenty of illustrations of the grammatical rules; mind you do not overlook them.

FAMILIAR DIALOGUE.

Look at your watch, if you please.	Sehen Sie gefälligst nach Ihrer Uhr.
To whom does this watch belong?	Wem gehört jene Uhr?
It is not mine, it is my brother's.	Es ist die meinige nicht, es ist die meines Bruders.
Does it go well?	Geht sie gut?

I believe it is not wound up.

Wind it up.

Pray sit down.

Stop to supper with us.

Supper is on the table.

Take a little fish.

Tell the servant to bring us a little cold meat.

Take a slice.

This meat is very good.

Sie ist nicht aufgezogen, glaube ich.

Ziehen Sie sie auf.

Bitte, setzen Sie sich.

Weiben Sie zum

Abendessen bei uns.

Das Abendessen ist aufgetragen.

Essen Sie etwas Fisch.

Sagen Sie dem Bedienten, uns ein wenig kaltes Fleisch zu bringen.

Essen Sie ein Stück davon.

Dieses Fleisch ist sehr gut.

THE LITTLE MECHANICS.

HOW TO MAKE A FISHING-ROD.

"PAPA, papa, you promised that Fred and I should have fishing-rods and tackle, and that you would teach us something of angling. The summer has come at last, and it will be so delightful in the hot weather to sit under a shady tree, and fish in a cool stream; and, if we can bring home some fish for mamma, we shall be quite happy. Harry Gibson has just got a beautiful new rod and line; may not Fred and I have one, papa?"

"I shall be glad, my boy, for you and your brother to ramble by the river to gain health and pleasure in angling; but I wish to make the pleasure greater, and, at the same time, more useful to you, than it would be if I purchased for you a rod and tackle. When I was a boy, my pleasure in any amusement or employment in which I engaged, was always doubled if I had made everything required for myself. My bat and ball, my bow and arrows, my kite or balloon, I fashioned for myself, and I felt a pride and pleasure in them, which boys who have everything purchased ready-made can never know. I wish Fred and you to try your hands at making a fishing-rod."

"But, papa, how shall we manage? We know nothing about it. We shall never succeed!"

"That remark, my boy, convinces me of the importance of the attempt. You will learn something more than I at first thought of—you will learn what your remark shows you require, *self-reliance*; and a readiness, I hope, in applying your faculties to any emergency that may arise in life. The work must be your own; but I will tell you what to do. The attempt to make the simplest toy will enable you to acquire some skill in the constructive arts. If you persevere, we will attempt, by-and-by, greater things, as you gain skill; and I scarcely can promise you whether you will find more pleasure or profit in your accomplishments."

"If you will instruct us, dear papa, and sometimes help us, it will indeed be delightful," exclaimed both Fred and his brother Arthur together. "Please let us begin with the fishing-rod. Of what shall we make it?"

"Fishing-rods are made of a great variety of materials; bamboo cane, hickory, ash, lancewood, hazel, &c. The simplest will be the best for your purpose. The qualities required in a rod are, that it should be tolerably light, and yet sufficiently strong; tapering gently from the butt-end to be held in the hand, to the top, to which the line is to be fastened, so as to be flexible and elastic. The lengths vary, depending upon the purpose for which they are intended, and the persons who are to use them; some are not more than eight or nine feet long, and some as much as eighteen feet."

"But, papa, bamboo canes grow in India, and hickory in America; so we cannot get these, and, I fear, we could not cut the ash and lancewood. Our rod will have to be made of hazel; but how can we get it long enough?"

"You are quite right; hazel will be the most suitable for your purpose. It would not often be easy for you to obtain a hazel stick sufficiently long, straight, and tapering in one piece. But fishing-rods are generally composed of several pieces. The largest and best are often in eight or nine joints, of about two feet or a little more in length; each joint being fitted with a metal socket, into which the next joint fits. Perhaps, for your first attempt in angling, a hazel as long, straight, and tapering as you can

and in your next walk in the forest, will answer for small fish. To secure a more perfect rod, however, you must procure two or three hazels, of such thickness that, when joined end to end, they will form a gradually tapering rod. These will have to be joined together."

"Yes, papa, but that is just the difficulty; how shall we join them?"

"Patience, my boy! that is what I was just about to describe. They must be joined by the method termed *splicing*. The two ends to be joined are each to be cut, with a common pocket-knife such as Arthur possesses, so as to form a tapering end like this drawing—



These tapered ends are to be fitted together, and bound with waxed silk or fine twine. Perhaps the best thing you can have for the purpose is the thread used by shoemakers, several strands of which being twisted together, are then to be well waxed with shoemaker's wax, which, being a compound of pitch, resin, and oil, not only gives the twine so made great strength, but preserves it from being worn out or rotted readily. In binding the ends together, give the cord a few twists round, to hold the pieces in their places, thus—



Then proceed to wrap it regularly and carefully, binding as tight as possible, the coils being quite close together. When the joints are well covered, take the first end towards which you have been approaching as you have wrapped your cord over the first few wide coils, and lay it so as to make a loop, and bind the end which you have all along been wrapping round about half a dozen more times round, keeping under it the end of the loop. Now put the end of the wrapping string through the loop, and draw it tight, and you will secure a neat, firm, and durable joint. You must do this yourself; but I will give you another little drawing to show exactly the method of finishing the joint I have described. Here it is—



"O, thank you, papa: I am sure we can manage that. But a rod so joined must always be kept so; it cannot be taken apart without a great deal of trouble."

"It is not intended to be taken apart. Another time I will tell you how you may make one with joints, which can be easily put together and taken to pieces; but it will tax your ingenuity more than this one. You now only require to fasten a piece of cord, whip cord will be best, in the form of a loop, to the small end of your rod, to which the line, by means of another loop, can be readily attached, and your rod is complete for simple purposes. This loop of whip-cord is to be bound on with a piece of waxed silk, in a manner something similar to that used in binding your splice. I think you have now sufficient to exercise all your ingenuity for the present. Another week you shall try some additions to your rod."

(To be continued.)

GARIBALDI.

CHAPTER II.

Rome in arms for the defence of her recovered liberties was a spectacle to interest the civilised world. Yet, strange to say, England, the country which ought to have sympathised most with the struggles of a long-oppressed, ill-governed people, beheld the landing of the French army at Civita Vecchia with indifference. The Marquis of Lansdowne declared, in the House of Lords, that the Government, of which he had the honour to be a member, saw nothing to disprove in the expedition against the ancient capital of the world. We can hardly believe it possible that the Cabinet were blinded by the proclamation published by General Oudinot on landing his troops. It might, nay, did, deceive the authorities of the city he took possession of—but statesmen, grey in diplomacy, familiar with its feints and subtleties, must have judged it at its proper value.

As a proof that Louis Napoleon dared not at the time avow his real purpose, we subjoin the following extracts from it:—

"France does not arrogate to herself the right

to regulate the interests which belong to the Roman people, and extend to the whole Christian world; she only considers that by her position she is called upon to facilitate the establishment of a government equally removed from the abuses which have arisen from the generosity of Pio Nono, and the anarchy which has succeeded him.

"The flag I have hoisted," adds the general, "is that of peace, order, conciliation, and true liberty, and I invite the co-operation of all who love their country to assist in the sacred task."

Mazzini and his brother triumvirs were not deceived by these artful professions; they perfectly comprehended both Oudinot and his mission. The former, with that regard for his personal safety for which he is so remarkable, was inclined to hesitate, till Garibaldi, who had been received with transport by the leaders of the liberal party and heads of the Republic, insisted upon taking measures for the defence of Rome. The honourable task was assigned to him: its difficulty will be better understood by a slight sketch of its present state.

Notwithstanding the destroying ravages of violence and time, the city still possesses a singular attraction to all who visit it—a something which startles and soothes them like the vision of a vanished world. Gigantic constructions attributed to the Tarquins, down to the comparatively modern palace of the Braschi, still exist. Each century has marked with an indelible impress the soil raised by its ruins. Rome may not improperly be compared to some vast cemetery where sleep a long series of ages, each one resting beneath its funeral stone, more or less mutilated by the finger of Time; and the traveller, as he kneels to read the inscription, finding but too frequently the characters effaced, departs full of sadness on his way.

It is the story so often repeated of man and his destiny, a struggle—ashes!

The charm of the Eternal City consists not in its religious and classical associations merely; those who are insensible to such influences find other sympathies; for there is presented to the philosopher a solemn picture of humanity—all which represents its grandeur and its weakness, its power and misery. In its thousand ruins a wondrous poetry exists, and their contrast with a nature full of life and vigour, something which fills the mind with a vague immensity, it penetrates as if the tomb were already passed—that inexhaustible existence the Creator has expanded throughout the universe.

The part of Rome most inhabited occupies the ancient Campus Martius, which, divided into narrow and irregular streets, offers a sad picture of poverty and desolation, despite the various edifices which encumber rather than adorn it.

In this quarter of the city one sees the modern age such as it was before the middle classes—now so powerful in Europe—placed themselves between the people and the aristocracy; the houses gloomy, narrow, and strongly barred; churches and convents, belonging to no style of architecture, erected at a period when Catholicism had stripped herself of the magnificent vestment with which the age had decorated her. Nothing in them recalls to mind the ancient cathedrals with their symbolic forms—their transepts and aisles figuring the emblem of the Christian faith; their lofty towers or graceful pinnacles rising to heaven like ardent aspirations; no half-veiled day; no distant echoes; but, instead of these, heavy domes, costly marbles, rich gilding, and statues, frequently of rare merit, form an *ensemble* which, however it may strike the imagination, fails to satisfy the heart.

Grecian architecture is as decidedly the architecture of Paganism as the Gothic is of Christianity.

Nearly deserted at the present day, on account of the exaggerated fears which the Romans entertain of the *aria cattiva*, or bad air, ancient Rome contains nearly all the space occupied by the seven hills. The Citorio alone forms part of the modern city. A scanty population are spread over its vast surface, dividing it, as it were, into a number of villages, by the cultivated lands which intersect them; by princely villas, gardens, and superb ruins, such as the Baths of Diocletian, those of Caracalla and Titus, the Coliseum, the Palace of the Emperors on Palatine Hill, the arch of Constantine, the Column of Trajan; and a thousand relics of the magnificence of that regal people, and of the Caesars who dethroned them.

Rome is more like an open country than a fortified city; its walls are comparatively useless for purposes of defence, and the area they inclose so vast as to be out of all proportion with the number of its inhabitants.

The energies of the extraordinary man to whom

the defence of the infant Republic was intrusted, were not directed to the drilling of troops, and preparation for the coming contest alone—his voice was heard in the council of the Triumvirate, where it prevailed over Mazzini's, and by his advice the prefect of the province of Civita Vecchia published the following reply to the dispatch of General Oudinot:—

"General, I have read your letter, in which you inform me that the French Government, desirous of terminating the situation under which the Roman people have been groaning for some time past, and to facilitate the establishment of a state of affairs far different from the anarchy which has lately prevailed, has resolved to send an army to Civita Vecchia.

"As a representative of the Roman republic, I protest against the word *anarchy*. Such an insult has not been deserved by a people who, in the exercise of their undoubted right, have constituted themselves into a government of order and morality; and I must declare to you that France is ill informed of the events which have taken place here, as well as of our conduct under circumstances of extraordinary difficulty.

"Force may do much in this world, but I am unwilling to believe that Republican France will employ its soldiers to overthrow a government established under auspices and upon principles similar to her own.

"Europe, which now beholds us, will judge your acts; and History will decide whether our political annals justify the accusation of anarchy. When you have ascertained the truth, I am convinced you will feel assured that the Republic is supported by an immense majority of the people."

Nothing could be more moderate, yet at the same time more dignified, than this reply to the insolent aggression of France. Neither Garibaldi nor his associates imagined for a moment that it would arrest the march of the invaders. Oudinot was bound by his instructions; the support of the priestly party was of too much importance to the furtherance of Napoleon's plans to permit their being trifled with, and the struggle became inevitable.

Mazzini, who is a capital hand at proclamations—the greater part of his life, in fact, has been passed in writing them, which may account for his never having risked it with the sword—issued the following address to the citizens:—

"Romans! a foreign intervention menaces the sacred soil of the republic. A corps of French soldiers has landed at Civita Vecchia. Whatever their instructions may be, the salvation of the principle unanimously adopted by the people, the right of nations, the honour of the Roman name, command the government to resist. And resist it will.

"It is important that the Romans should prove to France and the world, that they are a nation of men who have dictated laws and given civilisation to Europe. It is important History should not say, 'The Romans wished, but knew not how to be free!' It is important the French people should learn from our resistance, our declaration and prayers, our irrevocable determination to be no longer subject to the abhorred Government we have overthrown.

"Let the people look to these things; they will be betrayed and Rome dishonoured, if a contrary course should be taken. The Assembly is sitting in permanence. The Triumvirate will do its duty and fulfil whatever may befall its own mandate of order—solemn, calm, concentrated energy. The Government will punish inexorably every attempt that may be made to plunge the country into anarchy, or to stir up troubles to the Republic. Citizens, organise and group yourselves around us! God and the people! The justice of our cause must triumph."

Meanwhile, the greatest excitement prevailed in Rome, where it was reported, and confidently believed, that Pio Nono had intrusted his person to the protection of the French army; and the citizens began to suspect, not without cause, perhaps, the courage of Mazzini, and compare his high-sounding promises and inflated addresses with the quiet, persevering daring of Garibaldi, who, modest as he was brave, continued to occupy himself with the defences of the city. Their confidence in the hero was not misplaced.

Oudinot had already taken up a menacing position in the neighbourhood of Rome, when he dispatched several of his officers to demand admission, as a friend, to protect the city against the Austrians—to ascertain what form of government the people desired, and effect, if possible, a reconciliation between them and the Pontiff.

To do them justice, the heads of the Republic rejected these insidious proposals with scorn, and the general prepared to enforce them by arms.

Scarcely had the decision of the Triumvirate

The German Language

CLEARLY TAUGHT AND QUICKLY LEARNT.

LESSON XXXI.

WE observed in the last lesson that the proper selection of the case, after the preposition, was one of the difficulties of the German language. Prepositions may govern the genitive, dative, or accusative case, but the nominative never. Those among our German pupils who are less thoroughly grounded in grammar than others, or who have lost sight of the explanations about cases given in the first German lessons, may be glad to be reminded of the effect the difference of case has on the articles. It influences demonstrative pronouns in much the same manner. We give the articles in the genitive, dative, and accusative cases.

DEFINITE ARTICLE.

Singular.			Plural.
Mas.	Fem.	Neut.	
G. des	der	des.	der, of the
D. dem	der	dem.	dem, to the
A. den	die	das.	die, the.

INDEFINITE ARTICLE.

Singular.		
Masc.	Fem.	Neut.
G. eines	einer	eines, of a
D. einem	einer	einem, to a
A. einen	eine	eint, a.

Observe that when *auf* is used with the accusative, a motion from one place to another is implied. Ex. *Ich lege es auf den Tisch*, "I put it on the table. *Er geht um drei auf die Börse*, "He goes to the Exchange at three."

Auf sometimes means "after." Ex. *Auf Kält und Wind folget Sonnenschein*, "After cold and wind follows sunshine."

Auf also stands for a future period alluded to. Thus: *Er hat seine Abreise auf morgen festgesetzt*, "He has fixed his departure for to-morrow."

In some senses, *auf* represents "for." Ex. *Mein Bruder leihet mir täglich sein Pferd auf eine Stunde*, "My brother lends me every day his horse for an hour."

Auf signifies "in consequence of," "according to." *Auf seinen Befehl*, "In consequence of his orders."

The dative case is used with the verbs *bestehen*, "to insist upon," and *beruhen*, "to rest upon;" but *auf warten*, "to wait for," *vertrauen*, "to confide in," and *sich verlassen*, "to rely upon," require the accusative. Ex. *Sie müssen auf mich warten*, "You must wait for me." *Wir vertrauen auf ihn*, "We confide in him." *Ich verlasse mich auf sein Versprechen*, "I rely upon his promise."

DIALOGUE ON BUYING AND SELLING.

What do you require, sir?	Was befehlen Sie, mein Herr?
I want paper.	Ich brauche Papier.
How do you sell it?	Wie theuer verkaufen Sie es?
That seems to me rather dear.	Das scheint mir ein wenig theuer.
I also want wafers and pens.	Ich brauche auch Oblaten und Federn.
Steel pens, you mean.	Stahlfedern meinen Sie.
Give me also some paper.	Geben Sie mir auch Papier.
Well, I'll take a quire of this.	Nun ich nehme ein Buch von diesem.
Do you not require sealing wax?	Bedürfen Sie kein Siegelack?

GIVE YOUR WIVES A REST.—As soon as genial weather comes and abides with you, you who are, from the nature of your occupations, compelled to reside in towns, should let your wives have a chance of running into the country with the little ones, where they will be free from the wearying cares of housekeeping. Let them visit the old homestead (if Providence vouchsafe unto them such a blessed retreat), and place their bright-eyed babies on their mothers' bosoms—one of the dearest wishes of every young wife's heart. The wives of professional men and men of business need such seasons of refreshment and repose; and if they have them not, broken constitutions, premature old age, and untimely graves are the almost certain results. Therefore, give your wives a rest.

The Amateur Gardener.

BY GEORGE GLENNY.

A FEW words upon the plants which are most useful to cover arbours or verandahs, or to ornament the fronts of houses, may be acceptable, now that they may be seen in perfection in a stroll of a mile.

The principal of our favourites are climbing roses, honeysuckles, wisteria sinensis, jasmines, clematises, and passion flower, of the flowering kind. The Virginian creeper, the foliage of which turns scarlet in autumn, and the ivy, which is always green, have no flower worth mentioning.

Roses of almost every colour may be had to climb—that is, varieties that will grow so fast, and make such long shoots, that they may be trained to go any height, and almost cover any space.

When these have been made to cover as much as they are required, the only management necessary is to cut back all the side-shoots every year to two or three eyes, because they bloom in the new growth, and each eye sends forth its shoot.

Honeysuckles may, in the same way, be trained and fastened where they are to remain, and, year after year, be cut back to a spur of two or three eyes, for it is also in the young wood that these bloom.

Wisteria sinensis is that beautiful climber which is, in the early spring, covered with lilac blooms, of the form of the laburnum flowers, hanging in graceful racemes all over the plant.

Of the jasmine there are three conspicuous varieties. The old-fashioned white jasmine, known to everybody by its delicacy and fragrance; *jasminum revolutum*, a very fine yellow, with bright green foliage; and *jasminum nudiflorum*, which flowers in the winter and spring before any foliage makes its appearance.

The white is a rapid grower, and when it has reached the height and dimensions it is destined to cover, it will grow out from the wall or house, and all the branches hang gracefully. *Jasminum revolutum* is not so hardy as the white, but quite as handsome, yet will not so soon grow tall as the other; and *jasminum nudiflorum* has all its stems covered with golden yellow before any other flowers make their appearance.

The clematis boasts many varieties; the most familiar is the sweet-scented one that blooms in autumn, and is the wildest grower of all climbing plants. The clematis *sibboldii* has a large white flower with a purple disc; and clematis *azurea grandiflora* is a splendid purple star, as large and as handsome as a passion flower.

The passion flower is a fast growing plant, covering a good deal of space in a season; and although the individual flower only lasts a day, there is such a quantity, that there is always enough out to be interesting.

The Virginian creeper will cover a house in a season, and as autumn approaches, the leaves turn to a brilliant scarlet, and remain so till they fall.

With regard to ivy, the flowers are nothing to boast of; but it is an evergreen always bright and close; and once in its place, it is lasting; no pruning required. It is always cheerful; it looks warm in winter, and cool in summer.

"A rare old plant is the ivy green."

All these are to be had well established in pots. They require a fair depth of good soil to root in, and may be turned out without disturbing the ball of earth. They require at once releasing from the supports they have had, and fastening to the wall, or house, or trellice, as the case may be.

Of the annual climbers, the most conspicuous are *convolvulus major*, and *tropeolum canariensis*. These have merely to be sown where they are to grow, in the spring of the year, or, as they may be flowered earlier by pot culture, both are frequently kept in stock, to be turned out any part of the summer.

Now look well to the pots out of doors, for twenty-four hours' neglect of watering will do mischief. Do not fancy that a recent shower has watered them, for the most bushy will have thrown the water outside the pots, which may be perfectly dry inside.

Plants in the dwelling-house must be kept clean, and the surface of the soil in the pot stirred every week or fortnight, but not low enough to bruise the fibres of the root.

In the kitchen-garden take up potatoes as wanted, until they are ripe, and then take the whole crop up. Ripeness is indicated when the skin will not rub off. Plant out all sorts of greens for autumn and winter, also lettuces, and hoe between all the crops.

THE LITTLE MECHANIC.—No II.

MORE OF RODS AND TACKLE.

"OUR rod is completed, dear papa; but neither Arthur nor I quite understand the use of the loop we have attached, as you told us, to the small end of it. Why could we not tie the line to the rod, papa, instead of to the loop?"

"Because the simplest plan is best, and it would be troublesome to attach the line to the rod itself each time you wish to use it, and then remove it when you are done. By having a similar loop on the end of the line to that you have attached to the rod, you can fasten and unfasten your line in a minute. To join them, hold the loop on your rod in your left hand, and that on your line in your right hand; now put the loop in your left hand through the loop of your line which is in the other hand; then put the end of the line through the loop on the rod; pull it all the way through, and draw it tight. You will thus form a knot which cannot possibly slip, and, whilst it is thus strong and firm, can be very easily undone again. The different parts of your line may be joined in a similar manner."

"Thank you, papa; I now see the advantage. You were going to tell us, papa, at some time how to make a rod of which we could undo the joints easily, so as to pack it into small compass. The rod we have already made I wish to give to Arthur. May I try to make mine with joints, that I can take apart at pleasure?"

"I am quite willing that you should try, my boy; but I am afraid you will find it a more difficult task than the one you have finished. Your joints, in this case, must consist of metal sockets attached to one piece of the rod, into which the next piece must fit tightly."

"What kind of metal, papa? I am afraid you cannot manage that."

"The simplest joint of this kind that you can use, will consist of a piece of tinned iron, or tin, as it is commonly called, bent round into a tube to fit your rod at the end to be joined; a piece of sheet zinc might answer the same purpose. The edges of the tube must be soldered together to keep it firm, and, when completed, it may be painted the colour of the rod, for the double purpose of preserving it from the action of the atmosphere and improving its appearance. To make the joint neater, and to make it fit tight, the tube should be made a little smaller than that part of the rod to which it is to be attached, which may then be carefully pared away sufficiently with your pocket-knife until it fits properly."

"Oh, papa; but I fear that sounds very difficult. How are we to manage the soldering?"

"That sounds more difficult, my boy, than it really is. It does require some care and some tools which, at present, you do not possess—a 'soldering-iron,' as it is called, for instance; but as it may be useful in other experiments, I may, perhaps, allow you to purchase one."

"But how shall I use it, papa?"

"I am going to describe that to you now. Soldering, as you perhaps know, is the method of joining two metals together, by means of another which is melted between the parts to be joined. It is necessary, therefore, that the solder should always be more fusible—that is, melt with less heat, than the metals to be joined. That most commonly used, and called 'soft solder,' consists of a mixture of tin and lead, generally two parts of the former to one of the latter. We might easily make this solder by melting the metals in their proper proportions in an iron spoon over the kitchen fire. It would be better, however, to buy it in rods ready prepared."

"Where shall we procure it, papa?"

"At the plumber's or whitesmith's, where, also, you may probably procure a small 'soldering-iron.' To solder the edges of your joint together, the soldering-iron must be made hot—not quite red-hot—in the fire. The edges to be joined having been in the meantime scraped quite clean, and a little powdered resin laid along them, a small piece of the solder is then placed on the powdered resin, and the heated soldering-iron applied; the solder will at once melt, and may, with the point of the soldering-iron, be spread along the edges, and thus join them firmly together. You must now scrape neatly away all the superfluous metal that is not needed to give strength to the joint, and your work is completed."

"Oh, thank you, papa. That does not sound so difficult as you describe it. But how shall we fasten the metal tube to the rod?"

"I have told you that you will make the tube a little less in diameter than that part of the rod to which it is to be attached. The largest tube will have to fit the smallest end of the piece which forms the butt-end of your rod. The tube will be about

four or five inches long; and the rod, having been pared with your knife so as to fit in tightly, is fixed in the tube about two inches deep, leaving a similar length projecting, so as to form a socket into which to insert the next joint. The tube may be made fast to the first-mentioned piece by punching it with a bradawl, making a slight indentation of the metal enter the wood."

"Now I understand you, papa, and I think this would complete our second rod, when we had made a sufficient number of tubes of the right size."

"Yes, with one exception; for some kinds of fishing you will require a 'reel' or 'winch,' which will be attached to the butt-end of your rod, for the purpose of containing an extra amount of running-line, when you wish to 'play your fish.' Large fish, when they are hooked, frequently dart off with considerable speed and force, and it is prudent to give them plenty of line, and allow them to do so, otherwise your line would probably be broken. The reel will be best purchased at a shop where fishing-tackle is sold, as you cannot make one that will be nearly so efficient. You may, if you choose, try one or two substitutes. With a little ingenuity, a common cotton reel, of sufficiently large size, might be made to serve. But as one important use of the reel is the facility of rapidly lengthening or shortening the line, it is desirable to be able to wind or unwind with the greatest ease and celerity. I think, therefore, it will be desirable to purchase one. They are made of brass, and are bound to the butt-end of the rod with similar cord to that you used in your splicing."

"I think now, papa, we have learnt enough to make our rod sufficiently useful and complete. You promised to tell us something more of the tackle, the floats, the lines, &c."

"Perhaps another time I will do so; but I think you have enough to remember for the present."

(To be continued.)

POPULAR DELUSIONS.

ALCHEMY.

THE transmutation of base metals into gold was a delusion which held possession of the popular mind for centuries. Those who professed to know the secret were described as alchemists, and they rivalled each other in their ridiculous pretensions. Most of us recollect the nursery oddity, which stated that "Stephen John Afternoon, milk-pan weaver, made a glass pair of stairs out of a pig-stye parlour door;" and the pretensions of the alchemists were not in any degree less absurd, nor was the jargon which they employed less ridiculous in its nature. That credulous people should be deceived; that those who were greedy of gain should speculate in a scheme which promised to enrich them beyond the dream of avarice, is not surprising; all that seems really singular about it is, that some of the alchemists unquestionably believed in the ultimate success of their profitless pursuit, and that so many should be rash enough to profess to do that which was certain to invite investigation, and so likely to involve them in utter ruin. A writer, as recently as 1801, in treating gravely of the subject of alchemy, says:—"Geber is good—Artemus is better, but Flammel is best of all—and better still than these is the instructions" (not very excellent English, by the way), "which those who follow shall never want gold." A secret so important, so freely communicated to the whole world, ought to have completed an entire revolution in the affairs of public and private life. No one would have cared for the diggings; the gold-fields of California and Australia would have offered their auriferous treasures in vain; no chancellor of the exchequer would have needed to "cudgel his brains" on the solemn question of the budget; no one would have cared to venture on rash speculations in the City or on the course; no one would have been tempted to fraudulent dealings; and nobody in the wide world need have been short of money. The secret of how to make a brass candlestick or copper warming-pan into golden ingots, might have made us look for something better than gold as a test of respectability and position, and brains might have beaten bullion; but whatever might have been the result, many men would have given their ears to know the secret. Well, the secret has been disclosed for these sixty years, and the world is not a pound the better for it.

But the secret—what is the secret? asks the reader, impatient, of course, to begin at once on his coal-scuttle and fire-irons. Know then, that, according to the modern alchemists, the expense "thou must be at will be but a trifle." "All

the instruments necessary are but three—viz., a crucible, an egg philosophical, and a retort with its receiver. "Put your fine gold in weight about five pennyweights, fill it up, put it into your philosophical egg, pour upon it twice the weight of the best Hungarian mercury, close up the egg with an hermetic seal, put it for three months in horse-dung; take it out at the end of that time, and see what kind of form thy gold and mercury has assumed; take it out, pour on it half of its weight of good spirit of sal-ammoniac, set them in a pot full of sand over the fire in the retort, let them distil into a pure essence, add to one part of this mercury two parts of water of life, put them into thy philosophical egg, set them in horse-dung for another three months; then take them out and see what thou hast—a pure ethereal essence, which is living gold," and which was said to possess the extraordinary power of miraculously turning all baser metals into the most precious and durable gold!

Truly this was a very plain practical receipt, but—and "there's the rub"—one had to ascertain, first of all, what was meant by the water of life, and from whence it was to be obtained. To learn this secret was not by any means an easy matter; once known, the alchemists professed you would have the philosopher's stone, and not only be able to make gold, but explode disease and prolong life to an indefinite period, and become at once as rich as Croesus, and as deathless as the fabled Wandering Jew. But where was that philosopher's stone to be found? The alchemists themselves fell to logger-heads about it, and denounced each other as impostors.

The professors of alchemy maintained that the antediluvians knew all about the philosopher's stone. They pretended that Shem or Chem, the son of Noah, was an adept in the art, and traced the words *chemistry* and *alchemy* to his name. It is asserted that the art was practised by the Chinese 2,000 years before the Christian era. It certainly was professed very soon after the commencement of that era in the eastern world, and the prefix *al* to the word *chemistry* marks its connection with Arabia.

Geber, who lived in the eighth century, maintained that all metals laboured under disease which was to be cured only by pure gold; that the same valuable substance would heal every mortal malady; and that the secret of propagating gold, just as a plant might be propagated, was an arrangement of nature discoverable by man. He wrote 500 treatises to prove the truth of his assertions; and the style of these compositions justifies Dr. Johnson's etymology of the word *glibberish*, which, he says, was originally applied to the language of Geber and his tribe.

Raymond Lully—born at Majorca, 1235—ranked high as an alchemist. It is asserted that he made gold, while residing in the Tower of London, from iron, pewter, lead, and mercury, to the amount of six millions; but, unfortunately for the story, it is very doubtful whether he ever was in England, and more than probable that the origin of the statement of his enriching the Treasury by so large an amount, is traceable to the tradition that he was the first financier who suggested a tax upon wool, which brought in the sum named to the exchequer. But that Lully professed to make gold is beyond dispute; so did his friend Roger Bacon; so did Pope John XXII; it was the chimera of the old philosophers, all of whom dabbled in it more or less.

The believers in alchemy were confirmed in their faith of this golden dream when Nicholas Flamel, in the fourteenth century, a man who had all his life appeared as if in deep poverty, died and bequeathed an immense fortune for the foundation of churches and hospitals. He was known to have conducted numerous experiments for the discovery of the philosopher's stone, and when his wealth was suddenly disclosed, it was universally declared to be the result of alchemy. But a little investigation would have shown that Nicholas was a miser of the closest sort, and that he made money, not by magic spell or transmutation, but by conjuring and usury, cent. per cent. on moneys lent or debts collected!

The fifteenth century was remarkably productive of alchemists. Basil Valentine, a monk of Erfurt, in Germany, particularly distinguished himself in this art. He was of opinion that the metals are compounds of salt, sulphur, and mercury, and that the philosopher's stone was composed of the same ingredients. He wrote twenty-one books on the process of transmutation. These he placed in an inclosure within the stonework of one of the pillars of the church, and after his death they were supposed to be lost; but a thunderbolt shattered the pillar, and the manuscripts were discovered—the

pillar, on the veracious authority of Valentine's disciples, closing up again of its own accord!

It is unnecessary to pursue the histories of these old alchemists. They believed—from Hermes down to Woulfe, which includes a range of near four thousand years—all baser metals might be turned to gold.

Some of the alchemists were honest seekers after truth. They were deceived, by their limited range of observation and crude experiments, into the belief that it was possible to do that the utter impracticability of which is patent now-a-days to the meanest capacity. We should do injustice to some of these men to write them all down as rogues and tricksters, when want of knowledge was the sole cause of their deception. The labour and pains, watchings, vexations, and frettings, and especially the costs those unfortunate men plunged into, bear evidence of their sincerity. Prepossessed with the conceit of becoming rich on a sudden, they closed their ears against any arguments employed to disabuse them, and so sank themselves into the lowest degree of poverty. One of these men declared before he died that "if he had a mortal enemy, whom he desired to make miserable, he would advise him, above all things, to give himself up to the study and practice of alchemy."

The majority of the alchemists, however, were no better than swindlers. These were the men who were patronised and applauded. They resorted to every species of artifice to deceive their employers, and to reap a golden harvest for themselves. They put oxide of gold at the bottom of the crucible, carefully concealed from view, but ready to be discovered at any moment the alchemist thought proper. They made a hole in a piece of charcoal, filled it with powdered gold, and threw it on the baser metals to be transmuted, so that real gold might be found in the crucible. They put an amalgam of gold into the crucible with tin or lead, and thus exhibited grains of gold to the eyes of their credulous dupes. They used small pieces of wood hollowed at the end, and filled with gold filings, which in burning left the metal in the crucible. They whitened gold with mercury, and made it pass for tin, so that when it was melted, and the gold appeared, they might declare it was obtained by transmutation. They taxed their ingenuity to discover—not the philosopher's stone, but the best methods of deceiving their avaricious but simple-minded believers. The appearance of a few grains of gold gave an air of credibility to the impostor's pretensions, and induced the speculator to advance money, to sell his plate, to mortgage his lands, to plunge himself into difficulties, and to find himself, at last, a ruined and disappointed man.

In future articles we shall refer to charms and amulets, signs and omens, and stories of the apparitions of the dead.

GARIBALDI.

CHAPTER V.

HOWEVER they may have sneered at his talent as a commander, his greatest enemies have never cast a doubt upon the personal courage of Louis Napoleon. At the battle of Magenta, which lasted two days, the 3rd and 4th of June, he gave not only brilliant proofs of it, but of coolness and presence of mind, qualities equally necessary for a successful general.

From the best and most reliable accounts, it would appear that the French and Sardinian forces having effected their passage across the Ticino at Turbigo, took the enemy by surprise, and gained an important position, which was confided to the imperial guard, under the command of the Emperor himself. No sooner were the Austrians aware of this, than they made a tremendous attack upon it. The French, incited by the presence of their sovereign, who, whatever may be the real feelings of his subjects towards him, is decidedly the idol of the army, performed prodigies of valour, holding out against enormous odds until General MacMahon brought up his division, and drove them back with immense slaughter.

Neither our space nor design permits us to enter into the details of these important days. There is little doubt, however, that the sword of the gallant Irishman retrieved the error of his master and the fortunes of the day. Louis Napoleon, yielding to one to the impulse of his feelings, generally so completely under control, created his deliverer Duke of Magenta and Maréchal of France, as a recompense for this important service.

"You have saved the army," he exclaimed, as he embraced him on the field of battle. Like most