

will necessarily occupy considerable space, but as I should calculate that at least one-half of this number can be supplied in the shape of hardy plants which will prove far more satisfactory than such a host of gradually cooling tenderthings, then the accommodation above indicated will be sufficient in the way of glass. To do anything like a trustworthy calculation of the actual labour required for the working of such a place, it would be necessary to know the nature and extent of the grounds and flower garden, as without this any calculation must be only approximate. Therefore I should say that eight to ten men, including the head gardener, would be ample to keep the whole in perfect order; much, however, depends upon what the actual labour in management is constituted. More than one-half of the places in England are under-managed, and consequently badly managed. Large places and inadequate assistance is the order of the day, but such conditions give no real pleasure, profit, or satisfaction to any one. *G. W.*

A Quick Method of Forcing Asparagus.—By the same post I have sent you a sample of Asparagus, and as my method of forcing may be of interest to many readers of the *Gardeners' Chronicle* I beg to send you the details. I have raised two crops of Asparagus of great success. My first was taken from the ground on November 14, and from those crowns I cut on November 17, and continued so doing with a daily average of 150 nice heads, until December 1. I also began taking up my second bed on December 1, and began cutting in six days after planting. At the time of writing I can cut about 150 beautiful heads daily. The plan I adopt is to lay the roots on a shelf in a hot-house within 3 inches of the hot-water-pipes. I plant them on a thin layer of manure and soil, and after placing the roots thickly together I cover all over with a shallow dressing of soil, and then one thing only remains to be done to ensure success, and that is to give plenty of water, either clear or liquid-manure. This mode of forcing has great advantages, inasmuch that it costs but a trifle in the time and also of material, and many who have hot-houses but who have not manure for forcing purposes can adopt it. One trial will, I am certain, prove satisfactory. *J. Clark, The Gardens, Melton Constable, East Dereham, Norfolk.* [We received a very good sample, and are much obliged to our correspondent for the hint. *E.H.*]

Eucharis amazonica in the Garston Vineyard.—Amongst the many objects of interest to be seen at this time in the Garston Vineyard, is the handsome display of this beautiful Lily, the culture of which has been lately treated on by several correspondents lately in the pages of the *Gardeners' Chronicle*. All or very nearly all agree that to do it well it is necessary, after a liberal season's growth, to give it a perfect season of rest, and then plunge in a brick bottom-bed, when every plant will fill up with flowers, and will possess the strength of the bulbs. What prompts me to write of the stock at Garston is not the individual merits of one, two, or even a dozen plants. Your readers must imagine one of those large span-roofed houses, the centre bed of which is filled from end to end with plants in robust health, all about in the same stage of growth, and yielding hundreds upon hundreds of flowers, a prospect for marketing purposes must be a very profitable investment. When we bear in mind how simple it is to grow and flower these plants, it is not surprising why any one possessing a hot-house or two should be without them? Taken as a whole, I must confess to never having seen anything to equal this display for uniformity of merit, and upon asking Mr. Howard for such a reason, he informed me that I was informed that nothing novel in the shape of treatment was tried. The plants had a good season of rest in a cooler temperature than is generally supposed to be good for them, which is some encouragement to those who think they must be in possession of ranges of hot-houses to grow these and similar subjects. Vine-growers will be glad to hear that the Court is now filled with that well-beloved "Vine," and that it can be grown to perfection under such circumstances that are no doubt. The Vine is just breaking, and promises well, and I should say that a visit to the Garston Vineyard next July or August ought to satisfy those who complain of the Vines of this Vineyard, whether it is worth house-room or not. *H. Hind.*

Superheating Vine Borders.—Would it not greatly facilitate the arrival at a correct estimate of the value of superheating Vine borders if it were possible to obtain an exact comparison of the relative temperatures of soil and atmosphere in which trees in a state of Nature first start into growth in the spring? Such an experiment should be made of exactness, in that a thermometer might be fixed in the head of the tree, and another placed in a hole in the ground from 12 to 18 inches deep, according to the depth at which the roots are found. In this way a fair

might be found as to the relative differences of temperature for roots and branches essential for successful Vine culture. It is assumed that with Vine roots inside the temperature of the border there is equal to that of the house, but the probability is that it is considerably lower. This will, no doubt, be found the case with trees growing in the open air. In the case of Vines with the roots outside of the house there can be little doubt that without artificial heat the difference at starting time would be considerable, and that with the application of internal heat the difference must be extremely unnatural. The obvious course in such a case would be to bring the temperature of the border somewhat nearer to that of the house by means of leaden panes, or heating the border, but there is the danger in this case lies, not so much in exciting the border roots to action, as in the fact that the heat is unduly apportioned, the greatest heat being applied to the surface-roots, whilst those several inches in depth scarcely feel the stimulus. Probably the most natural temperature for outside Vine borders would be found by covering them during the spring with a temporary glass protection, and this course would doubtless be found safer and more satisfactory in the long run than in applying fermenting material, as the mere exciting unduly of surface-roots is not the *bona fide* ideal of Vine culture. *D.*

Veitch's Self-Protecting Broccoli.—In your review of the "Fruits and Vegetables of 1876" I observe you do not notice the above Broccoli. Although situated as this plot is, high up among the cold bleak Cleveland Hills, I, like your correspondent Mr. Johnston, have indeed found it to be a gem of the first water, and I think the following particulars respecting this excellent vegetable cannot fail to be interesting to many of your readers. In June last we planted out 300, which began to be ready for cutting about the middle of November, and from that time up to the present day the plants have yielded from six to ten fine heads almost daily, and when cooked their delicate flavour and tenderness leave nothing to be desired. Where vegetables are wanted in quantity during November and December every gardener should have a good stock of this choice Broccoli. It only requires to be known to become a garden necessity. *J. McIndoe, Hutton Hall, Gushborough, Yorkshire.*

The Scarcity of Holly Berries and Bees.—Few but a philosopher like Mr. Darwin would have thought of linking these two facts together as cause and effect. It may, however, be so. Wasps, too, of course, may be held to be bees in this matter, and the scarcity of wasps during the spring and summer of the late year was noticed by me, and I notice that wasps frequent the Holly a good deal in the spring. Of course, too, the movements of bees and of wind is more important to such plants as the Holly than to other flowers in which the male and female organs are not only on the same plant but in the same flower. Neither does the scarcity of bees cover such exceptions as the one I recollect to see in the autumn among thousands being literally coralled over with berries, while all beside were berryless—though, for that matter, neither does the severity of the weather nor of drought explain such exceptions; still I am inclined to think the severe cold when the Hollies were in flower had much to do with the destruction of the crop, just as it destroyed Apples, Pears, Plums, cherries, acorns, Beech-mast, and other fruit-bearing flowers by wholesale. No doubt the Holly is a hardy plant—very hardy, in fact; so is the Oak; but, nevertheless, I have seen Oaks killed dead by May frosts; and hence it is reasonable to suppose that Holly flowers might be frost-bitten beyond the power of bearing berries by frosts biting them before they were in bloom. I know, however, far better than Mr. Darwin that the ability of plants to resist cold is a matter of condition rather than constitution. A plant may pass through zero unscathed when at rest, while all its embryo fruit may be cut off, and even its life be destroyed, by from 10° to 15° of frost out of season. Thus it comes to pass that the cold in a winter may ensure in its native country a safe criterion of what it might fruit stand in another country, inasmuch as in the latter the cold may come upon it in a different stage. Alike in regard to maturity or state of growth, spring frosts, for instance, are not destructive in the ratio of their severity, but rather in the degree of their unseasonableness. The plants are allured into abnormal growth, and are thus rendered more liable to be not fulfilled, or unwise cultural devices, and the plants thus taken unawares, and in a tender condition, succumb to the cold. It would, however, be interesting to know if the scarcity of bees or wasps was co-extensive with the scarcity of Holly berries, and whether that scarcity was in all affected by the peculiarity, or otherwise, of living in cold lands, which is the action of the spring in some localities. In regard to this place, for instance, we had four good hives near to many of our Hollies, but not a single berry within more than 50 yards of

them; while the solitary example of a bush laden with berries was nearly double that distance from any honey-bees. Also how far the scarcity of bees would be likely to account for the scarcity of sp. acorns and Beech-mast, which are almost as rare as Holly-berries in some localities this season. Much Clover was sown and grown in this and other parts of the Kingdom, perhaps some of our correspondents readers of the *Gardeners' Chronicle* will say whether the scarcity of Clover seed last year was general. It was a good bee season in this neighbourhood—the remark of course, being confined to the honey-bee and its produce, and having no reference to the wild bee or wasp. The latter were very scarce throughout the country, and hence the scarcity of honey was a pretty strange appearance here for their share of mellow fruit in the autumn. *D. T. Fish.*

— I beg a little space in your journal to confess my error with respect to the cause of the scarcity of Holly berries. I have been convinced of this by the two communications in your last number, by a statement in the *Gardeners' Chronicle*, and by some private letters which I have received. I had thought several causes in combination had led to this scarcity; but I still think that the rarity of bees of all kinds in this neighbourhood during the spring, of which fact I feel assured, may have played a part, though a quite subordinate one. *Charles Darwin, Down, Beckenham, Jan. 17.*

There is little doubt that several causes may have made the scarcity of Holly berries last year so apparent everywhere. I think, however, that Mr. Darwin's hypothesis of bees not fertilising the blossoms is not one of the causes, for bees last year were very plentiful, and the hives stronger than usual. I never before knew such crops of the white Clover as were to be seen in this district all through the season, every part of the field and roadside being covered with plants in flower. The bees, therefore, had plenty of food, and an excellent honey harvest was the result. There are immense quantities of Hollies in the hedges and plantations in this district of North Nottingham, and the failures in their berry-bearing are all alike. On the outskirts of Sherwood Forest there are some very long hedges of tall Hollies, and it is only where they have been cut down that the berries are to be seen on them. The Holly likewise grows and prospers on some magnesian limestone crags near this, where the soil on the surface is very thin, but no berries were produced on the bushes last year, although they usually show more berries than the bushes grown on rich soils. *William Tillyer.*

Anything like a confirmation of Mr. Darwin's theory of insect fertilisation has occurred locally here this year, where our Holly trees are a "glorious sight," as Evelyn well describes them when covered with their coral berries. We have generally myriads of insects here in spring and summer, and also several strong hives of honey-bees quite close to the Hollies. One old bush never fails in any season to have a fine crop of berries, ever since it was nearly ringed or barked round by rabbits one severe winter several years ago. *T. R. B.*

The Blackthorn in Bloom on January 9.—Is it not nearly three months in advance of its usual period of flowering? I have not been able to go and see the hedge, but I am assured that there are several spots of white blossom out in full beauty on some Blackthorns, near here; so "spring's banner," as *W. Howitt* termed this flower, has been unfurled early this year. Primroses have been in blossom in the garden for some weeks. *Helen E. Watney, Liss, Hants.*

Lumino Mycetium.—In the *Gardeners' Chronicle* for December 4, 1876, p. 719, will be found an illustration and description of a remarkable case of phosphorescent fungus-spawn found permeating entirely through the wood of a rotten stump of Oak. Captain H. King, of Chichester, Petersfield, who kindly forwarded the original materials to us, has kept the spawn-infested stump in view, and the mycetium now has produced a fine crop of Agaricæ and other fungi. Captain King has obligingly sent me another portion of the stump with the Agaricæ *in situ*, and they apparently spring from the same dense white spawn which was luminous a year ago, but it is not luminous now. *W. G. S.*

The "New Danger for Orchard Growers."—I am obliged to Mr. McLachlan for recalling my attention to the work of Entomologist, and a remarkable case of phosphorescent fungus-spawn found permeating entirely through the wood of a rotten stump of Oak. Captain H. King, of Chichester, Petersfield, who kindly forwarded the original materials to us, has kept the spawn-infested stump in view, and the mycetium now has produced a fine crop of Agaricæ and other fungi. Captain King has obligingly sent me another portion of the stump with the Agaricæ *in situ*, and they apparently spring from the same dense white spawn which was luminous a year ago, but it is not luminous now. *W. G. S.*