

Carduus plants.—The article by Mr. Andrew Murray in the last number of the *Gardener's Chronicle* presents very clearly and fairly the objections that present themselves to the doctrine of the transference of plants. To some of these it must be left to Mr. Hooker to reply; on one or two more I shall be glad to be allowed to make a few remarks. Mr. Murray contrasts the phenomena in *Fragaria* with those in *Dracopis*; I think more may be gained by comparing them with those in *Dracopis*, and the resemblance will be found very striking, such is the more remarkable, seeing that the glands in *Fragaria* are, I believe, entirely subepidermal, while a good the larger number of those of *Dracopis* are subepidermal, belonging to the tissue of the leaf itself. I am not aware of any statement with regard to the ecology of the hairs on the upper surface of the leaf of *Dracopis*. Mr. Murray remarks that in *Fragaria* the slight irritability "does not appear to be worth being excited injudiciously on the insect," in consequence of the long period which elapses before it begins to operate. But precisely the same is the case with the very strong irritability of the glands of *Dracopis*. I had from a note of observations made in North Wales this summer, that on placing a piece of non-wool soaked with blood on a leaf of *Dracopis*, it was from three to four hours before any of the special glands had begun to stretch over it, and only three days before the greater number of the special glands had come into contact with the non-wool; and last summer I found very nearly the same phenomena presented in the case of a living leaf. The movement of the glands is certainly not excited by the struggles of the insects. Mr. Murray speaks of heavy rain completely washing the insects and the leaves of *Dracopis* and *Fragaria*. This is not accordance with my observation in the case of *Dracopis* during an exceptionally wet season in West-England last year. I should be inclined to demur with the phrase of the following sentence in his article:—"Of course there are no flies for the *Fragaria* leaf on in the winter, and yet it grows then and so in summer." That the animal substances must be digested by the leaves without the existence of any organs of digestion would be, as Mr. Murray very remarks, very extraordinary. But the supposition of such organs must not be taken for granted. I have been in a position to affirm their existence. But I have detected, both in *Dracopis* and *Fragaria*, cells of a very peculiar nature, or containing protoplasm in a very unusual form, in the leaves of these two plants, and which I have observed nowhere else except in *Callitriche*, and which I am not aware have been before described. Dr. Hooker tells me that he is acquainted with structures of a similar kind only in *Siphonaria*. That there is any connection between the cells and the process of digestion apparently set on foot by these plants, I am not, as I said, able to say; but they well merit further investigation, and I hope to be able to give them. The question, as to the nature of the dead bodies of the animals of the animal kingdom that we see depositing in the air, has been discussed to me; but I am by no means disposed to assent hastily to the conclusion arrived at by Mr. Murray,—"no one will propose to endow *Siphonaria* with digestive powers." I should be more inclined to believe that the phenomena so remarkably displayed by *Dracopis*, *Dracopis*, *Callitriche*, and *Siphonaria*, are but a well-developed form of a power widely disseminated through the animal kingdom, of which we are now gaining some faint glimpse. Alfred W. Bennett.

—Allow me to make a qualification upon one of the positions I took in my remarks on the above plants last week. I said that I considered every structure or property in any organism to be primarily intended for the benefit of the being itself. This reads too broadly. Every part, you see, has every property in its wide sense, for example, it is for our benefit that we see purple, and the structure by which purple is produced is therefore primarily for our benefit, and the property of purpling; but the secretion required is of no use to us. It is the property

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