

## HORTICULTURAL EXHIBITIONS, 1894.

1.	London	1894	Entomological Exhibition
2.	Birmingham	1894	Entomological Exhibition
3.	Birmingham	1894	Entomological Exhibition
4.	Birmingham	1894	Entomological Exhibition
5.	Birmingham	1894	Entomological Exhibition
6.	Birmingham	1894	Entomological Exhibition
7.	Birmingham	1894	Entomological Exhibition
8.	Birmingham	1894	Entomological Exhibition
9.	Birmingham	1894	Entomological Exhibition
10.	Birmingham	1894	Entomological Exhibition
11.	Birmingham	1894	Entomological Exhibition
12.	Birmingham	1894	Entomological Exhibition
13.	Birmingham	1894	Entomological Exhibition
14.	Birmingham	1894	Entomological Exhibition
15.	Birmingham	1894	Entomological Exhibition
16.	Birmingham	1894	Entomological Exhibition
17.	Birmingham	1894	Entomological Exhibition
18.	Birmingham	1894	Entomological Exhibition
19.	Birmingham	1894	Entomological Exhibition
20.	Birmingham	1894	Entomological Exhibition

THE

## Gardeners' Chronicle.

SATURDAY, JULY 15, 1894.

APPOINTMENTS AND THE SERVICES YEAR.

Monday, July 16	London, 10 a.m.	Entomological Exhibition
Tuesday, July 17	London, 10 a.m.	Entomological Exhibition
Wednesday, July 18	London, 10 a.m.	Entomological Exhibition
Thursday, July 19	London, 10 a.m.	Entomological Exhibition
Friday, July 20	London, 10 a.m.	Entomological Exhibition
Saturday, July 21	London, 10 a.m.	Entomological Exhibition
Sunday, July 22	London, 10 a.m.	Entomological Exhibition
Monday, July 23	London, 10 a.m.	Entomological Exhibition
Tuesday, July 24	London, 10 a.m.	Entomological Exhibition
Wednesday, July 25	London, 10 a.m.	Entomological Exhibition
Thursday, July 26	London, 10 a.m.	Entomological Exhibition
Friday, July 27	London, 10 a.m.	Entomological Exhibition
Saturday, July 28	London, 10 a.m.	Entomological Exhibition
Sunday, July 29	London, 10 a.m.	Entomological Exhibition
Monday, July 30	London, 10 a.m.	Entomological Exhibition
Tuesday, July 31	London, 10 a.m.	Entomological Exhibition

We have been to call the attention of our readers to a discovery of the first importance made by Mr. WOODROUPE HIGGINS, in relation to the Potato Disease, and brought under the notice of the Scientific Committee of the Royal Horticultural Society at the 18th Inst. We also see interesting contributions to this subject in the *Scientific American*, which is carried in its own words in another column, and we heartily welcome the Society that in this paper of deep interest and the conclusions a number of the Scientific Committee should have by its brilliant discovery, but to avoid being too long, we will only refer to it. To those who wish to read more fully we have carefully abstracted and done their best to present the scientific character of the Society is most able by a number of practical gardeners. It is especially interesting to see how the practical remarks made by Mr. S. DIAL at the former meeting have been confirmed by this discovery of Mr. HIGGINS. Our mode of fertilization of the fungus producing the Potato Disease has, in our readers' eyes, been long known through the remarks of Mr. HIGGINS, Secretary, the HAVY and others. It has been corrected by Mr. HIGGINS clearly in describing the characters of the living spores and of the germination by which contact is brought. Mr. HIGGINS has witnessed and depicted the union of the two bodies just mentioned. We hope to be able to publish a valuable description of this in a subsequent number, and we trust Mr. HIGGINS will, stimulated by his success, pursue his researches and complete what little remains to be known of the life-history of this fungus. The abstract summary of Mr. HIGGINS's work was published in the *Journal of the Society of Arts*. Mr. HIGGINS's observations were brought under the notice of the Scientific Committee of the same Society the other day. Such are favourable to the Society, and whatever we hold it, it has secured the gratitude of sensible men throughout the world, by pro-

ucing the means of making these discoveries public. It is now for the practical cause to turn these discoveries to account, and though the progress is not rapid, they need not halt: no longer fall off as a wrong track. Not long since it was concluded that we might have been in Chicago at any place on the road by these same organs. We cannot say that this way can be, but in the meantime Mr. HIGGINS has found them at home in the Potato, and has conclusively shown that the "new Potato disease" concerning which so much has been lately written, is merely the old disease in a new guise. By some this plant is considered to be the old disease. It is only an opinion on this matter, but it is not, for the disease is happened, as it would prove the existence of the Potato fungus in this country long before the date of its newly designed appearance. The same difficulty, from a practical point of view, lies in the fact that the fungus and its vegetative parts and reproductive elements in the tuber, leaf, or stem, where they cannot be got at.

But about three since we had occasion to speak of it, in connection with the great additions to our knowledge of plant life and vegetable physiology that had been made directly by Mr. DARWIN, and which had several indirectly from the great inquiries which he and other had given to other workers. We also took occasion to allude to the benefits that practical horticulturists must inevitably derive from his researches when the knowledge of them shall have become sufficiently known, to be applied to the garden. It must also be kept in mind that many of his theories would practice to adapt their premises in connection with the discoveries of Mr. DARWIN, without being at all aware that they are included in him in the first instance. A work was written on this the same matter last, supplies additional confirmation in these remarks. The book in question, which is entitled *How to Grow Potatoes*, is included in a very good degree in the collection of those observations which have made Mr. DARWIN's position more and more able. We have the same clear statements of fact, the same evidence of patient and laborious research, the same simple simplicity of expression, the same conviction as to give the truth and acknowledgment to the necessities of others, the same excellent practice of repeating and summarizing important details, the same weaving together into one strand of all the facts and all the admissions, the same conscientiously earned good-faith, which leads the reader to turn from point to point, and at the end leaves him to draw his own conclusions from the author's conclusions. Our readers have been prepared by this book by the numerous horticulturists that have appeared in the shape of different names and periods of observations that have been made from time to time of late years in this country and in America.

The subject of Dr. HIGGINS and numerous plants at the last meeting of the British Association at Birkbeck, under the presidency of the subject, and to prepare the way for Mr. HIGGINS. We must, however, refer to the volume itself for the history and philological references pertaining to the subject, as we can only indicate, and that briefly, some of the leading points in this new work, and equally briefly point our readers to admirable horticulturists.

The work, then, is a record of experiments, and observations made on the various diseases, Potato rot, and other diseases, as well as on Potatoes and Potatoes. These observations and experiments only be

conducted by HIGGINS upon himself, many of these must have required very great care and some delicate manipulation. To avoid risk of error they have been repeated and conducted over and over again. It is necessary to manage this, though the first can be termed of the great value and interesting nature, which have been followed without touching the work itself. The object of these experiments was to ascertain how the plants in question capture insects, and what they do with them when caught. The results in some cases are very extraordinary. At various times light is thrown upon some phenomena of the relations of plants, and in several particulars the results are so remarkable that when we have heard of them our readers of course we were disposed to be incredulous and surprised. With the full record before us doubt is no longer possible. There may be occasionally a wrong wording of them, there may be a faulty interpretation here and there, or the observations may occasionally bear an explanation different from what is put in them; that may be so, but, taking the book as a whole, as written to say to a physiologist will certainly be well read, and the interests of horticulture.

It is not necessary for us to describe the general appearance and outer mechanism of the bodies, the *Vicia sativa*, or the *Urtica*, as we may safely assume that they are known to most of our readers, while in the case of the more obscure, the *Abrus*, and other plants mentioned in this volume, there is the less necessity for us to refer to them, as the general remarks following for a few differences of detail will be taken up in the case of some of the smaller plants. The terms used in the book are derived in the common English, French, or scientific. We cannot pretend to follow Mr. HIGGINS in all his verbal expressions on this point, but we may say in brief that the leaves of this plant are provided with glandular hairs, which secrete a viscid fluid which serves to divide any insect, fly or larva which alights upon the leaf. The hairs are gradually broken up and cover the surface of the leaf. More than this, if in the case of a portion (like the tip of the leaf) is placed any small object, organic or inorganic, then in the course generally of from one to three or four hours the marginal hairs—some of which, as Mr. HIGGINS calls them—bend towards it, so that an insect is conveyed from the leaf as it is directly affected by the impact of any substance to leave as a distance that is not nearly touched.

This is a parallel case with the *Urtica* plant, which is well known to many of our readers, and to others at a distance, having been long known to be the cause of the stinging sensation before observable in the glands changes in character—becomes acid, it becomes, in fact, analogous to the gastric juice, and performs the same other—of that of digesting animal matter.

Dr. HIGGINS involves not only relation but absorption of the solution, and Mr. HIGGINS's experiments go to prove that both processes take place in some instances, which have been shown by the microscope and other means, that the hairs were sensitive and mobile—and that they caught insects by virtue of their viscid secretion—was indicated to which the insects might be drawn by any secretion from the plant, but more than that solution could be absorbed. Mr. HIGGINS's experiments have been well done on our minds that, under the conditions he mentions, the leaves of these plants can and do digest, and liberate and absorb insects and other microscopic matter brought in contact with them, and in this way a considerable aid light is thrown on a still more question—the power of leaves to attract water by their surface. Now if the leaves of this plant can obtain

—Horticultural Notes. By Charles Denny, Esq., F.R.S. and L.S.M. Edited by W. G. Wood. London, 1894.

