

bedding plants in tolerable order; but annuals were the most gay at the beginning of October. It ought also to be mentioned, that a bronze statue, said to be of great merit, of General Havelock, whom Sunderland claimed as a townsman, occupies the highest part of the ground; near this is also one of those trophies so often met with in towns of less note—viz., a Russian gun. The Havelock monument is, however, well placed, and is said to be a good likeness of the hero, and the view from its base is very fine. A forest of masts is seen over the tops of the houses in the foreground—further off the glittering ocean, dotted here and there with specks of human handicraft slowly making their way to their destined port; and the town itself, though less ornamented with church-spires and monuments than some of more ancient date, is seen to possess few of the dirty narrow lanes and slums which disgrace so many cities of more renown. A peep at another public work will show that mere utility need not necessarily banish the beautiful, for in this both are combined.

SUNDERLAND WATERWORKS.—It is not usual that this class of undertakings is in any way connected with gardening matters, but the managers in this case have given their works such an ornamental character in the gardening way as to entitle them to notice—in fact, the floral beauties and good-keeping of the place make it a fashionable resort for those who do not object to a walk of a mile and a half from the town, and that mostly up-hill, for the waterworks are on very elevated ground, commanding the highest buildings in it. The salubrity of the air is great as well as the excellence of the water, to obtain which a steam-engine is at work lifting one hundred gallons each stroke, and that twelve times a-minute, and yet the noise is little, and of dirt there seems none. Very large basins of the crystal fluid, in which very small objects may be seen 12 feet deep, are surrounded with terraced walks, and these are bordered with turf-edging kept scrupulously neat, while the vacant ground is carved out into slopes, flower-beds, and borders, with groups of trees near the entrance.

Near one of the boundary-walls, which was covered with Roses and some Ivy, were groups of the most fashionable bedding plants of the day. Petunias seemed to do better than near London; *Lobelia speciosa* was flowering very well; while Geraniums, Verbenas, Ageratums, and Calceolarias were pretty good; and Gazanias remarkably so. Amongst annuals were Saponaria, Asters, Stocks, Phlox Drummondii, Mignonette, and French and African Marigolds, with some few patches of *Gladolus*, all in good keeping; and in an out-of-the-way corner I noticed some common Primroses bedded-in under trees, doubtless to be brought forth for winter decoration. Amongst shrubs were some rather promising Yews and Ilexes, and the excellent keeping of the whole reflected great credit on all concerned. To my mind the raising of 1200 gallons of the purest water per minute from the bowels of the earth was not the least imposing feature, and the machinery seemed neither bulky nor noisy. The Directors in making their grounds so ornamental deserve the thanks of all, and it is to be hoped they will derive other and more substantial advantages as well. J. ROBSON.

VINDICATION OF GÄRTNER—EFFECT OF CROSSING PEAS.

IN my last communication I said that Gärtner had proved that the colour of the Pea in one variety of the garden Pea may be changed by the direct action of the pollen of another differently-coloured variety. Mr. Beaton authoritatively remarks on this: "Gärtner never found that—he only asserted it; and when he was pushed to the proof he lowered his sails, made a second edition of his great work, and confessed many of his errors." He adds, "No cross-breeder of any practice in England at the present day would like to have his name associated with that of Gärtner for or against any exploit in crossing."

I should have taken no notice of this, although I should be sorry to lie under the imputation of having made an entirely incorrect statement, and although it is not pleasant to be flatly contradicted; but I wish much to be allowed to endeavour to vindicate the memory of one of the most laborious lovers of truth who ever lived. It is painful to see a long life of honest labour repaid by contumely from a fellow-experimentalist, who, I suppose—anyhow I hope—never read one page of the great original work—namely, the "Bastarderzeugung," published in 1849, a mine of wealth to all who will explore it.

Gärtner, when young, and at the very commencement of his long work, committed a very foolish action; he crossed a

number of plants belonging to distinct genera without having taken due precaution to exclude insects, and when he found their capsules full of seed, he thought that he had succeeded in crossing them. With the enthusiasm of a beginner he most unwisely published the result, and to this first paper Dr. Herbert has alluded with proper blame. When Gärtner found his seedlings came up pure, he, like an honest and excellent man (as all who knew anything of his life will admit that he was), publicly confessed his error.

Gärtner's great and last work, entitled "Versuche über die Bastarderzeugung," contains in 790 closely-printed pages the detailed results of nine thousand distinct experiments in crossing, together with admirable observations on the whole subject of hybridisation. This is a greater number of experiments than, as I believe, have ever been published by any other man, even by Kölreuter, and a far greater number than those published by Dr. Herbert. One great superiority in Gärtner's work over those of Kölreuter, Herbert, and others consists in his having actually taken the trouble to count the seeds in the capsules of every cross and hybrid which he made. He kept an exact record at the time of making each experiment; and this I have reason to believe was not done by Herbert, and certainly has been very far from the case with other English experimentalists.

I cannot resist here mentioning—as some who honour, as I do, the memory of Dr. Herbert, might like to hear the fact—that I have reason to believe that the last words ever uttered by Herbert were on his favourite subject of crossing. I called on him in London, and saw that he was very feeble. I wished to leave him, but he stopped me, and talked with much interest on this subject. An hour or two afterwards, as far as I could judge by the published account, he was found dead in the chair in which I left him.

But to return to the Pea-question. An account of the various crosses made by Gärtner (he selected the most constant varieties) between differently coloured Peas, with the results given in detail, will be found at page 81 to 85 in his "Bastarderzeugung." Gärtner was led to try these experiments from doubting the accuracy of Wiegmann's statements, and he found many of them incorrect; but he was compelled to believe in the Pea case; not that Peas can be crossed with Vetches, to which other statement of Wiegmann Mr. Beaton alludes. I may add that Gärtner knew of the account, published in vol. v., pages 234, 237 of the "Transactions of the Horticultural Society of London," on the influence of pollen on Peas. In an old volume of the "Philosophical Transactions," vol. xliii., page 525, there is a full account, with every appearance of truth, of Peas in adjoining rows affecting each other. The Rev. M. J. Berkeley has, as I have been informed, subsequently to the publication of Gärtner's book, tried again the Pea-experiment with the same result.—CHARLES DARWIN, *Down, Bromley, Kent.*

GOOD-GRACIOUS PANSY.

WE observed in your issue of 20th inst., a letter of protest against the name given to the Double Pansy now offered for sale by us, and we shall feel greatly obliged if you will insert the following in reply.

The plant was submitted to the notice of Mr. Beaton, and spoken of by him in No. 66 of your Journal, page 248, under the name of "Good-Gracious" as follows:—

"The 'Good-Gracious' Double Bedding Pansy was sent in the name of Messrs. Carter & Co., and had a first-class certificate from a flying quorum of the Floral Committee, for they all seemed on the wing; but besides the Sub-Committee, who were appointed to do the honours of the Summer Shows, there were the Chairman, J. J. Blandy, Esq., and the Rev. J. Dix, who take the Chair in turns; the Secretary, Mr. Moore, and a lot of us; and we were unanimous in the award. Many ladies also seconded our resolve; and you may expect it next spring as cheap as it is good. But I have not yet had its genealogy, further than that it is a Devonian.—D. BEATON."

When we gave the plant the name of "Princess Alexandra," we had forgotten that Mr. Beaton had already introduced it to the notice of the public in the pages of your Journal under the name "Good-Gracious;" and not wishing to confuse the public by offering the same plant under different names, we of course reverted to its originally-published cognomen. We do not, however, wish it to be inferred from the foregoing observations that we agree with your correspondent's opinion, and desire to