

was rapid indeed, until the row finally covered a space 3 feet in width, and dense from end to end. The very densest of the plants were the most fertile under ordinary culture that I have ever seen; the plants were generally true to character, and the size and length of spike unusually large, whilst the perfume was exceedingly powerful, not a visitor came but remarked it. The most disappointing feature about it was the discovery that the colour of the flower differed in no degree from that of the other, and required not a stretch of the imagination to term it white. That it may come purer in colour under glass, there can be no doubt, but the same might be said of the old variety. *Reseda odorata ameliorata* is less striking in colour and flower, and has a shorter spike; but it is also more showy, and stiffer in habit. Under these flowers indeed, could a pure white variety, having the habit of the latter, be secured, we should then possess almost a perfect form of the Mignonette. A. D.

Preserving Tomatoes.—Can any of your contributors inform me of the way that Tomatoes are preserved in America? I believe that they are pickled in brine in some way or the other, but whether the seeds are taken out, or whether they are simmered over a fire, I do not know. Old Charlie.

Fruit of the Mountain Ash, Preserving of.—I understand that the fruit of the Mountain Ash, or Rowan tree (*Pyrus Aucuparia*), is made in a preserve or conserve in Scotland which is highly esteemed. We are desirous of ascertaining the mode of preparing southrons the benefit of one or more recipes for converting them into sweetmeats? They are plentiful this year, when other fruit is not. W. Marshall, Ely, September 6.

Fertilisation of Leschenaultia.—As "F. W. B." inquires, in your number of August 26, about the seeding of *Leschenaultia*, I will give my small experience. During 1860 and 1862, I was led to make some observations on the fertilisation of *L. formosa* and *L. hibernica*, from having seen that these flowers self-fertilisation was an inevitable contingency; and this, from what I had seen during many years, seemed to me highly improbable. I found, as "F. W. B." states, that before the flower expands, the anthers open and the pollen is shed. This occurs in a considerable number of plants, as in most Leguminosae, Fumariaceae, &c., and can be clearly shown that this by no means necessarily leads to self-fertilisation. In *Leschenaultia* the pollen, when shed, is neatly collected in a cup-shaped indusium, the mouth of which is at first widely open, but soon closes. Thus far I can follow "F. W. B.," but he will, I think, find, on further examination, that the pollen must, in order that the flower should be fertilised, be subsequently removed from the indusium, and then placed on an exterior stigmatic surface. This no doubt is effected by insects, tempted to visit the flowers by the copious supply of nectar. On the outside of the indusium there is a viscid surface, and when on two occasions I placed some pollen-grains on the stigmatic surface after an interval of about 20 hours, that it was deeply penetrated by numerous pollen-tubes. It was so much surprised at this position of the stigma, that I asked Dr. Hooker to dissect some flowers, which he did with care, and he confirmed my conclusion with respect to *L. formosa*. He also examined two other species, and found no pollen-tubes standing in the stigma, as I have here said that Mr. Bentham has subsequently described the structure of the parts in this genus, but I cannot at the present moment lay my hand on his paper. When the flower is fully expanded the lips of the indusium fit closely, and cannot be very easily opened. If, however, a finely-pointed, My plant preserved in alcohol, and I inserted the pistil, and be gently inserted into the flower, so as to imitate the entry of an insect, the tip of the brush, by pressing against the slightly projecting lower lip of the indusium, opens it; and some of the hairs enter and become smeared with pollen. If the same brush be now successively inserted into several flowers, pollen-grains will be found on the exterior viscid surface. During the early part of the summer I treated in this manner several flowers, but with no result. Towards the end of July, however, five flowers were thus treated, and the germs of all soon became much enlarged. Two of them, after a time, shrank off, but three remained on till the autumn, and each contained about 25 seeds. My plant produced a number of flowers during two or three summers, but the germs of none spontaneously swelled, with the exception of two growing close together, which I imagined had been visited by some insect. These two produced some seeds, but fewer in number than in the above case. All the seeds were of external appearance good, but when sown did not germinate. The flowers were necessarily fertilised with pollen from the same plant, but it would have been incomparably better if pollen from a distinct seedling plant could have been employed. This would have been all the more advisable, as the late Mr. Darwin, of Swan River, in Australia, to whom I wrote, asking him to observe in the proper season what insects visited the *Leschenaultias*, informed me that the species growing there in a state of Nature very rarely produce seed. It appears at first sight a surprising circumstance that in this genus and in some allied genera, the pollen, whilst the flowers are still in

bud, should be scooped out of the anthers, in which it might have remained ready for use, and then be immediately enclosed in a specially contrived receptacle, from which it has afterwards to be removed, so as to be placed on the stigma. But he who believes in the principle of gradual evolution, and looks at each structure as the summing up of a long series of adaptations to past and changing conditions—each successive modification being retained as far as that is possible through the force of inheritance—will not feel surprised at the above complex and apparently superfluous arrangement, or the other still more complex arrangements, though they may all serve for one and the same general purpose. Any one desiring to learn how diversified are the means for preventing self-fertilisation, even within the limits of the same family of plants, should study Mr. Bentham's short but extremely curious paper, just published (in the *Journal of the Linnean Society*), on the styles of the Australian Proteaceae. I cannot resist specifying one of the remarkable contrivances described by Mr. Bentham. In *Synsphaea* the upper anther does not subserve its proper function

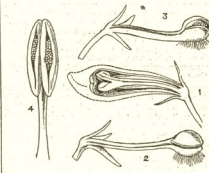


FIG. 267.—LESCHENAUZIA FORMOSA.

of producing pollen, but has been converted into a short broad strap, firmly fixed to the edge of the stigmatic disc. By this means the stigma is held in such a position that it cannot receive pollen from the fertile anthers of the same flower; or, as Mr. Bentham puts the case, "the stigma thus held by the enuch (*i. e.*, the barren anther) is safe from all pollution from her brother anthers, and is preserved intact from any pollen that may be inserted" by insects or other agencies." Charles Darwin. [In order to render this matter more clear we reproduce the woodcut from p. 1103. Eds.]

Malformed Pear.—By this post we send you a Pear fruit grown on a Jargonelle Pear, and which appears to us to be peculiar. F. Dickson & Sons, Chester.—[The change in question is not uncommon,

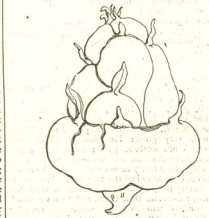


FIG. 268.—MALFORMED PEAR.

and is explained by the circumstance that the core or true fruit is not produced, but in its place the stem grows out, assuming the same succulent form as in the normal Pear. The accompanying cut (fig. 268) shows an analogous instance. The edible portion of an Apple or Pear is now well known to be an expansion of the flower-stalk, the true fruit, in the botanical sense, being the "core" containing the seeds, and which, in course of growth becomes imbedded in the succulent flower-stalk. Eds.]

Thujopsis dolabrata.—On looking over my *Gardener's Chronicle* this morning (September 3), the first thing I read was your account of that interesting Conifer, *Thujopsis dolabrata*, growing in the pleasure-grounds at Ashridge, and until doing so I was vain enough to think I had the finest specimen of it in England, but I find now I must content myself with saying mine is one of the finest, not the finest plant in England, for the Ashridge plant beats mine. You say it is 5 feet 6 inches in height, and fully as much through at the base. My specimen is only 5 feet 1 inch high, and the same, or may be an inch or two more, through the base; and, as to health, to all

appearance it could not be more healthy or robust; but I have it 11 years, and I fancy it is a very slow grower. Five feet and not much in 12 years. Perhaps it may go on better in the future, as it must be tolerably well established by this time. If any of your correspondents have a finer plant, will they kindly publish particulars of it? I have also a smaller specimen, which has the "abrupt unfinished appearance" of the young tree, and is now making a very open fence of branches of some kinds or other, and leaving it there for a year or two, to see if it will draw it up. There is a wonderful difference in the date of growth of many of our exotic Conifers; my *Thujopsis dolabrata* is growing within 30 yards of two fine specimens of *Pinus Benthamiana*, which came to me in the autumn of 1869, and are now 18 years old, and in a brown paper parcel—seedlings drawn out of the seed bed in which they were raised—root, top and all not more than six or seven inches, tied together with four others with a piece of bast, and then wrapped up in brown paper; they are now 21 feet 6 inches, and 25 feet in circumference in height respectively, and as stout and handsome as they can be. C. F. P., The Grange, Kingston, near Taunton.

Faults in Dinner-table Decoration.—In a very able letter to the *Times* of the 1st inst. Mr. E. H. Denton discusses some of the faults in modern architecture; and his opinions on this subject so exactly accord with mine on the subject of dinner-table decoration, that I venture to ask for space for the following extracts:—"The idea of making buildings handsome by their proportions, such as have prevailed since the earth." "Contempt of proportions and symmetry, and an accumulation of ornaments, seem to be the leading characteristics of what may be called the Victorian style." "The ancients, of all styles, had ideas of proportion, and an eye for it; they did not fancy that they could produce effects by height, out of the proportion of such or which." "The common of the foregoing extract in particular to some worthy and excellent friends of mine, who advocate the flat style of table decoration." "Medieval architects were not afraid of making 12 or 13 bays of a long building all alike, except sometimes in minor details; while many architects of the present day, in getting up a new building, do not even occasion without some startling variation, to avoid their great bug-bear 'monotony.' And yet their buildings are monotonous, in having but one tone of fussiness and overdoing and want of repose everywhere." "Everything that is permanently pleasing, both in art and mankind, must have that undefinable quality called 'proportion,' which is the secret of its beauty and simplicity. And our architecture will go on getting worse and worse, more and more vulgar, if this passion for over-decoration is not stopped, and old principles restored." W. T.

Water Weeds.—I beg to thank Mr. Campbell for his reply to my water weed question, but beg further to ask him what was the extent of the lakes he speaks of, and the number of swans that were introduced on to them. Swans were recommended here for the purpose of keeping the weed under. Accordingly, in the winter of 1869, 12 swans were introduced, and soon have this year increased their number to 13, but unfortunately they have not had the desired effect, as the lake has never been known to be so full of weeds as it has been this summer. So dense is the *Myriophyllum* that I think no reasonable number of swans would be able to keep it under, the size of the lake being about 30 acres. W. E.

The Potato Disease.—Although agreeing with what has lately been advanced in your columns relative to the propriety of planting the "tops" of potatoes that has hitherto been customary, as a means of rendering them less liable to the attacks of the dire epidemic, by allowing the "tops" more space for development and exposure to the sun and air, I still consider that the innate constitution of the variety has as much as anything to do with its ability to resist the attack of the disease. In the specimens of the *Peerless* variety I may remark that a case in point has recently presented itself to my notice in the shape of a few rows of Breeze's *Peerless* and *Prolific* Potatoes, which I planted on March 30, single eyes alone being planted, in rich soil, in a somewhat shady part of the garden, in rows about 30 inches apart; which distance proved insufficient, as the tops of the *Peerless* grew vigorous and soon became interlaced, resulting, however, in a heavy crop of handsome tubers. And although the "tops" of both varieties were alike severely affected by the disease, the *Prolific* had but three or four of its tubers affected, whereas the *Peerless* was diseased to the extent of about a third of its crop; hence, I think, conclusively proving that the natural constitution of the variety is as much to be taken into consideration as are other conditions. In further substantiation of this view, I may add that in a reserve garden here, but in a more elevated position, and less rich soil, several other varieties of Potatoes, planted somewhat earlier than the foregoing, were more or less diseased, notably so the *Pius Ultra* (Kidney), which was planted about a yard apart every way, by way of experiment, but which was badly affected; whereas such as the Gloucestershire Kidney, Ashleaf Seedling, Mona's Pride, and Veitch's Ashleaf, were comparatively free from the disease, though considerably separated by intervening rows of Broccoli.