

DARWIN'S FERTILISATION OF PLANTS.*

No work of Mr. Darwin's is deficient in interest. Apart from the vast importance of his striking and original doctrine...

The great majority of plants, especially those which are cultivated through the seed, are hermaphrodite in character. They not only bear both male and female flowers on the same stems...

Such exceptions must be anticipated as of course in any lengthened series of experiments upon flowers. But, as a general rule, that is to say in an immense majority not merely of individual cases...

It is equally curious that in some instances Nature has made no special provision for exclusive self-fertilisation. Moreover, it would appear that the original type of flower had the sexes separated...

All, as a rule, bred from one same stock, and consequently, generation after generation, more and more closely related and assimilated by being brought up under the same conditions...

It may seem at first sight inconsistent with what we know of the natural conditions of vegetable fertilisation that inter-crossing should be so necessary to the health of a stock. This would seem still more inconsistent with Mr. Darwin's own theory...

It is found, however, that nature has taken several precautions against the injury which would be done by universal self-fertilisation in the case of hermaphrodite, or perfect, flowers. In very many instances either the pollen is ripened considerably before the stigma is in a state to receive it...

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be brought up in great numbers under closely similar conditions and in masses, and therefore at once peculiarly liable, on Mr. Darwin's theory, to be injured by self-fertilisation, and at the same time some ample opportunities of being crossed. That they should have acquired such a condition to secure the latter is therefore in accordance with the author's doctrine.

LABOURERS DWELLINGS AND THE BOARD OF WORKS.

In yesterday's Standard a correspondent, under the initials "G.J.W.," favoured us with a communication on a subject the importance of which it is impossible to overestimate. It is evident that he has given the subject of "The fever den of London" careful and serious attention; and fresh probably from personal investigation of the repellent horrors of which respectability only now and then escapes the districts of insalubrious London, he is providing an adequate remedy, little wonder that he takes a somewhat pessimist view of the statistics. Happily all sensible people are now agreed that the first move in the direction of improving the moral and physical condition of the masses is to provide dwellings in which healthy existence is not impossible; and we believe that the Board of Works, in its present position, is well calculated to be one of the most enduring blessings on the map of the country. Liberal papers had much to say with regard to the permissive character of the Artisans' and Labourers' Dwellings Improvement Act; but by this time they must be disposed to concede that there was no inconsiderable measure of political acumen in its inception, and, what is far more important, that it is very far from being a mere paper scheme, and that it may fairly be said to have already borne good fruit, and in the fulness of time a harvest will be gathered which should cheer the heart even of the most despairing. In all large towns the need for such a stimulus as the Act furnished was great indeed, but now that action has commenced there is little doubt that it will increase in a geometrical ratio. All physicians agree that in the districts of insalubrious London, the death rate is double what it should be under fairly hygienic conditions from the prevalence of preventable diseases. There are scores of places in which medical officers of health could lay their hands where zymotic diseases of every type, typhoid, typhus, and scarlet fever, whooping cough, diarrhoea, consumption, and the malarial fevers, and dist are inseparable, and the case is somewhat peculiar, inasmuch as there seems to be a scheme on foot by a few local philanthropists to buy up the tenements, and build better dwellings on their site, though so far only 7000, has been obtained out of 20000 required. It seems now to be generally admitted that money can be safely invested in conferring such real and lasting benefits as this with the districts of insalubrious London, and we are much to anticipate that even private philanthropy will make this safely speculative when once the fact is fairly realised. To bring about a consummation so devoutly to be wished we must look mainly to the attention which must be aroused, and the interest which must be excited by the action now being taken by the Metropolitan Board of Works. Acting under the provisions of the Artisans' and Labourers' Dwellings Improvement Act this body has selected some of the worst of these metropolitan plague spots, and by the direction of the Home Secretary Mr. D. Child Nichols is now conducting a series of inquiries having for their object the verification of the facts on which the local medical officers of health have based their reports to the Metropolitan Board of Works, and the facilities chosen for this first important attempt to deal with the cause of the pestilence of the poorest class of metropolitan dwellings are Whitechapel, the City of London, St. Martin's-in-the-Fields, and the Strand, St. Giles's-in-the-Fields, Clerkenwell, Southwark, Westminster, and Islington. The proceedings at these inquiries deserve more extended notice and more careful consideration than they have yet been vouchsafed to them, for Mr. Child Nichols's investigation has a far-reaching character, which for the public good should be widely known and properly appreciated. He adopts the practical course of first calling the medical officer of the district, on whose official representation, under the act, the scheme of the Metropolitan Board has been framed. After hearing all that is to be said on the unsatisfactory state of the scheduled districts, he then calls on the medical officer of the Board of Works as to the remedy they propose. Each set of witnesses have to undergo the ordeal of cross-examination at the hands of counsel representing the owners of the houses and lands, and even of adjacent property that may possibly receive consequential injury from modification of access, alteration of levels, or other matters affected by the change. There is no reason to fear that the private interests of the owners will be protected, receive all the attention they are justly claim to, and we are confident that Mr. Child Nichols knew how to deal with a preliminary verbal objection raised by one of the learned solicitors, who sought to stave off or stop one of the inquiries altogether. The special interest attaching to these schemes is that the Board of Works, no doubt correctly advised as to the intent and meaning of the Act, are called upon to point out the defects in the proposed schemes, and to suggest, as many inhabitants of the scheduled districts would do, as many improvements as they may deem fit. Before finally advising to the beneficial power for the future good of the metropolis which is thus placed in their hands, it will be well, by more detailed reference to a few of these schemes, to indicate the character of the great work which they are opening up. Any one might be taken as fairly typical of the rest, though each has some characteristic of its own, such as the improvement of the Whitechapel, King's Cross, Minster, Harrow, and Elm-street, all in St. George's-the-Martyr, Southwark, there is to be dealt with comprises 61,052 square feet, on which 1350 people reside in 602 rooms. The district medical officer describes it as an area in which constant diseases prevailed, epidemic diseases, measles, scarlet fever, small-pox, and typhoid, diarrhoea, zymotic maladies. All the unhappy children were suffering from rickets, the women were, and notably deficient in vitality. In Miss Ball's-street, the houses are described as having gone utterly to ruin, the floors, stairs, and doors having fallen in, and only the wall-standing. In King-street drying fish appears to be the staple industry, and this is industriously pursued in the rooms, the street, and even the water-closets. Mr. Goddard, the valuer to the board, speaking of the houses in the following terms: "The houses were so old and saturated with disease that there was but one remedy. In regard to this particular locality, however, he spoke generally, for he said that having contracted typhoid two or three times during these investigations he judged in this case merely from the outside. Sir J. Swancliffe visited one room, tenanted by a woman with a small child, so begrimed with filth and dirt, with mud that he could compare it only to an Irish cabin, but without the one redeeming quality of most of the Irish cabins—plenty of fresh air outside. Many of the houses are back to back, and where this most unhealthy condition does not obtain they have no back windows, and therefore no through ventilation. The poverty of the inhabitants prevents them mending their sick, who die in hospitals and workhouses, and thus prevent an early removal of the cause of the disease. It is not so safely estimated as double that of the whole parish. The board propose to remove the buildings and to cover with buildings 47,841 feet, which would leave 42,611 feet of open space. The effect would be to substitute 45,811 feet of open space for only 7722 feet of open space at present. The estimated outlay is 59,763. From that would be deducted the value of the land to be used for building, or 24,627, leaving a net outlay of 35,136. Of this would be 47,351 feet of land covered with buildings 42,611 feet of open space. Taking one-half of the buildings as four stories high and half as five stories high, there would be space for 990 rooms. But the board only propose to stipulate for the erection of 180 tenements of one room, 235 tenements of two rooms, and 60 of three rooms, the total being 310 rooms in lieu of 990, which might be obtained by building 1000 more. The necessity for alteration declared that there was no disease in the neighbourhood but starvation, and he was supported by an couple of one of the registered lodging-houses, who in proof of the salubrity of the locality said that he had brought up fifteen children in his house. Other lodging-house keepers deprecate interference on the ground that their customers would not sufficiently clean to be received in any new buildings, and that if they were to be received, they would be landed in the streets by no other means.

* "The Effects of Cross and Self-Fertilisation in the Vegetable Kingdom," by Charles Darwin, M.A., F.R.S., London, 1876.