histories, and one or two standard volumes of fiction, besides some text-books on natural science, of which Henry was very fond. With these we employed our winter evenings, and a new world seemed to open to Undine's inquiring mind, which gained fresh impetus under Henry's instruction. It was a pretty picture to see her sitting on one of the skin rugs at Henry's feet, looking up into his face with her dark eager eyes, drinking in every word, whilst Spana laid with his big shaggy head resting on her knees.

Another of our treasures was a goodly supply of lucifer matches, which so elated me the young folks declared if at any time they wanted to make me especially happy they should present me with a lucifer match; but, my readers, what an improvement it seemed to me upon the primitive system of sparks struck from a flint and the tinder box I had been obliged to establish after my matches were exhausted, though I did succeed in making wooden ones with their tips dipped in sulphur in ancient style.

(*To be continued.*)

COLOURED LEAVES: HOW TO PRINT THEM.

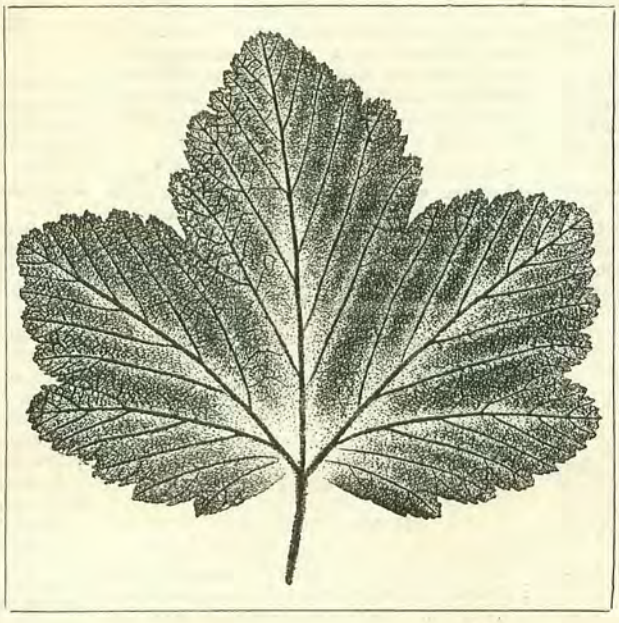
DOUBTLESS all our readers have noticed the beautiful and remarkable leaves found on plants which they meet with in their country rambles. To some the wish may have come that a method, other than that of the cumbrous herbarium, could be adopted by which the beauties or noteworthy features could be preserved. Such a way we propose in this short article to show them.

The same endless variety prevails in the shape, texture, veining, and outlines of leaves, as is manifested in all the other works of the Creator. Each plant has its own characteristic leaf. It has some peculiarity of form, of edge of surface, or of veining which is worthy of notice. Who does not know the irregularly notched and toothed leaf of the dandelion, which doubtless suggested the French name *dent de lion*, of which the English is a corruption, each division of the apparently ragged edge running backwards towards the crown of the root? The ivy, with its five strongly-marked lobes, and the narrow leaf of the willow, which by no forcing is compared to the shape of a lance-head, are each characteristic shapes. Indeed, the leaf of the latter tree is so well known and typical that it is used in the description of phenomena occurring in the atmosphere of the sun. The maple-tree has leaves richly decorative in form, apparently made to the hand of the designer; and no less suggestive are the rounded lobes and sinuous edge of the oak-leaf. The convolvulus has leaves of the shape of an arrow-head, the nasturtium that of a shield, and so of hundreds of plants of which some peculiarity of form is worthy of preservation.

How variously the margins of leaves are toothed or cut into! Thus the nettles, dead and stinging, have obvious saw-like teeth ranging from stalk to tip. So have rose-leaves; but in them the teeth become more attenuated, almost prickly. The vine-leaf has large, well-pronounced teeth, but each tooth is cut into by smaller teeth. The modest, creeping ground-ivy has leaves with rounded notches; the equally humble creeping jenny, with leaves of the same general form, has an unbroken margin. The leaves of the willow and buckthorn have the tiniest teeth possible, while the holly develops its divisions into unmistakable thorns.

It is very charming to notice the gradual changes which occur in the shape of the leaves of a given plant in the various stages of its growth. Commencing in the bud or the seedling with a very simple form, as each leaf is produced it takes a more and more pronounced shape until the special character peculiar to the plant under study is produced. Then frequently another, or the converse change takes place as the leaf approaches the flower-head or flower, until once again the scale-like form is produced.

The sacred writer tells us that "The grass" (or the leaf) "withereth, and the flower thereof fadeth away," which is universally true, but it is worthy of note that they do not all wither so soon as each other. A flower may last for a week; it oftener lasts only a day. Very few plants develop their blooms for more than a month, and yet fewer still enrich the earth with blooms the whole year round. With the greatest number the flowering season is over in a few weeks, sometimes days. A tolerably experienced botanist frequently finds that he has miscalculated the bloom-time of a plant he is searching for. An accident of the season, or of the place of growth, has hastened or retarded development by a few days, and the opportunity is lost.



This difficulty is not felt when leaves are the object of study. We watch them unfolding in the spring, and rejoice in the living green during the summer, to marvel at the glowing colours in the autumn. But there they are the greater part of the year ready to our hand. Again, many plants the Creator has endowed with mantles of green the whole year through, put on the new before they cast off the old.

A remarkable feature about leaves is the fact that while a plant bears vast masses of foliage, each member of which bears the same character, yet no two are alike in all particulars. An elm tree, for instance, when full grown, bears about two millions of leaves. Each leaf is unequally sided, has a margin toothed, and each large tooth again notched. Each leaf leaves the stem at about the same angle; the veins of the leaf also leave the principal vein at about the same angle; all the leaves are about the same size, and yet two leaves cannot be found alike in every respect.

For some of the reasons stated above, the leaf is of considerable value in discovering the family to which the particular plant under notice belongs. Sometimes the character of the leaf is so marked as to enable the student to discover the order, or even the genus, to which it should be referred. The parts of a plant which are most frequently examined with a view to classification are the stem, the flowers, and the seed. However, sometimes the stem is undeveloped; the leaves and the flowers grow from the crown of the root; or we miss the time of blooming, and cannot secure the flowers; or, again, it is impossible to obtain the seed in its ripened state, for many plants have a habit of dispersing their seed by the breaking up of the seed-vessel with elastic force as the seed approaches ripeness. But the leaves can almost always be obtained.

Most students of the harmless and gentle science of botany are aware that the leaves of the three principal classes of plants are distinctly different in the way in which the veins are distributed. Exogens, such as the lilac, currant, apple and pear, have the veins of the leaves distributed like the meshes of a net. Grasses, palms, lilies, and orchids, which belong to the class of endogens, have the veins running side by side. The ferns, which belong to the class of cryptogams, disclose fronds in which the veins are continuously forking into two branches, a feature clearly seen in the maidenhair fern.

With a view to enable our readers to secure permanent impressions of leaves by very simple, easy, and accessible means, we offer the following description of a process of nature printing in colour or colours from the leaf itself.

The leaves to work upon may be obtained from any hedgerow, wood, field, garden, or smallest patch of ground in which a tree or flower grows. To begin. Select a few well-grown leaves, neither large nor small. Let them be such as, when laid upon a flat surface, do not fold upon themselves or overlap in parts. To keep them fresh and firm, put them in an earthenware or tin vessel, and cover the lid or a damp cloth over all.

Next, secure a sheet of foolscap paper; also some cartridge or other white paper (it should not have a glossy face) on which to take impressions. Cut the latter into sizes conveniently to take the leaves, and yet have a margin all round. It will be found convenient to have this paper doubled upon itself, so that the upper and lower surfaces of the leaves can be taken at the same time.

Obtain one, or more, tubes of oil colours, a little sweet oil to dilute the paint, a quarter of a yard of Nainsook muslin, the finer the quality the better, a handful of cotton wool (fine), and a yard of twine—an equipment neither costly nor troublesome. Tie the cotton wool, within two folds of the muslin, into a firm, round, hard mass; you will then have the dabber. With this dabber spread the paint, diluted with oil, very thinly and

evenly indeed, upon the foolscap paper. There must not be any obvious amount of paint upon either the paper or the dabber, or the result will be blotchy.

You are now ready to take an impression. Place a leaf upon a sheet of clean paper, and more or less forcibly, as the leaf is tender or hard, smooth, rough, or downy, strike it with the dabber. When a sufficient quantity of paint has been evenly transferred to the face or back of the leaf (or both surfaces) put it by means of the stalk between two layers of the cartridge paper, and rub with the thumb or forefinger, when an impression, soft, beautiful, clear, sharp cut, showing every vein and other peculiarity of the leaf, according to the care with which the foregoing directions have been followed, will be the result.

The pressure used must be according to the softness and delicacy of the texture of the leaf; care should be exercised, so that all parts of the surface receive equal pressure.

The colour employed may be any the fair experimenter pleases. The particular shade of green prevailing in the leaf may be copied by blending blues and yellows in the proper proportions. To simulate the autumn tints two or more dabbers and sheets of colour must be employed, and the leaves dabbed in the proper parts with the respective colours. The colour known as burnt sienna works very well, and has a pleasing effect.

The art thus described may be applied to a number of objects, as the making of wreaths of leaves for albums, etc., the decoration of terra cotta ware, for which latter purpose use a more liberal quantity of colour.

However, independently of the abilities of the process, it is sufficiently valuable as a means by which to secure, with all the faithfulness of photography, and the added charm of colour, a natural copy of a leaf giving its characteristic features with perfect clearness.

VARIETIES.

NECESSARY KNOWLEDGE.—Ruskin has given expression to the opinion that each child with other necessary knowledge should imperatively be taught, with the best skill of teaching that the country could produce, the three following things:—

The laws of health and the exercises enjoined by them.

Habits of gentleness and justice.

The calling by which he is to live.

What a revolution would be effected in our practical social life if this were done!

THE RAINBOW.

A fragment of a rainbow bright
Through the moist air I see;
All dark and damp on yonder height,
All bright and clear to me.

An hour ago the storm was here,
The gleam was far behind;
So will our joys and grief appear,
When earth has ceased to blind.

Grief will be joy if on its edge
Fall soft that holiest ray,
Joy will be grief if no faint pledge
Be there of heavenly day. *J. Keble.*

GIVE AND IT SHALL BE GIVEN YOU.—There is in Austria a monastery which, in former times, was very rich, and remained rich so long as it was charitable to the poor; but when it ceased to give then it became indigent, and is so to this day. Not long since a poor man went there and solicited alms, which was denied him; he demanded the reason why they refused to give for God's sake? The porter of the monastery answered: "We are become poor;" whereupon the mendicant said, "The cause of your poverty is this: Ye had formerly in the monastery two brethren, the one named *Date* (give), and the other *Dabitur* (it shall be given you). The former ye thrust out; the other went away of himself."—*Luther's Table Talk.*

THE HEALTH OF HAPPY HEARTS.—Self-government possesses great power over disease. Fretfulness and impatience increase the action of the heart and arteries, and impair the action of the skin, and thus aggravate bodily diseases. While resignation to the will of God and a cheerful spirit have effects of the very opposite kind; and we cannot suffer from any complaint which is not relieved by their salutary influence. "A merry heart doeth good like a medicine; but a broken spirit drieth the bones."—*Dr. Graham.*

HOW TO PURIFY TURBID WATER.—Turbid water is, in some way as yet insufficiently explained, made clear by the Indian plan of putting a piece of alum into it. The alum appears to unite with the mud, and to form a clayey deposit. Independently of this action, it has an astringent effect on organic matters; it hardens them, and they subside to the bottom of the vessel, instead of being diffused in a glairy, viscous state throughout the water. No taste of alum remains in the water, unless it has been used in great excess. Three thimblefuls of alum will clarify a bucketful of turbid water.

"OLD CLOTHES!"—The other day I was what you would call *floored* by a Jew. He passed me several times, crying for old clothes in the most nasal and extraordinary manner I ever heard. At last I was so provoked that I said to him, "Pray, why don't you say 'old clothes' in a plain way as I do now?" The Jew stopped, and looking very gravely at me, said in a clear and even fine accent, "Sir, I can say old clothes as well as you can; but if you had to say so ten times a minute, for an hour together, you would say 'och clo' as I do now," and so he marched off. I was so confounded with the justice of his retort that I followed and gave him a shilling, the only one I had.—*Coleridge's Table Talk.*

DOUBLE ACROSTIC.

My first, a poet says, "resembles leaves,"
And yet more often are they found the root
From whence my second ev'ry one perceives,
Whatever seeds were sown, are now the fruit.

1. A county, known by streams and lakes and rills,
   By spreading moorlands and by barren hills.
2. A subtle essence, that pervades our sense
   When th' atmosphere with low'ring clouds is dense,
   And electricity evokes it thence.
3. The sorriest jade that ever man bestrode,
   Scarce able to support his master's load;
   Yet, by a chivalric, high-sounding name,
   He, with that master, has gone down to fame.
4. Within an oak-tree was my life enclos'd,
   The tree's vicissitudes my own impos'd;
   Sprung from its acorn, with its growth I grew,
   And when the oak-tree fell I perish'd too.
5. Not far from Paris, on a wooded height,
   A town, by Romans founded, stands in sight.
   The neighb'ring river has such cleansing force,
   That fulling-works arise along its course;
   And, more than other industries, the trade
   Of bleaching has its reputation made.

XIMENA.

THE KYRLE SOCIETY.

By A MEMBER.

SOCIETY for bringing beauty home to the people," thus runs the modest prospectus. "To the utmost of our power," is the bold motto of this society.

The Kyrle Society receives its name from John Kyrle, the "Man of Ross," and was founded by a lady a few years ago. It now includes hundreds in its membership. Miss Octavia Hill acts as treasurer, and H.R.H. Princess Louise as Vice-President, while H.R.H. Prince Leopold fills the office of President.

It is easier to speak of the formation and growth of the society than to define its action. Everyone who wishes may become a member; there is no subscription. Here are a few simple ways of furthering the work of the Kyrle Society:—

Taking small parties of children from London courts out into the sunshine in parks, or to museums or picture galleries, or to your own gardens on summer evenings.

Forming evening classes for sewing, reading and writing, singing, and for general improvement.

Collecting dried plants, ferns, seaweeds, shells, pictures, Christmas cards.

Sending hampers of flowers and roots from the country.*

Those who are really willing to help will have full information as to ways and means, by applying to the Secretary of the Kyrle Society, 14, Nottingham-place, N.W., or by writing to me through the Editor of this paper.

A short sketch of John Kyrle's life may interest you.

John Kyrle, better known in his lifetime by his title of "The Man of Ross," was born in Gloucestershire in 1637. His father, a relative of Hampden the patriot, and of Edmund Waller the poet, was a magistrate, and Kyrle was proud of tracing his pedigree back to the reign of Henry VII.

After his father's death, John Kyrle was sent to Balliol College, Oxford. He afterwards filled several public offices in Hereford, and in 1683 he returned to Ross, where he devoted the remainder of his life to carrying out works of public and private benefit. Kyrle's income was £500 a year, but he was assisted by his wealthier neighbours in his benevolent plans.

Kyrle is perhaps best remembered in Ross by the "walk" which bears his name. This piece of ground, about a mile and a half in length, he purchased and planted with trees, choosing the elm on account of the gravelly soil of Ross. He made it a special duty to attend to the growth of these trees, under

* The hampers will always be returned.