up a short time before the sun shines upon the house, the apparatus will be at its greatest heat just as the temperature will be influenced by the sun, and unless air is admitted will soon rise to sixty or seventy degrees. This is especially the case during January and March. These remarks do not of course apply when the fires are attended early in the morning. It may also be well to add that in no case is it desirable to leave the fires for a very long period, and in severe weather they should receive attention as late as twelve o'clock, and again at five or six in the morning. Much of course will depend upon the weather and the character of the house, and the manner in which it is heated, but there is no means by which the inmates can be kept safely in frosty weather, without frequently attending to the fires; and unless the amateur is prepared to bestow this attention, it will be far better to devote his whole attention to plants requiring no artificial heat.

Artificial heat is occasionally necessary to dry up superfluous moisture, and for maintaining a pure atmosphere in dull weather by promoting a circulation of air. In applying fire-heat for either of these purposes, advantage should be taken of a day when the ventilators may be opened freely, for the application of artificial heat with closed ventilators, excepting in cases of frost, will do more harm than good. In foggy weather the house should be kept close, for the admission of the fog into the house cannot possibly do any good. As a rule, the fire for drying up moisture should be lighted rather early in the day, and be made to burn steadily until about two o'clock in the afternoon, when it may be allowed to go out.

WINTERING TENDER PLANTS WITHOUT FIRE-HEAT.

BY GEORGE SMITH.

THE difficulties of wintering successfully a stock of bedding plants in a cold pit are by no means light, yet with care and good management so much can be done in this direction that a few suggestions relative to the management of these structures during the winter will probably be of considerable service just now.

With regard to the construction of cold pits, it will suffice to say that they should be about six feet in width, two feet in depth in the front, and three feet at the back, and not less than twenty feet in length. A pit or frame of these dimensions will be found most useful; but if the stock of plants is large the length can of course be increased, the only limit being the space at disposal and the question of expense. At the same time it may be said that a pit of a smaller size than the one here mentioned will be of little real service, as the number of plants it will be capable of holding will be very small. The walls may be made of turf sods, bricks or boards, according as the proprietor of the garden may determine. Brick walls are of course preferable as they have a neater appearance and are more

durable. Wooden walls also have a good appearance, and will last a considerable time. Turf walls are not so sightly nor so desirable as those of wood or bricks, but they answer the desired purpose very well, and where appearance is of secondary importance and the sods not difficult to obtain, they can be strongly recommended. The sods should be cut of a uniform size—say three inches in thickness by twelve inches square. A rather stout piece of wood should be driven into the ground at each corner to aid in keeping the walls more secure than would otherwise be the case. The lights for turf pits should be prepared in a similar manner as for those of brick. In dry soils the pits may be partly above and partly below the ground line with advantage, as there will not be so much difficulty in keeping the frost out, but in naturally damp soils the floor of the pit should be on or slightly above the general level, or the plants will suffer from dampness.

In preparing tender plants, such, for example, as geraniums and verbenas, for wintering in a cold pit, it is most important to have them well hardened. The cuttings must be struck early, and after they are rooted kept in the open air until protection from frost is needful. When the plants are well furnished with roots and the growth moderately firm there will not be much danger of losing them provided the frost is kept from them. As dampness is the chief enemy to contend with, the plants must be placed far enough apart to admit of a free circulation of air amongst them. Air must be admitted freely in mild dry weather, and on exceptionably favourable occasions the lights should be drawn off altogether for a few hours in the middle of the day. As the most favourable times for air-giving have been pointed out, it will perhaps be useful to say that air must not be admitted in foggy, wet, or frosty weather.

The manner in which the plants are watered is also of great importance, and it should be clearly understood that less harm is likely to be done by giving too little than too much. In the winter all the plants require very little moisture, and geraniums may be kept quite dry for weeks together without suffering materially. All watering should be done on the morning of a dry day, when the lights can be drawn off for a few hours afterwards, and it will be better to wait a few days, or even weeks, than to water in dull weather. No more water must be applied than is really necessary to moisten the soil, and the greatest care must be exercised to prevent the foliage being wetted.

Russian mats form the most suitable covering for pits, when aided in severe weather with littery hay or straw. Long litter may be used alone; but it is better to have mats to lay immediately over the glass, and then put the litter over them, when the state of the weather renders additional protection necessary. Covering materials of all kinds should be kept as dry as possible, because of their greater capabilities for resisting frost. With respect to keeping out the frost, it must not for a moment be forgotten that when severe it is not slow in finding its way into the frame through the sides as well as through the glass. I would direct special attention to this, for it is a frequent occurrence in frosty weather to see a thick covering

over the glass and the sides of the frame left quite unprotected The safest course, and one that can be highly recommended is, to pack a liberal quantity of litter against the wall about the first week in December, and allow it to remain until the end of February. On the appearance of frost the lights should be shut down rather early in the afternoon, and the glass covered before the moisture on the underside commences to freeze.

A very large number of tender plants will not receive material injury if they are frozen, provided they are thawed before being exposed to the light. Therefore if the frost finds its way into the frames, let the covering remain on, and the lights closed until the plants are thawed again, and then uncover by removing a portion of the protecting material at a time.

In the case of frames filled with reputed hardy plants, such as pansies, pentstemons, and auriculas, a moderately light covering will suffice, excepting in very severe weather: its chief value consists in protecting the plants from the sun until they are thawed. It will therefore be seen that in severe weather there should be no hurry in removing the protecting materials in the morning.

A most essential point in the winter management of the cold pit is to remove all decaying leaves or plants with promptitude to prevent those in a healthy state being injured by coming in contact with them.

RIPE GRAPES AT CHRISTMAS.

BY J. W. MEREDITH.

WITHIN a comparatively short period it was supposed that to have a dish of good grapes during the Christmas festivities it was necessary to have what is designated an "early" vinery, and to start the vines into growth in the autumn, and push them on through the months of October, November, and December, with artificial heat. This it need hardly be said could be only done at an immense cost; the grapes at that season were therefore placed quite beyond the reach of those with limited means, for, independent of the cost of fuel, a very considerable amount of skill is necessary to ensure satisfactory results. Now the practice has changed, and instead of forcing sorts which attain early maturity, those which can be kept for a considerable period after they are ripe are grown instead.

The advantage of growing late instead of early grapes is immense, for they are produced with less difficulty and expense, and are moreover of a much finer flavour; they are in fact as easily produced as an ordinary crop of Sweetwater or Black Hamburghs, for autumn use. It therefore appears to me that it would be well for those who have only limited accommodation for grape-growing to consider whether it would not be to their advantage to grow grapes that may be kept until the supplies of out-door fruit, such as peaches, nectarines, and plums, are exhausted, instead of those which have to be