

a coal fire; passengers in railroad cars have often undergone incalculable sufferings from this cause.

Before coal kindles it must be heated through and through, made hot enough to blister the fingers in an instant, although still black. It is easy to see that a small bit of coal will get thus heated sooner than a larger one; hence the smaller the coal, the sooner will it ignite.

Coal must be kindled with wood. This wood will give out a certain amount of heat, and no more; and as a given amount of heat is necessary to kindle the coal, the more wood, and the less coal, and smaller the pieces, the sooner and more certain will the fire be lighted.

In the face of these facts, persons are frequently seen in rail cars, when the fire in the stove is low, to put on a large amount of coal, the result being that the more coal put on, the more the fire will not burn, because the small amount of heat is distributed over a large amount of coal, all of which is heated somewhat, but none of it heated enough for ignition. The more a coal fire is stirred, if a little low, the more certain it is to go out.

The best way to replenish a coal fire is to put on a small amount of coal while it is burning well; and after this is thoroughly kindled, and has been red for a short time, add a little more coal. In this way a fire may be kept burning a whole day in a grate without using the poker once; and good housekeepers know that every time a poker is used, the ashes fly in every direction, and valuable time is expended in brushing them up. If a poker must be used, the time to do it is when fresh coal has been thoroughly kindled, for then there is no danger of its going out.

If a coal fire is burning too much, either cover it with some of the ashes which have fallen through the grate (this makes the mass more compact, and diminishes the draught) or if it is desirable to put the fire out altogether, as when going to bed, press the coal down from the top with a shovel or blunt-edged poker.

It has been the custom to use the largest-sized coal for the furnace; this requires a great waste of wood in kindling, besides much time is lost in firing up in the morning, the very time when most heat is wanted, and wanted quickly. It will take less coal, and give incomparably more comfort, to feed a furnace with coal, the largest piece of which is not larger than a hen's egg, only taking care to put on a little coal every hour. Observation and close calculating economy has shown this to all our river boats, tugs, and steamers.—*Journal of Health.*

HOW OFTEN SHALL I WATER MY PLANTS?

BY JAMES H. PARK.

This is a question so frequently asked of gardeners, and which, to them, seems so foolish, as to tax their patience at times. Yet if they would consider how critical a business the watering of a valuable collection of plants is, and how often a head-gardener prefers doing part of such work himself, rather than trust it to his assistants, they might more readily sympathize with inexperienced questioners. A lengthy business experience amongst those who cultivate plants, assures me that to many the following instructions must be valuable, simple and superfluous as they may appear to the initiated.

Plants cannot be watered regularly for several reasons. They have a season of luxuriant growth, a sudden stoppage by transplanting from the garden, and a standing still for a season. Nearly all undergo a slow sort of hybernation in the early winter, which is followed by a gradual recuperation, and if well cared for, a generous spring growth. Some plants are soft and luscious; others hard-wooded and comparatively sapless. Some are kept in dry and over-heated rooms; others where the atmosphere is cool and retains more of its natural moisture. All these differences effect their requirements so that no recipe as to time of watering could be generally applicable; some plants requiring vastly more water than others under similar conditions, while the same plants need more or less, according to their exposure to atmospheric absorption.

No plant in a pot filled with earth can be properly watered. The earth ought always to be so far below the edge of the flower-pot as to leave space for holding water enough to moisten throughout the whole of the earth contained in the pot. We have had our attention called a hundred times to plants starving in pots heaped full of baked earth, which "wouldn't grow although they were watered twice every day," and no wonder. Such plants might be watered all day, and would then be barely moistened throughout. Those cultivators—like that famous foreigner who swallowed all his pills at a dose—seem to think they cannot have too much of a good thing, and the more earth they can give the better the plants must grow, not knowing, probably, that the actual amount of earth in a pot does not diminish with the increase of the plant grown therein.

We have seen not a few city garden borders banked up after the same fashion, sloping from fence to walk, and sun-baked until their capacity for shedding water was