

## How to Care for Roses

What is said to be one of the most helpful discourses given upon the subject of sub-irrigation and soils, for practical garden uses, was heard Monday night when E. R. Roberts, former superintendent of the Metropolitan park service, addressed a gathering of Tacoma Rose society members at the Commercial club. Years of practical research and experiment have made Mr. Roberts thoroughly conversant with all that is best for floral life, and in the following talk will doubtless be found helpful hints to those interested in sub-irrigation in its relation to the life and propagation of flowers, fruits and vegetables.

Two very simple rules are the governing essentials of the many plans of sub-irrigation proposed by Mr. Roberts, i.e., a plentiful supply of water during the time of growth, and care that the water does not stagnate. The main principle is the supplying of the surface with all the water needed, and rapidly draining it again when sufficiency is attained. The various economical schemes for installing irrigation pipes at nominal cost are explained and the methods of applying to garden, greenhouse or orchard are also explained. Especial attention is given in the speech to the care of roses.

### Tells How Necessary is Water

Starting out with a reference to water as the main essential, Mr. Roberts said:

"Of all the substances which concur in the vegetation and growth of plants, water is the most essential. Without moisture the seed cannot germinate, nor can the plant receive nourishment. Hence in warm climates where rains are periodical, and where the soil is dried and parched by a continued evaporation, no verdure exists except where springs or rivers supply the waste of moisture. The warmer the climate and the more rapid the evaporation the more luxuriant is the vegetation, provided there be an abundant supply of water. This circumstance has suggested the plan of diverting streams and conducting them in channels to fertilize as great an extent of land as possible. The water used always contains more or less saline and other matters which is very necessary to the growth of plants and which are supplied by irrigation.

"If water stagnates and is evaporated, and the noxious matter held in solution remains in the soil, all the advantage of irrigation is lost, and the better kinds of plants are succeeded by rushes and other coarse aquatic growths, as may be seen in all marshy spots. The circulation of the water, therefore, appears to be as necessary as its presence, and, provided there be a sufficient supply of water of a proper quality, the more porous the soil, and especially the sub-soil, is the more vigorous is the vegetation. It is on this principle alone that we can rationally account for the great advantage of irrigation in those climates where rain is abundant, and where the soil, which is most benefited by having a supply of water running through it, is of a nature to require artificial draining as an indispensable preliminary to being made fertile by irrigation, by keeping these principles in view, great light will be thrown on the practical part of irrigation, which, having been long established by experience, before these principles were thought of, depends not on their correctness, but only confirms their truth. The whole art of irrigation may be deduced from two simple rules, which are: First, to give a sufficient supply of water during all the time the plants are growing; and, second, never to allow it to accumulate so long as to stagnate.

### Conservation of Water

"Water carries all of the food of plants into circulation, so there cannot be abundant growth and vigorous, healthy life without there is an abundance of water present in the tissues of growing organisms. Most living plants contain from 75 to 95 per cent of water, notwithstanding the great need of plants for a liberal supply of water, the soil may easily contain so much as to injure or even destroy them.

"Superfluous water in ordinary cases may be carried off by surface and underground drains, but the problem of supplying water to plants when there is a lack of it is a difficult one. In some localities surface irrigation is found to be impracticable, first on account of lack of water; second, because on many soils surface irrigation injures the land. Clay lands, unless most thoroughly underdrained, become puddled, sour and reduced in productive power when thus irrigated. Only on certain classes of soils, usually found in arid countries, does surface irrigation become fully successful.

"Sub-irrigation is the ideal method with few exceptions all cultivated plants have to depend on the water stored in the soil. How to make a great storehouse for water in the soil without saturating it and how to get the water near the surface for the use of the plant without letting it escape during dry weather are therefore subjects of prime importance to every plant grower.

"Soils very greatly in their power of holding water without being saturated. A pliable clay loam has the power of storing water to a much larger degree than heavy clay or loose sandy soils. Often about the only object of cultivation is to overcome the effect of heavy beating rains and to enable the capacity of the soil for holding on to the water. There is a large amount of water in the first 12 inches of the surface soil, and we know that a large additional amount is found in the subsoil. In some cases it is far more than is found in the surface soil. The question is, how to make the best use of and how to conserve this stored up

water which finally contains all the nutritious material which enters into the circulation of the plant.

### Thin Planting an Aid

"Thin planting assists materially in the conservation of moisture. Plants usually suffer in the middle and latter part of the summer when they are trying to produce fruit and flowers. If too many plants are growing on the surface the land will already have been robbed of its moisture before the fruiting season. A failure to produce satisfactory crops is inevitable.

"The conservation of moisture by surface cultivation has been found eminently successful. The enlarging of the capillary tubes at the surface prevents the water from rising. The loose upper layer shades the land and keeps it cool, thereby preventing to a large extent surface evaporation. There is not the slightest doubt that a weekly surface cultivation from June until the last of August helps materially to save the water in the soil, while at the same time culture sets free plant food and keeps the lower strata of the soil cool and moist. This is one of the most important operations in the culture of plants, and one that it is almost impossible to get a proper knowledge of without actual experience. As the circumstances are so various, when water should be given or withheld, that were we to write a volume on the subject it would not be of as much value as a year's actual practice.

"The general principle of irrigation may be described as the supplying of every portion of the surface with water when needed, and taking it off again rapidly, for all standing waters are injurious to plants. There are many ways of irrigating land with water in the country. Some methods are very simple, others are very costly. Much has been written of late years concerning the necessity of irrigation and several experiments in what is known as sub-irrigation have been published. Some writers assert it to be a new method of irrigation, but we have seen this system in operation when we were boys, in the glass-houses, fruit, flowers and vegetable gardens. In fact, it is as old as the hills. Nature sub-irrigates all the valleys of the earth and from her we learn this art of bringing water to the cultivated plants by the laying of tiles sufficiently deep to be out of reach of the plow, and serving for drainage purposes in spring, or whenever there is an excess of water in the soil, and using them for purposes of irrigation by stopping the outlet in summer, has been satisfactorily practiced by some.

### How to Work Scheme

"This method of irrigation, which is the original, is to get water to the roots of plants, and use the water with as little waste as possible. Take common porous 2½ inch drain tiles; place in continuous row, end to end, on the surface of the soil; plant vegetables on either or both sides of the line. The tiles are one foot long as a rule everywhere, and by pouring in the water at one end of the line it will be distributed at the joints throughout the length desired, while the opposite end is stopped up.

"Take celery as an example crop for irrigation on uplands. Plant the celery as above stated, and while it is young you have a simple surface irrigation, but as the crop grows you bank it up, and finally have the tile covered and thus have sub-irrigation. The tiles are cheap and last indefinitely. When the celery is used the tile is dug out and piled up or used for sub-irrigation in the greenhouse beds or benches if you have one. Potatoes and various other crops can be grown in the same way. Celery watered this way will have no rust, and is as tender as it can be. Beside this, you can water 20 times as much space in the same time as in the ordinary way with ditches, besides saving time, money and labor. This plan delivers the water where it is most needed and I have reason to believe is fully as economical with water as with time.

"Rows of celery watered in this manner, planted between the potato rows, besides watering the celery, the moisture reaches the tops of the potato hills, thus showing that the watering was sufficient for at least three feet and three inches apart.

### Greenhouse Sub-Irrigation

"This method of watering greenhouse beds by means of pipes or lines of tile laid on the bottom of the benches, is a much discussed and interesting subject in some parts of the country. Experiments in this line have only just begun and the solution of most of these irrigation problems is yet a task for the future, but we have already seen that the innovation for the greenhouse operations is one of practical value.

"Benches have been arranged for sub-irrigation by means of a five quarter-inch gas pipe laid on the ordinary plank bottom. Quarter inch holes are drilled through the pipe five inches apart, alternately. One end of the pipes are closed, although not perfectly tight; the other ends turned up to receive the water through a funnel, or directly from the hose. The bench bottom is not to be water-tight, being made of ordinary matched two-inch plank, neither lead, cement nor paint are needed in the bottom of the bench.

"This will save work, time and expense, for you will find the following advantages in this method of watering: First, ease of application; second, certainty of thoroughness in watering; third, exemption of plants from disease. Overhead watering, when it has to be done by means of the ordinary garden sprinkler, is a tedious task, or even by the

hose. On such crops as tomatoes, lettuce and cucumbers the watering must be done thoroughly and the sub-irrigation will do it.

### For the Orchard

"It is well known that all arable soils contain much more plant food than any crop, or even any 20 or more crops can use. The chief aim of tillage is to render the greatest amount of these materials available to plants, in order that they may become useful to crops. These materials must enter into solution in water, and all other conditions being favorable, the more water the soil has the more plants will grow.

"In many orchards and berry gardens an application of water is much more advantageous than an application of fertilizer. This is well shown in many of the arid lands in the country, where a small amount of sub-irrigation renders the soils wonderfully productive, and prevent many of the fruits from dropping off before they are matured. Practically all experience shows that irrigation is capable of greatly increasing the yield, and this, too, when the natural rainfall has been well conserved.

"At all events, it is certain that the effect of much of the fertilizing of land is lost because the tillage is not improved, and the greater outlay in the application of commercial plant food the greater should be the attention to tillage and conservation of moisture.

### Must Water Roses Deep

"Watering rose beds and borders of roses, is rarely done thoroughly. A bucketful of water sprinkled on in the usual fashion will make a good sized bed appear soaked, while in fact the application may not have reached beyond an inch deep, leaving the lower portions dry.

"Such indeed is not an uncommon condition of many rose beds and borders of flowers. Sub-irrigation gives us reversed conditions on a bed of roses which one bucketful would render apparently quite wet. You may turn two or three bucketfuls through underground pipes or tiles without bringing moisture enough for a respectable show to the surface. The consequence is that almost everyone, without exception, would apply a greater quantity of water by irrigation than by the old overhead sprinkling method. In sub-irrigation you simply pour a few bucketfuls of water into the funnel at one end of the pipes or tiles and the work is done, but done well.

"This method of application also enables us to use washing suds, manure water and similar liquids which we would not like to put on the plants overhead, either from considerations of cleanliness or for fear of clogging the sprinkler.

"Amateurs seldom give enough water to the plants for best effect. With a sub-irrigation arrangement this will be different. The application does not quickly show on the surface and consequently it is naturally more abundant than under the old method, the roots of the plants are kept well supplied with moisture all the time, and the growth, therefore, is rapid and healthy. The flowers also are as brilliant as nature can make them.

"Roses will grow and give good returns in any fertile, well-drained ground, but it is worth while to use some care in the preparation of the beds or borders, as the general health of the plants, quantity and quality of bloom usually more than repays the extra care expended on this detail.

"Use the best soil you can get and well rotted dairy manure. Dig out the bed to a depth of two or three feet, and if drainage is imperfect it must be provided for. Fill in with a composition thoroughly mixed. It is better to make the beds some time in advance of planting to allow time for settling.

"After the soil is settled, make the bed or border not over four feet wide; firm the soil well and take common porous drain tiles and lay two rows end to end on the soil to inches below the surface of the bed, and 8 inches from the side of the bed. By pouring in the water at the end of the line it will distribute at the joints throughout the length of tiles.

"When the opposite end is stopped, it is very important that the tiles be laid down in the ground firmly so that they will be always in line."—Tacoma Ledger.

### A RUSH SALE

There's the sound of eager voices  
And the fluttering of skirts,  
While the maiden fair rejoices  
And the golf links she deserts.  
Would you know how the mighty reason  
Of this thronging from all parts?  
Crafty Cupid advertises  
"Here's a bargain day in hearts!"

There are hearts with gold all braided,  
There are hearts with fatal hurts;  
There are hearts, all torn and faded,  
Which are quickly sold to flirts.  
Swiftly disappear all sizes,  
Cupid's counters soon are bare;  
Every woman loves a bargain  
And these hearts are remnants rare.

Then a grumbling soon arises  
And a murmuring begins,  
For the buyers find surprises,  
While they suffer for their sins.  
All those hearts were badly damaged—  
Every one possessed a flaw,  
There are many tears and troubles,  
Wrathful maidens go to law.

But the days go flitting by us—  
That was quite a year ago—  
And the griefs no longer try us,  
They are gone with last year's snow.  
Once more, comes a rush for remnants,  
And we hear upon the marts—  
Crafty—Cupid advertises  
"Here's a bargain day in hearts!"  
—Canadian Courier.

## The American Man

(By T. Sharper Knowlson, in the Scotsman.)

I heard this expression several times whilst crossing the Atlantic, and, of course, it emanated from a little group of Britishers in the smokeroom: "I may be prejudiced," said one of them, "but that is my opinion." I have asked myself a good many times how the American has come to be described as an over-rated man, and I can only account for it by a series of related causes which I shall hereafter try to explain. When abroad he feels compelled to declare the greatness of his country and its institutions, and, in his enthusiasm, the declaration sometimes goes beyond the limit of actual fact. The discrepancy between the statement and the reality, causes the foreigner to believe the American is not what he says he is—hence the adjective "over-rated." When at home he shows less disposition to affirm the excellence of his country and countrymen; he believes devoutly in both, but he will ask your opinion rather than announce the dogma for your acceptance; that is reserved for use on foreign soil. It is like the mental habit of a relative of my own, a naturalized American who, when in England, extolled the glories of the Republic, and when in America indulged in panegyrics of the home country.

### A Passion for Statistics

The American has a passion for statistics, and there is nothing more striking than the display of figures given in the reports of business firms, of clubs, of colleges, and of every kind of institution where an annual statement is customary. Take, for example, the Y. M. C. A. It tells the public how many members have enrolled, the ratio of increase, the amount of expenditure, the income, and all the usual details of a balance sheet; but it goes on to inform us that 183,225 meals have been served in the dining rooms, and that there have been 6,553 hair-cuts and shaves in the barber's shop on the premises. Than this I can find no better illustration of the American love of figures, and it comes upon the English mind with a strangeness, almost a weirdness, that suggests we are built in an altogether different mental mould. So we are. And, to tell the truth, this is partly why we call the American an over-rated man, whereas in point of fact he is just different, that is all. He is a modern Egyptian, who loves big things like pyramids and skyscrapers; and he has the same liking for the occult because it means power on the plane of the real. This profound regard for statistics springs out of the desire to behold greatness; not a unit must be lost sight of, for at the end of the year, or the period, it will be needed to make up an impressive total; and no feature of the enterprise can be disregarded, inasmuch as it occupies a significant place in producing the feeling of prosperity.

### Hunger for Big Things

Now it will readily be understood, that sometimes this hunger for big things results in a showing that has only a flimsy foundation in arithmetic; the desire to make an impression causes the man to deal with figures in a fashion called optimistic; the total stands more for what he hopes to do than for what he has actually accomplished. But imagination and shoddy are not as common as Britishers frequently suppose, and the love of bigness has been successfully expressed in a marked degree. The annual turnover of some of the big stores, for instance, is beyond a doubt, and it is large enough to make some of us open our eyes in surprise. Moreover, the sense of the value of guarantees is growing, and even in so delicate a matter as newspaper circulation the trouble taken to adduce reliable evidence in the interest of the advertiser is indicative of the feeling I refer to. The American is often thought about as a man who has no scruples where a dollar profit is concerned, and no doubt there are men of that class in America as everywhere. I have met them myself, and found them most unpleasant. But it is dangerous to reason from solitary examples to universal conclusions, and one ought in fairness to say that the trend is towards a strenuous morality—the crooked man is finding that honesty is the best policy, whatever else it is in the world of ethics.

### Whence Comes It?

I have tried to show the origin of the over-rated American man in his love of statistics, and the hopeful way in which he handles them; and the love of statistics arises out of the desire to produce big things. Now where does that desire come from? It comes in part from the sense of space, the space of a great country, and from the vast opportunities thereby afforded. This is the land of distances where the small perspectives of some other countries are impossible, and even the foreigner with narrow sympathies finds himself making the mental measures of his new acquaintances, writing letters home full of dimensions about territories, institutions, and the Press, possibility of sudden conversion. There is, I suppose, a definite relationship between geography and imagination, and the vastness of this continent as a physical fact, produces its mental compliment in the love of big things for their own sake.

But there is another reason. The American man is a new kind of man; not a sort of different Englishman who lives across the Atlantic. He is biologically a new product. Writing in 1782 Crèvecoeur, in his "Letters of an American Farmer," said: "What then is the American, this new man? I could point out to you a man whose grandfather was an Englishman, whose wife was Dutch, whose son married a French woman, and whose present four sons have now four wives of different nations. He is an American who, leaving behind him all his ancient prejudices and manners, receives new

ones from the mode of life he has embraced, the new government he obeys, the new rank he holds. The American is a new man who acts upon new principles; he must therefore entertain new ideas and form new opinions."

### A Great Experiment

No better statement could be found of the essential psychology of the American. He is the result of a great unordered experiment in national eugenics. In 1782 he was a new man; he is still in process of development, and new things are still his chief desire. He will scrap new machinery for the mower, and the newer for the newest. Sometimes it happens that his new things are more alleged than proved, and then we call him an over-rated man. But let us not rest there, for whereas our development seems to have been concluded, his is not half finished, and his stores of intelligent energy are apparently inexhaustible. In my humble opinion we cannot sleep comfortably in our beds, believing we suffer no danger from American competition and enterprise, hugging the notion that business and finance in this country are not conducted on a solid basis, for the American has a way of getting out of tight corners just as we have of muddling through our difficulties. No doubt it is consoling to accept the doctrine that foreigners are over-rated, but it is both unwise and unsafe, and against one American failure to "make good" there are six successes.

### Lover of Power

I spoke about an Egyptian love of the occult, and here we see a side of the American character which must be put as an offset to its keenness for money making. True, the occult in a commercial country tends to become commercialized, but in spite of that, there is no population where Pantheistic idealism has such sway. We have to remember that Emerson's philosophy originated in Massachusetts, and if there be a philosophy which leads the world at the present moment it is his. There is more financial materialism here than anywhere else, and yet the propaganda of idealism is more strenuously conducted than in any other country. It assumes a hundred different forms, from New Thought to Christian Science, and Christian Science to Psychotherapy. The American mind believes in power, and wherever power is alleged to be there will he be found—ready. I do not say this idealism is sought purely for useful ends; a considerable section seek it for what it is in itself; what I am trying to show is that in some respects we may be under-rating the American, not in isolated units, the shark who robs us or the traveler who annoys us, but in the great mass of the population. Whether we are or not, I think I have furnished sufficient evidence to suggest he is not the negligible quantity that lightly formed British opinion holds him to be.

### 'WARE, PIG!

A party of ladies traveling in Ireland were delighted to find, conspicuously posted at the head of a grassy lane leading to what was evidently a country gentlemen's farm, a notice which read as follows:

Notice to Pigs: Keep Out.  
Notice to Owners: I do not prosecute, but I keep a gun and a pork barrel.

The pig, it is well known, has long been accorded unusual consideration and liberty in the Emerald Isle, often including the freedom of the family living-room, so perhaps the direct address to the gentleman himself, preceding that to his owner, need not have been surprising. It is to be hoped the pigs took heed, and that the pork barrel was not replenished at the expense of trespassers.

It was, at least, less abruptly surprising than a second notice, which the same party encountered a few days later, upon the wall of a public building on the main street of a considerable town:

Riding bicycles and Pigs is strictly forbidden on this sidewalk.

The choicest gem among anti-pig notices is, however, that reported by an English lady from Fernando Po, where the careless ranging at large of the natives' pigs had resulted in such damage to gardens that a proclamation was issued, decreeing that all pigs must be confined, except such as had a ring in the nose and could not root.

The official crier, a large and pompous colored man, patrolled the streets, clashing his bell, and shouting aloud the new ordinance, in terms of West Coast pidgin English.

"I say! I say! I say!" he vociferated in his best and most richly melodious bellow—"Suppose pig walk—iron no live for him nose—gun shoot! Kill him one time! Hear re! Hear re! hear re!"

### EXPECTATIONS

Lodger to his landlady in the country—I am bound to confess that after the glowing description you gave me of the neighborhood and the view, I find it rather different from what I expected.

Landlady—Well, you're different from what I expected, too.—Lustigé Blaetter.

### PECULIAR AND PERTINENT

London gambling houses were licensed in 1620.

Most ancient hymn is the "Song of Moses," composed in 1491 B. C.

Paris Louvre was originally a royal residence in the reign of Dagobert, in 628.

Casting lots was originally employed in the division of the land of Canaan in 1444 B. C.