

HORTICULTURAL SOCIETY OF LONDON.—

EXHIBITIONS AT THE GARDEN.

Notice is hereby given, that those for the year 1849 are fixed for SATURDAY, May 5; SATURDAY, June 9; and WEDNESDAY, July 11.

The Gardeners' Chronicle.

SATURDAY, JULY 22, 1848.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
 TUESDAY AUGUST 1—Horticultural 3 P.M.
 FRIDAY — 4—Botanical 8 P.M.

We formerly drew attention to the ARRACACHA, as a possible substitute for Potatoes, and drew a conclusion unfavourable to it. Since that time it has been re-introduced, and therefore we think it desirable to give the following views of an intelligent gardener, who has seen something of the nature of the plant.

The adaptation of the Potato for widely different climates, when in its former vigorous state, was a very remarkable fact; and fresh proofs, we hope, will again continue to be afforded by healthy plants. It has been cultivated from the equatorial table-lands to the verge of the polar regions; it produced thirty-fold, in 1846, at the manse of Loevaars, in the northern district of Iceland. It is scarcely less astonishing that whilst the Arracacha grows side by side with the Potato in South America, and there rivals, or even outrivals it as regards amount of alimentary produce, yet the cultivation of the Arracacha has hitherto proved almost a complete failure in Europe. Experience, and a better knowledge of its habits, may, however, greatly tend to obviate the difficulty. We can command temperature, regulate both it and moisture, and afford various soils; but we cannot condition the plants as on their native table-lands in regard to the density of the air. Contrasted with their climate, our comparatively low mountain districts are too cold; and near the level of the sea the pressure of the atmosphere is nearly one-third more than on the elevated situations where the Arracacha naturally grows; for example, at Bogota, at 9000 feet elevation, the atmospheric pressure will be upwards of 4lbs. less on the square inch than it would be anywhere near the level of the sea: and this being the case, evaporation from the surface of the leaves will be proportionably facilitated; for, according to Professor DANIELL, evaporation is inversely proportionate, *ceteris paribus*, to the elasticity of the atmosphere. Hence it may be computed that a plant evaporating 30 grains in a given time in the Andes of New Grenada, would evaporate little more than 20 grains in the climate of London. The Arracacha may, therefore, be expected to thrive best in an airy situation, provided it is not too cold. It has been ascertained that it will not bear the moist, warm, and, of necessity, somewhat confined air of a Vinery.

A memoir, by M. GOUDOT, entitled, '*Culture de l'Arracacha et possibilité de l'introduire en Europe*,' affords interesting information respecting this remarkable plant.

In planting the Arracacha, buds or shoots taken off with a heel from the crown of the root are employed. To obtain these the crown is cut off horizontally; and this fleshy circular base is then divided into numerous segments, each forming an entire base to a tuft of petioles. These detached pieces are planted very shallow, in moist soil, about 2 feet apart. Under favourable circumstances the leaves are developed in a few days; their growth is rapid, and in several weeks they completely cover the ground, which must previously be kept clear of weeds. The crop is taken up before the plants commence running to flower, and this is indicated by the external leaves acquiring a slight tinge of yellow. At this stage of growth the root, which is the special object of cultivation, presents an irregular fleshy mass, with numerous fusiform ramifications, furnished with fibres, from its lower part; these ramifications are the tenderest portions for food. In good soil, a root will weigh from 4½ to 6½ lbs. At Ibague, M. GOUDOT has known the produce to weigh 41,000 kilogrammes per hectare, or upwards of 16 tons per English acre.

The amount of nourishment which this root contains is probably less than that afforded by the Potato; for, by analysis, it was found that for equal weights, and for the same proportions of starch and albumen, the Arracacha contained a greater quantity of water.

The mode of propagation described by M. GOUDOT, *la bouture en talon*, buds or sprouts taken off with a heel, may not be so practicable in Europe, where of course winter intervenes between the taking up of the roots and the forming of a new plantation; and there may be some difficulty in preserving a mass of reproductive crowns till the time of planting in the ensuing season. It may, therefore, be necessary to winter some entire roots in a cave or

cellar, from which the buds or sprouts may be detached at the moment of planting. In this manner Carrots and Beet-root intended for seed are preserved; and it remains for experience to decide whether such mode of preservation may not prove suitable to the Arracacha.

M. GOUDOT attributes the bad success which has attended various attempts to cultivate this plant in Europe to a want of knowledge in regard to the method of propagation, which he has detailed as above; and which mainly consists in planting, not the entire root, but merely the buds or embryo shoots, detached from the crown with a little of the fleshy substance at their bases. He thinks it is labour in vain to attempt the production of seeds; for they are difficult to obtain, and are generally imperfect even in the native country of the plant.

It is necessary to observe that there is a great discrepancy between the temperature which M. GOUDOT seems to consider necessary for the growth of the Arracacha, and that which may be considered sufficient, by inference from other sources of information. M. GOUDOT mentions 71° as the mean temperature of Ibague. Mr. HARTWEG states, in the "Transactions of the Horticultural Society," that Bogota enjoys a mean temperature of 56°. The plateau of Bogota is said by geographers to have the climate of Britain, or even of Scotland, but without the extremes, the thermometer seldom falling below 40°, or rising above 70°. This would give a mean of 55°. On this plateau the Arracacha thrives well, as is stated by M. GOUDOT himself in the "*Revue Horticole*." In the climate of London we have, from an average of 20 years, a mean temperature in May of 55°; June, 60°·8; July, 63°; August, 62°·3; September, 57°·4; the mean temperature for these five months being between 59° and 60° Fahrenheit. We may, therefore, conclude that we have sufficient heat in these months for the perfect growth of the Arracacha in the open air. It is even stated by M. GOUDOT that it will succeed under the same circumstances of soil and climate that are suitable for the Potato, and that he has seen fine plantations of it in the Andes in localities possessing a mean temperature of 57° to 71°. There may be difficulties as regards the extremes of temperature; but this must be determined by experience. In the meantime, attention should be paid to the mode of propagation, as above pointed out. We believe the great cause of failure has been owing to planting the entire root, which having only a biennial nature, of course soon died; whilst the buds at top, from not being taken off and put in a position to root and form a fresh mass, of necessity ultimately perished.—||

We continue the evidence as to the POTATO DISEASE, concerning which we state most reluctantly that there is not one symptom of improvement, but the contrary; for places to-day declared free are to-morrow reported to be suffering suddenly and rapidly. We have this week received from Mr. HOLLAND, a surgeon residing at Battel, in Sussex, the *green tubers, found on the stem*, in a state of thorough disease—a case we have not seen since 1846. All eyes are of course turned to Ireland, whose climate is so much like that of Cornwall and Devonshire that the formidable progress of disease in those counties is of the worst augury.

CORNWALL.—It is spreading rapidly, although it is only a fortnight since the first symptoms were observed in the garden. The haulm of the whole plot is now entirely destroyed. I have noticed its appearance in the main crop on the downs, but in no instance as yet have I met with a diseased root. It seems now perfectly hopeless to grow Potatoes as formerly; *W. B. Booth, Carclew*.

DEVON.—Disease almost universally attacking the crop, with an intensity little, if at all, inferior to that of 1846. In many places they are already putrid. Seedlings are the greatest sufferers; such, at least, is the case in my garden, where a considerable bed, raised under glass, has become, within the last fortnight, perfectly black and fetid; *S. R., Bideford*.

ISLE OF WIGHT.—The Potato disease made its appearance in my garden the 14th inst., its progress since that time has been very rapid. I understand the disease has shown itself to a great extent in the cottage gardens in this neighbourhood during the last 10 days; *Wm. à Court Holmes, Westover, Newport, July 17*.

HANTS.—From this part (Andover-road), to Winchester, Southampton, and for many miles round, the Potato disease is spreading dreadfully. Should it continue as it has for the last 10 or 12 days, the greater part must perish, if not all. At present, Shilling's seedling Walnut-leaved Kidneys and the earliest Julys are the worst. Sixteen miles the other way, betwixt Basingstoke and Kingsclear, they are quite as bad; *J. A., July 17*.

SUSSEX.—Disease has spread over the whole crop. The tubers not injured to any serious extent; *A. Stewart, Hindon House, near Arundel, July 18*. Spreading fast at Puttenham, near Guildford: equally virulent in neighbouring parishes; *S. W.*

KENT.—Potatoes in my field have been seized by the disease in its most virulent form, giving out a nauseous smell, perceptible in an adjoining field; *C. Darwin, Farnborough, July 13*. Fast spreading in this locality, more particularly on damp soils and enclosed gardens; *John May, Pat's Cray, July 12*.

SURREY.—This morning I discovered in my own garden the fatal blotch on the haulm of late-planted Ash-leaf Kidneys and Early Shaws. Within a quarter of a mile from my house I have seen a patch of Early Shaws in a market garden perfectly black. The disease is said to have attacked many gardens, and some few fields in the neighbourhood; *J. G. Hodgson, Croydon Vicarage, July 19*.

BERKS.—The plant is partially attacked with the disease; in some cases completely gone, so much so that they smell as you approach the plants. There is still a large plant in appearance healthy. We had a sharp frost on the morning of the 1st inst.; *Amicus, Newbury, July 18*.

HERTS.—No appearance here; *W. Ingram, Hatfield, July 13*. Has now appeared decidedly in gardens; *Ib., July 19*.

BEDS.—The disease appears to be almost, if not quite, as common as it was two years ago. The progress within the last few days has been most rapid; *Thomas Bennett, Woburn, July 17*.

GLOUCESTERSHIRE.—Disease first observed in the rectory garden on June 30th; the tubers nearest the surface the worst. Of the three kinds diseased, the Ash-leaved Kidney, China Orange, and Ashton Kidney, the first was planted in February, the second and third in March, all in manured soil. Of the first about 1-10th is already lost; of the China Orange nearly the whole; and of the Ashton Kidney about 1-20th; but as the disease is fast spreading over the Ashton Kidney, the loss on this kind cannot be calculated. A crop of Ashton Kidney planted in April, in soil manured with burnt weeds, is at present very healthy. Since the 9th July, notwithstanding continuance of dry weather, the disease has appeared in the cottagers' and farmers' gardens. The field crops appear free as yet; *R. M. W., Slymbridge, July 17*. The state of the crop very alarming. The accounts surely confirmed by persons of undoubted probity. Some state that nine-tenths, others that half of the crop is already gone, with very little chance of saving the remainder, except by immediate use; *J. S., Bristol, July 20*.

CAMBRIDGESHIRE.—I have this day seen the Potato disease in a bad form in a field near this town, and learn from Mr. Murray (our botanical garden curator) that it is in several other places in the neighbourhood. It has attacked the early Potatoes, and is several weeks earlier than in former years; *Charles C. Babington, St. John's College, Cambridge, July 18*.

WALES.—Within the last few days has made very rapid strides; the stems emit a strong odour; the tubers, however, with few exceptions, still remain sound. I have seen but two instances of late sorts being attacked; *F. Bridger, Abergwili palace, near Carmarthen, July 18*. About Llandilo, but its progress is not so rapid as it was last year; *H. Bundy, Dynevor Castle, July 15*. It has shown itself in this county in very many instances, and it certainly is much worse where the Potatoes were planted on undrained soil; *T. Baker, Newtown, Montgomeryshire, July 19*.

HEREFORD.—There is a very general complaint of disease in the cottage gardens in the low districts; haulm and young Potatoes half rotten already. This does not seem to affect the Potatoes sown in the fields, nor even in the gardens on the higher grounds. I see no appearance of disease in my own crop. The reports from the adjacent district of Wales (Radnorshire) are also favourable; *John Cheese, July 15*.

NOTTS.—Failures and disease in many places; great complaints: scarcely a sound Potato to a root. The "American Natives" have gone so bad that scarce a sound one can be found; *Farrant, Newark, July 9*.

LANCASHIRE.—Has appeared to a small extent in many places; about one-sixth diseased in some situations; *Editor of the Preston Guardian, July 14*. In 1846 the Potato disease commenced about the 15th of July in this important district, from whence the Manchester, Liverpool, and Bolton markets are extensively supplied. In 1847 it began ten days later, and with much less injury. This year, after the recent wet weather, a few Potatoes were affected by the black rot, which is occasioned by heavy rain, and but few were found with any appearance of the brown disease until the 14th inst., when many instances were reported. On the 15th the smell and the decaying stalks indicated that many fields were infected; and now, on the 17th and 18th, the complaints are general; some affected to the serious extent of one-fourth or more of those got up for the markets; *E. West, Warrington, July 19*.

DURHAM.—As yet we have not the least appearance of disease; *James Roberts, Raby Castle, July 19*.

YORKSHIRE.—Rotten Potatoes and dying haulm received from *Mr. H. Turner, Richmond, July 19*.

SCOTLAND.—Disease noticed here on the 11th inst. in a small garden plot of Golden Dwarf Earlies, where it spread rapidly for a few days, but seemed to decrease in virulence as the weather became warmer and drier. It has since appeared among the earlies in many cottage gardens, but hitherto its effects have been more apparent in the roots and young tubers than in the haulm; *William Gorrie, Preston-hall, Pathhead-ford, Midlothian, July 19*.

IRELAND.—A few symptoms here and there are all that had been communicated to the *Irish Farmers*.