

WEEKLY CALENDAR.

MAY 23—JUNE 3, 1861.			WEATHER NEAR LONDON IN 1850.				Sun Rises.		Moon Rises and Sets.		Clock after Sun.	Day of Year.
Day of Month.	Day of Week.		Barometer.	Thermom.	Wind.	Rain in Inches.	m. h.	m. h.	m. h.	m. h.	°.	
28	Tu	Rosa prœcox, &c.	29.988—29.502	deg. deg.	N.W.	—	54 of 3	44 11	19	2	2	148
29	W	Colutea Pœcockii.	30.003—29.953	63—36	W.	—	53 3	1 of 8	20	2	55	149
30	Th	Narciss.	29.996—29.827	64—40	N.W.	—	52 3	2 8	3	0	21	2 47
31	F	Glauceras.	29.783—29.552	38—44	S.	.05	51 3	3 8	19	0	€	2 38
1	S	Spiderwort.	29.676—29.559	65—43	S.W.	—	50 3	5 8	34	4	€	2 30
2	Sun	1 SUNDAY AFTER TRINITY.	29.480—29.160	64—44	S.E.	.87	50 3	6 8	48	0	€	2 21
3	M	Geraniums.	29.486—29.330	61—45	S.W.	.04	49 3	7 8	5	1	€	2 11

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last thirty-four years, the average highest and lowest temperatures of these days are 67.8° and 44.9° respectively. The greatest heat, 85°, occurred on the 2nd in 1834; and the lowest cold, 32°, on the 31st in 1857. During the period 141 days were fine, and on 90 rain fell.

CROSS-BREEDING IN PLANTS.

FERTILISATION OF LESCHENAUTIA FORMOSA.



UCH obliged am I to Mr. Beaton for his very interesting answer to my question. When Mr. Beaton says he does "not know of an instance of the natural crossing of varieties," I presume he intends to confine his remark to the plants of the flower garden; for every one knows how largely the varieties of the Cabbage cross, as is likewise

the case (as I know from careful trial) with Radishes and Onions. It was this fact which led me to suppose that varieties of flower-garden plants would naturally cross.

I can quite understand, after reading Mr. Beaton's remarks, that it would be very difficult, perhaps impossible, to detect such natural crossing from the degree to which most of these varieties vary. I should, however, think that those who raise for sale seeds of distinct varieties of the Hollyhock, Stocks, &c., must know whether it is indispensable to keep the parent plants apart.

I will not trouble Mr. Beaton again if he will have the kindness to procure for me answers on one or two points quoted in his paper (June 26, 1860) from the "king of British cross-breeders"—namely, whether I understand rightly that the white *Anemone apennina* seeding in a mass with the blue (*Anemone apennina*?) produced many pale shades? For this seems to be a case of two varieties naturally crossing, though I want to know the fact for another reason—namely, because *Anemone* does not secrete nectar; and secondly, whether *Mathiola incana* and *glabra*, which the writer speaks of as "crossing freely," were artificially crossed.

Mr. Beaton's statement (July 24, 1860) that if the pollen of five kinds of Geranium (I presume what botanists call varieties, and not what are called species, are here referred to) are placed on the stigma of a flower, one kind alone takes the lead and produces an effect, seems to me a most curious observation. It is, I fear, unreasonable to ask for a few precise cases on this head; for, as I gather from Mr. Beaton, it must be difficult to know whether one or more kinds have produced an effect, owing to the great variability of crossed varieties.

I have been delighted to observe how strongly Mr. Beaton insists that "not a flower in a thousand is fertilised by its own immediate pollen." This is a subject

which I have attended to for the last twenty years. From my experiments on a small scale I would not venture to put the case nearly as strongly as Mr. Beaton does; but on the other hand, some of the plants which Mr. Beaton advances as self-fertilisers seem, as far as I can trust my own observations, doubtful. I will give one instance, as it might possibly induce some one to try the experiment. *Leschenautia formosa* has apparently the most effectual contrivance to prevent the stigma of one flower ever receiving a grain of pollen from another flower; for the pollen is shed in the early bud, and is there shut up round the stigma within a cup or indusium. But some observation led me to suspect that nevertheless insect agency here comes into play; for I found by holding a camel-hair pencil parallel to the pistil, and moving it as if it were a bee going to suck the nectar, the straggling hairs of the brush opened the lip of the indusium, entered it, stirred up the pollen, and brought out some grains. I did this to five flowers and marked them. These five flowers all set pods; whereas only two other pods set on the whole plant, though covered with innumerable flowers. The seeds in these pods were bad, or else I had not skill to make them germinate. I became so strongly convinced that insects would be found concerned in the fertilisation of these flowers, that I wrote to Mr. James Drummond, at Swan River in Australia, and asked him to watch the flowers of plants of this order; and he soon wrote to me that he had seen a bee cleverly opening the indusium and extracting pollen; and a bee with its mandibles thus covered with pollen would very likely effect a cross between one individual and another of the same species. I have been told that this pretty plant, the *Leschenautia formosa*, never sets seed in this country. I wish some skilful cultivator would rout up the pollen within the indusium in the manner described, and see whether he could not thus get seeds.—CHARLES DARWIN, Down, Bromley, Kent.

ARRANGING FLOWERS IN BOUQUETS AND VASES.

(Continued from page 132.)

HOW TO ARRANGE FLOWERS.

MANY books have at different times been written about plants and flowers, abounding in directions how to grow them, while there seems scarcely to be an instance of even a paragraph advising how to arrange them. It is a very difficult thing, indeed, to spoil the appearance of flowers, or to make them look ugly; but certainly a great many of those into whose hands they fall give them every possible chance of obtaining such an undesired distinction. And while one would have fancied that the mere love of flowers would have brought with it taste for grouping them, what is more rare than to see them really artistically put together?

When I say "artistically," my readers must be kind enough to understand that I speak of that triumph of