



and an excellent bedder; Mons. H. Stenger, white ground, striped and flaked with crimson; Mrs. Mole, clear lavender, a pretty and attractive self flower; Mrs. Pochin, bright pink, with white eye; the old Purple King; Richard Dean, bluish purple, with large pure white eye, does not burn, and an excellent free branching trailing habit; Shirley Hibberd, shaded plum-purple, white eye, a good distinct bedding Verbena; Sylvia, pink, stained with crimson in the centre; and Triomphe de Massifs, pale blue, with dark centre, fine and showy.

The Verbena can be used in two ways in the flower garden, either by massing one variety with a view of obtaining a certain hue of colour, or by filling a bed with plants of different varieties. The last method is a sure means of obtaining an effective display, and deserving of commendation. As a general rule the plants should be placed in the bed about 15 or 18 inches apart, and it is a good plan to induce the plants to fill out at starting on that side farthest from the sun. A little judicious training soon accomplishes this. When the main shoots of neighbouring plants meet, it is well to pinch them back, as this induces lateral growth, and the side shoots fill up the intervening spaces, and so give a surface to the bed. A little attention is also requisite to keep the bed effective, and if the dead blossoms are kept removed by means of a pair of scissors, any unsightly appearance is prevented. A good holding loam, with some leaf-mould, and a fair sprinkling of sand, makes a capital soil in which to plant Verbenas. R. D.

Garden Memoranda.

CLEMENTS, NEAR ILFORD.—There is no more beautiful feature in hardy fruit culture than is to be seen in a well-ordered pyramidal fruit-tree orchard. The greater the extent the greater is the interest in it, and this is especially so with those who, like myself, have made the study and culture of fruit a speciality. I need not, therefore, say how much I was pleased with a recent visit to such an orchard, planted under the most favourable conditions, and under the supervision of our master mind in these matters, the veteran Mr. Rivers. It is at the seat of John Thompson, Esq., of Clements, just outside the walls of Ilford, though well within the range of that dire pest to all vegetation—the London smoke, that an orchard, some five acres in extent, and so planted, exists. It is but just to the owner to say, that Mr. Thompson was the landlord who, a few years since, made such a handsome offer to a proposed company of fruit growers, and who treated the abortive efforts of the projectors with so much liberality. Though I am not going to "stand up" for the projectors of the scheme, as I never had any doubt as to the issue, I am nevertheless bound to confess that these few acres, planted and treated on the same principle, point to a more favourable end. The trees consist mainly of Pears, Apples, and Plums, with a smaller quantity of most other hardy fruits. The former are planted in rows averaging 9 to 12 feet apart, and were originally something like from 3 to 5 feet apart in the rows, which hold about 50 plants in each. The trees are planted at right angles with each other, so that lines diagonally pointing to many aspects are seen as we walk round. It is here that a very interesting view of the whole may be had, as the Apples, Pears, and Plums afford a striking contrast the one to the other, as do, to a lesser degree, the several varieties of even one and the same sort of tree. Taking the average height of the trees in this large field of pyramids as being about 9 feet, I leave the reader to imagine the beautiful contour of the whole.

Mr. Green, the much esteemed and intelligent manager of this orchard, who appears to know every tree by some extraordinary individuality which it seems to possess, has undertaken the extensive work of taking out every other tree, and by finding more room so increasing the extent of the orchard, which, in the end, will be second to none in the country—that is, if he maintains the beautiful form now possessed by these trees, when they become double their present size. Most cultivators, and myself included, I confess, would now and then have resorted to uprooting and root-pruning every other tree, say every third or fourth year. But Mr. Green does not seem disposed to treat his favourites thus harshly. And in view of the grandeur which such an orchard is likely to possess in the future, I would almost express a hope that the season after next, and the one following it, may not, by the abundance of fruit which his "moved ones" will carry him, make him a convert to opinions contrary to those held by myself and others. The Pears are mainly on the Quince stock, grafted low, and buried to above the union. Stakes are not used or recommended, though the strong winds of these parts, induced by the general flatness of the country around, are true "sou'-westers." The principle is good, for by inducing young trees to lean for support on such "aids" we induce weakly shanks, not half so sturdy as those that have been buffeted, strained, and tried from their infancy by every storm that comes. Of course there are some sorts which are double-grafted, a process which produces some very astounding results, one of which, a case in point, has come under my own notice, and to which I shall refer hereafter. The varieties which appear to be double worked here I took to be

such as Marie Louise, Gansel's Bergamot (these seemed unusually prolific for the sort, which is generally a shy bearer, even against walls), Knight's Monarch, &c. The intermediate stock no doubt consisted frequently of Beurré d'Amanlis, Conseiller à la Cour, and Prince Albert, which is about the only thing this latter is good for. As it may be interesting to those who may meditate planting, I may mention the following as being the varieties most extensively grown:—Bergamot d'Esperen, Bezi Mai, Beurré Giffard, Louise Bonne, Conseiller à la Cour, Beurré Diel, Catillac, Beurré d'Amanlis, &c.

Mr. Green seems thoroughly impressed with the fact that the early Pears are the best for market purposes, and the fact has a very practical illustration, for the varieties of this class in the above list predominate greatly. The "Williams" Pear, as the townsfolk ticket Williams' Bon Chrétien, is absent from the list, nor do I wonder at it, remembering Mr. Rivers' observation, "What, grow a street Pear!" Under an erroneous impression, Mr. Green, two years since, had all his Bezi Mai trees headed down half way, and regrafted with other sorts, but the fruit which the few remaining branches produced last season were so fine and well flavoured that he intends to give them headway again. I would however advise him to gain another year's experience, as mine showed two bad seasons to one good one, and it extended over a few years' practice, too. Cassante du Comice seems an especial favourite of Mr. Green's, though I never liked its shape. The Duchesse d'Angoulême, Napoléon, and my greatest favourite, the peculiarly round-leaved Suffolk Thorn, are also grown. Now to the double grafting question. There is in Hertfordshire a somewhat aged plant of Uvedale St. Germain. This tree is grafted upon the main shoot of the upper half of a goodly-sized Marie Louise, its lower half still existing, the roots being beneath an ordinary paved yard. The original Marie Louise never produced fruit, but the Uvedale yearly produces one of the finest crops of English grown fruit it is possible to see. I was once no disciple of the veteran father of double grafting, other than as a means of inducing early prolificacy or fruitfulness, but this grand Uvedale severely "gibes" (to use Mr. Disraeli's latest retort) at my former belief in these matters.

Amongst Apples the following sorts appear to be the most largely grown:—Cox's Orange Pippin, Cox's Pomona, Dumelow's Seedling, Sturmer Pippin, Stamford Pippin, Blenheim Orange, Waltham Seedling, &c. Of the above, Stamford Pippin and Waltham Seedling should be more generally grown, the former as a keeping variety and the latter for general prolificacy, which is beaten only by one other sort that I know, namely, Dredge's Fame. Amongst Plums are Prince Engelbert, Black Diamond, Victoria, Rivers' Early Black, July Green Gage, &c. Of these Black Diamond had set a heavy crop, and looked promising. Mr. Green had some remarkable examples of Sturmer Pippin on May 5, when I called. If I am spared a few years hence I hope to again visit this orchard, when size added to shape will confirm a beautiful whole, well assured of Mr. Green's enthusiastic kindness further to dilate on a commonly enjoyed theme—fruit lore. William Earley, Valentines.

THE WEATHER.

STATE OF THE WEATHER AT BLACKHEATH, LONDON, FOR THE WEEK ENDING WEDNESDAY, MAY 17, 1871.

Table with columns for 1871. MONTH AND DAY, At 9 A.M., and TEMPERATURE OF THE AIR. Sub-headers include Barometer reduced to 32° Fahr., Dry Thermometer, Wet Thermometer, Dew Point, Degree of Humidity, Weight of Vapour in a Cubic Foot of Air, Direction, Horizontal Movement, Rain. Data rows for 11. Thurs., 12. Friday, 13. Satur., 14. Sunday, 15. Monday, 16. Tues., 17. Wednes.

TEMPERATURE OF THE AIR AND FALL OF RAIN AT DIFFERENT STATIONS, DURING THE WEEK ENDING SATURDAY, MAY 13, 1871.

Table with columns for NAMES OF STATIONS, TEMPERATURE OF THE AIR (Highest, Lowest, Range of Week, Mean of all Highest, Mean of all Lowest, Mean Daily Range, Mean), and FALL OF RAIN. Stations listed include Portsmouth, Blackheath, Bristol, Birmingham, Wolverhampton, Leicester, Norwich, Nottingham, Sheffield, Liverpool, Manchester, Salford, Bradford, Leeds, Hull, Newcastle, Edinburgh, Glasgow, Dundee, Aberdeen, Paisley, Greenock, Leith, Perth, Dublin.

JAMES GLAISHER.

Miscellaneous.

THE DESCENT OF MAN.—Talk of the advancement of science! Why should the Royal Commission fear for its progress in Britain? Once let it become a subject for the balladmonger, and its vitality and vigour are secured. Here is one of the latest of London Street-Ballads, bearing evidence, however, of an amount of erudition much beyond what is usual in such cases:—

"DR. DARWIN (NEW EDITION).  
Tune—"King of the Cannibal Islands."

Oh, Doctor Darwin he's the man,  
To tell us how the world began;  
You may believe him if you can:  
Sing oh, for Dr. Darwin.

Now peers to Heralds' College throng,  
To learn to whom they all belong,  
For all their quarterings are wrong,  
According to Dr. Darwin.

Hokey, pokey, monkey fum,  
Wonders never will have done—  
Huxley and Lubbock, and every one,  
Supporting Dr. Darwin.

Some trace their pedigree so far,  
With garter, coronet, and star,  
Yet no one knows how old they are,  
According to Dr. Darwin.

The Howards and Gowers, and all that lot,  
Were born to be, I know not what;  
But whence they came at last we've got,  
According to Dr. Darwin.  
Hokey, pokey, &c.

It's true that all these aristocrats,  
May bill and coo like ava-da-vats,  
And yet they come from water-rats,  
According to Dr. Darwin.

The aphid on the Rose you find,  
Green grub in frothed saliva blind,  
The father is of all mankind,  
According to Dr. Darwin.  
Hokey, pokey, &c.

My lord himself from being an ape  
Has had a wonderful escape,  
So Providence doth all things shape,  
According to Dr. Darwin.

And much, he says, he would prefer  
A monkey for an ancestor,  
Than Belle Sauvage for progenitor,  
According to Dr. Darwin.  
Hokey, pokey, &c.

Some monkeys they are wondrous kind,  
And some apes have no tails behind;  
And that's where they're so like mankind,  
According to Dr. Darwin.

Baboons will orphan monkeys lend,  
Like London orphan's Christian friend,  
Moved by one feeling to one end,  
According to Dr. Darwin,  
Hokey, pokey, &c.

With birds themselves, than men more blessed,  
The males the more they're gaily dressed  
By females are the more caressed,  
According to Dr. Darwin.

The fish in shore and out at sea,  
Related are to you and me;  
Think of that when you've shrimps for tea,  
According to Dr. Darwin.  
Hokey, pokey, &c.

To think a baby that has gone  
Thro' every phase before 't was born,  
Should end in becoming the Marquis of Lorne!  
According to Dr. Darwin.

If ever since the world began  
We rise by pre-concerted plan,  
Why call it the descent of man,  
According to Dr. Darwin?

Hokey, pokey, &c.

And Horace must have been a fool  
To press upon us when at school,  
'Nos Nequiores,' as a rule,

According to Dr. Darwin.  
If Nature ever must progress,  
What we may be we cannot guess,  
And why we ever were still less,  
According to Dr. Darwin.  
Hokey, pokey, &c.

And as the races intermix,  
You can't be certain about the chicks;  
What can't you graft on Brier sticks,  
According to Dr. Darwin.

If marriage be arranged above,  
And crow be wedded to a dove,  
It shows how we get crossed in love,  
According to Dr. Darwin.  
Hokey, pokey, &c.

And as one great law governs all,  
The weakest must go next the wall:  
It's been so ever since the fall,  
According to Dr. Darwin.

To nations having greater sense,  
We'll push inferior races hence,  
Who'll emigrate without expense.  
We're not alarmed tho' Darwin sing  
Some men have tails, and some a wing;  
We know there's good in every thing,  
So a fig for Dr. Darwin.  
Hokey, pokey, &c.

London: Printed at the 'Catnach Press,' by W. S. Fortey,  
2 and 3, Monmouth Court, Seven Dials, London. The oldest  
and cheapest house in the world for Ballads (4000 sorts)."

REMARKS ON NEW PEARS.—We advance but slowly in new good kinds of Pears, but not more than five per cent. of the new varieties raised from seed on the Continent are adapted for universal cultivation; some kinds are good in the south of England, and never good north of Trent; still, they are so capricious in their choice of site and soil, that in many valleys in Scotland some kinds ripen well, and are of better quality than they are in the north-east of England. The season of 1865 had a remarkable effect on early Pears; they ripened too rapidly, and for the most part were very inferior in quality. Double-grafting of Pears will ultimately have a great effect on their culture in gardens—they seem always to make healthy and prolific trees: it must not, however, be concluded that to graft a free-growing sort of Pear on the Quince, and then to re-graft it with the desired sort will always answer. Some kinds require the stock belonging to their race; this can only be found out by the clever cultivator—as, for instance, the Jargonelle on the Beurré d'Amanlis, the union of which is so perfect, and the trees thus formed so healthy, that an acre of double-grafted Jargonelle Pears would be a little fortune to a gardener. Gansel's Bergamot double-grafted, becomes a marvel of fertility, and the sorts raised by the Rev. Mr. Huyshe, all of which are of great excellence, become most fertile trees when double-grafted on the proper kind of stock. When this scientific method of cultivating Pears is fully understood, those who introduced the culture of the Pear on the Quince stock will have warm thanks from all lovers of fruit-tree culture. *Rivers' Fruit Catalogue.*

RICE.—The use of Rice as a breadstuff is probably coeval with the human race. Like that of the other cereals it extends beyond the reach of record. Under the name of *oruz* in Arabic, *orusa* in Greek, *oryza* in Latin, *ris* in French, *reis* in German, and *rice* in English,—it has been known to history for two or three thousand years, being mentioned by Theophrastus 2200 years ago, and by Horace, Pliny, and Celsus at a later date. Its native place is probably the steaming river bottoms of India, whence it travelled eastward and northward to China and Japan, and westward to Egypt and to us. When it reached Egypt we know not; early enough, however, as many think, to give rise to that singular exhortation of the royal preacher of Israel, 2800 years ago, in which, alluding probably to the mode of sowing Rice on the swollen surface of the Nile, he says, "Cast thy bread upon the (face of the) waters: for thou shalt find it after many days," Eccles. xi. 1. After being introduced into Italy from Greece, as we learn by the form of the name, and being domesticated for centuries in all the southern countries of Europe, it was carried, in the year 1695, to the then infant colony of Carolina; where it was soon cultivated to such extent, and brought to so high a degree of perfection, that the Rice raised upon the southern seaboard of the American colonies, now the United States, has been ever since known in Europe as Carolina Rice. As an article of food it surpasses in importance every other cereal in present use. Wheat may be more nutritious, Rye more hardy, Maize spread over a wider range of temperature—but Rice feeds the greatest number of human mouths. Among the swarming millions of the tropics, and of China, it occupies the same place as Wheat in the warmer parts of the temperate zone, and Rye in the colder. It has been estimated that, if the human race were divided into families according to the predominant use of the several grains, the Rice eaters would occupy the first place in number; while Wheat and Maize would contend for the second, with a fair promise of victory to the Maize; and the fourth place would be held by Rye, Oats, and Barley. Indeed, besides being "the staff of life" in the most populous

parts of the earth, it is now so extensively used among all the other grain-eaters of the race, that it is questionable whether a greater amount of it is not consumed as a breadstuff than of all the other cereals combined. Among botanists it is known by its Latin name, *Oryza*. There is but one species, though there are many varieties; for the wild Rice, so called, of the North American ponds and lakes, is not a rice, but a Reed—not an *Oryza*, but a *Zizania*. Food chemists tell us that it contains "less of the nutritive principle than Wheat." This, however, is in some measure compensated by the fact that of all the cereals it is the most compact—a merchantable bushel of Maize, or Indian Corn, being rated at 56 lb., and Wheat at 60 lb., while Rice, which rarely sells by bulk, and therefore has no established standard like the others, seldom weighs less than 65 lb. to the bushel, and oftentimes more. Its compactness is shown also in its resistance to being crushed, having almost a gravel-like hardness; and also in the fact that skilful boiling will cause it to expand and double, perhaps treble, its former bulk. But, however weighty in the scales, it is exceedingly light upon the stomach. In general wholesomeness, in delicacy of flavour, and in the variety of uses to which it is applicable, it is probably not surpassed by any other grain. To the strong stomach of the day labourer it is as well suited as the coarse bread of the Indian Corn, Rye, or Oats; while for the delicate appetite of the invalid, or for the tender organs of the babe, it is a safe substitute for sago, arrowroot, tapioca, or cassava. *Food Journal.*

ADONIS VERNALIS.—One is often surprised not to see this beautiful hardy plant more often cultivated. Mr. Robinson calls it the queen of all the Buttercup race, and so no doubt it is. The plant grows about a foot high, and with its finely cut leaves, and bold pale yellow flowers, is really a striking object, when it thrives well, which it does in light or peaty soil, and in a situation where it is not too much exposed to drought or drying winds. It belongs to a group of the genus which has black acrid purgative perennial roots, and is distinguished from the well-known annual species of Adonis or Pheasant's-eye, by having the fruits or caryopsides terminated by the recurved styles. It is a capital plant for the permanent spring garden, flowering in the month of April, and is of a lively and showy character.

## Garden Operations.

(FOR THE ENSUING WEEK.)

### PLANT HOUSES.

*Achimenes*, which have made a robust growth under the favourable conditions of moisture, shade, and heat, should be removed to a more airy and somewhat lighter position, where the formation of flowers can be more freely carried out. They must be neatly and carefully tied out to fine small sticks, every shoot being separately supported. In instances where plants are grown as single specimens, of course they must be staked in accordance with their requirements. The above remarks apply in some degree to *Gloxinias* also. Pot on successional *Fuchsias*, taking care to afford but moderate shifts at a time. Stove climbing plants, such as *Allamandas*, *Dipladenias*, *Stephanotis*, *Gloriosas*, and many others, being now engaged in active growth and commencing to show bloom, must have frequent attention in reference to tying them out neatly, as to neglect them in this wise will cause much unnecessary trouble, and some injury to the blooms hereafter. Many inferior specimens, or varieties of greenhouse plants of minor importance, may now be removed into pits or frames where proper protection can be afforded, thus to make more room for those which remain to perfect their growth with all the more freedom. Any specimens which look shabby, from whatever cause, may now be cut-in somewhat severely. It is better to make them conform to the will and the wishes of the culturist, or to destroy them, than to keep decrepid specimens which require as much room, time in watering, and like attentions as the best. Proper attention should now be given to all kinds of plants intended for winter decoration, especially such as *Pentas carnea*, *Euphorbias*, *Begonias* (which should be well pinched back), *Gesneras*, and the more hardy *Salvias*, &c. Give to all pot plants an abundance of water at this season, of course avoiding always any semblance of stagnation, which is one of the worst conditions under which a plant has to live—a strictly artificial regimen. Those who afford the aid of a little additional heat to their *Camellias* during their growing season, should remove them back into an intermediate temperature, and from thence to their own cool house, immediately it is perceived that they have ceased to form more growth. To allow them to remain longer will be to reduce their ulterior flowering capabilities at the expense of an increase of wood-buds, beside unduly hastening those bloom-buds which do form, causing them sometimes to bloom in the early autumn when their flowers are of little or no value at all. Amateurs and others with limited means may keep a little freshness in their glass structures by selecting now the most bushy from amongst the *Pelargoniums* grown for bedding-out purposes, potting them liberally and encouraging a free growth by affording air plenti-

fully and watering freely as the season advances. These of course in connection with, and as aids to, other kinds of plants grown.

### FORCING HOUSES.

Maintain now in *Pinerias* an average temperature of from 64° to 65° by night and 75° to 76° by day,—this by artificial means, when the outer elements do not help to maintain such a warmth. With the latter permit a rise of from 8° to 10° more, by means of sun-heat alone. This, as will be seen, will give a maximum during the finest weather of 85° to 86°, which will be ample for some little time to come. Where "fruiters" can be maintained in a separate structure it will be possible to allow the sun-heat to increase the temperature by another 5°, when the fruits are advancing to the ripening state. With the increase of light and its concomitant warmth, continue to increase the supply of atmospheric humidity. This is done by constantly sprinkling over the floors and all internal cool surfaces, as frequently as these continue to dry. Besides this, the troughs which should be attached to the iron piping or such other vessels as contain water placed in their vicinity, should be kept constantly filled with water to aid in a great degree, which they do, though unperceived, in diffusing a really natural humidity intermittently. Shut up for the afternoon to afford a growing period, and to "box up" some of the sun's warmth—both as being more natural and to decrease the expenditure of artificial heat throughout the hours of night—now somewhat later than heretofore; on fine bright warm days 4 P.M. will now be sufficiently early; to do so much sooner in the afternoon will cause the thermometer to rush up too high for the good of the plants. These remarks are apposite to the more general requirements of vinerias, which require every aid to facilitate growth. The period I allude to is from the time when the rods have pushed young side-shoots to the extent of carrying two or three expanded leaves, until the berries are set and have made the major part of their first swelling. Heat and moisture will produce growth; but something more is needed to produce the crop. It is air, fresh, free, buoyant, and ever changing, in connection with light, that gives the fibre. The two, when admitted to pervade every space around, are always busily engaged, unperceived yet unerringly, in the delicate and more subtle processes which finally bring the cultivator through successfully. This necessary fresh air, the uninitiated should understand, must be admitted, however, in such a temperate form, so divested of draughtiness with its attendant chills, that no possible excuse for a check be allowed. A check, bear in mind, does not always produce immediate injury. The leaves may still appear perfect, yet with their more delicate organism crippled to a great degree, just as the animal form may appear intact, although the direst malady be latent within. If these suggestions are carried into practice, Grapes of the finest development will be had in return, but not otherwise.

### HARDY FLOWER GARDEN.

As we may now fairly anticipate that all danger from frost is past, the necessary work of bedding-out should be pushed forward vigorously. Endeavour to aid the effect of the ordinary family of bedding plants by adding, for greater variety, any semi-hardy subjects which can be spared from cool greenhouses. Some climbing plants give much aid in this wise, and afford a pleasing contrast to the popular *Clematises*, which make such a feature in every form of skilful gardening. *Cobaeas*, *Sollyas*, some *Tuberous Tropaeolums* (such as *T. pentaphyllum*), exotic *Ipomeas*, &c., may be used with advantage. In the case of the commoner sorts, it is often best to proceed with the bedding out, leaving some of the more delicate plants, used for the beauty of their foliage, until the last. These comprise such as *Coleus*, *Ricinus*, *Canna*, *Ficus*, *Caladium*, all of which thrive so very much better where, by the aid of fermenting materials, a little bottom-heat can be provided in the beds. Even the mowings of lawns, shrubberies, &c., would afford these means, as green substances heat quickly and certainly when placed together in sufficient quantities. Do not, however, place too much of such materials together, as they may cause too great a heat for the roots of newly planted subjects.

### KITCHEN GARDEN.

The work in this department will now be more or less a repetition of that of last week—hoeing weeds, moulding up anything which requires it, sowing successional crops of *Peas*, *Beans*, &c., so soon as the previous crop is through the ground, and attending to the crops in reference to the attacks of insects. See that all main crops have come up well, and should any fail set to work quickly to make up the deficiency by sowing again. Sow early Dutch or early Horn *Carrots* where a constant demand for fresh young ones exists. Plant out at the foot of south or south-east walls with sunny aspects the stock of *Tomatos*, tacking them up to the walls forthwith, as an additional protection during cold nights. Break off the seed-vessels upon autumn-sown *Onions*, and twist their green tops down towards the ground in such a manner as not to break them off, but yet to cause them to lie on their sides, by which means they bulb more readily. Successional sowings of *Spinach*, *Radishes*, *Lettuces*, and the smaller salads should not be overlooked. *W. E.*