

ceæ, and other plants that are generally recognised to be suitable for the purpose. The chief essentials to success are carefully prepared soil, good lighting, judicious watering, and, in many cases, an unheated room for winter storage; the good results observable in cottage rooms are quite in accord with the last condition.

The author first instructs in general processes, such as watering, potting, sowing, and the like, and then gives special directions for each plant or group of similar plants, arranging them according to habit. The instructions are full, clear and explanatory, so that anyone with an ambition for cultivating such plants as those named above without a greenhouse will be well advised to consult the book and work upon the lines indicated.

*Flashes from the Orient, or a Thousand and One Mornings with Poesy.* In four books, Spring, Summer, Autumn, and Winter. Book third, Autumn. By John Hazelhurst. Pp. x+280. (London and Aylesbury: Hazell, Watson and Viney, Ltd., 1910.) Price 1s. 6d. net.

READERS familiar with Mr. Hazelhurst's sonnets on summer will turn with interest to his verses dealing with subjects suggested by the phenomena and events connected with the fall of the year. His subjects range from "Enthusiasm" to "Misery," and from "The Sewing Machine" to "The Dome of Heaven"; and he finds music in them all.

LETTERS TO THE EDITOR.

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The Inheritance of Acquired Characters.

I AM rather disposed to think that Prof. Judd is right in saying that this "and similar problems were constantly present to Darwin's ever-open mind." They seem to me, indeed, to underlie the whole of the discussions in the second volume of the "Variation of Plants and Animals under Domestication"; and I believe it is generally considered that Darwin put forward his theory of "pangenesis" to account for the cases where some amount of direct influence of the environment appeared to be inherited.

The passage which Prof. Meldola quotes from the sixth edition of the "Origin" occurs word for word in the first (p. 44). It is interesting to note that in the interval between the two Darwin never saw any ground for altering the statement, though he modified others on the same page. I can have little doubt that, at any rate so far as plants are concerned, "the source of his . . . authority for" it is to be found in Alph. de Candolle's "great and admirable work," as Darwin calls it ("Origin," sixth edition, p. 89), "Géographie Botanique raisonnée." That appeared in 1855, and there is abundant internal evidence to show that it received from Darwin the most attentive study.

Great and admirable it certainly is, but it is impossible not to feel in reading it that, perhaps in the whole history of science, there has never been a more striking case of a *coup manqué*. For de Candolle had the same problem before him as Darwin, and he attacks it by the same method of patiently accumulating and sifting facts. He grasps the action of variation, heredity, and of cultural selection, but he fails to grasp the idea that nature might operate on the same lines as the cultivator, and natural selection constantly eludes him as it did Herbert Spencer.

It is true that de Candolle does not absolutely reject the effect of the environment, but he was led to the conclusion that it would act, if at all, with such extreme slowness as to be practically ineffective. It is difficult to give a brief quotation, but the following may suffice:—

"Toutes les fois qu'il a été question de l'influence du climat sur les végétaux, je me suis efforcé de combattre l'opinion d'une *acclimatation*, c'est à dire d'un changement dans la nature des espèces qui les rende, après quelques générations, plus aptes à résister aux influences défavorables d'un climat. J'ai applaudi au mot spirituel de du Petit-Thouars: 'L'acclimatation, cette douce chimère de la culture'" (pp. 1087-88).

It must I think be evident that, though he does not actually quote it, Darwin, from his use of the word "chimæra" ("Variation," ii., 313), has this passage in his mind. But he goes on to show that the problem is at once solved by natural selection. He states this, however, with his usual caution:—"Though habit does something towards acclimatisation, yet . . . the spontaneous appearance of constitutionally different individuals is a far more effective agent" (*loc. cit.*, 314), and though he appears, in the main, to have relied on de Candolle, he took some trouble to investigate the question for himself:—"Can we feel sure that our kidney-beans are not somewhat hardier? I have not been able, by searching old horticultural works, to answer this question satisfactorily."

I think, then, that it was upon de Candolle's conclusions, supported by his own investigations, that Darwin based the pregnant sentence which Prof. Meldola has quoted. And how pregnant every word in the book is can be little appreciated except by those who have more than a bowing acquaintance with its pages.

I cannot but agree with Prof. Judd that modern evolutionary theory had its root in Lyell. Nor do I think that in the cold light of history it will seem to "be going too far . . . to assert that if the Principles of Geology had not been written, we should never have had the Origin of Species." If the possession of Darwin is the glory of Cambridge, it is pleasant for a member of the sister university—though it says little about it—to know that it is secure in that of Lyell.

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Palæolithic Shaft-straighteners.

IN a previous communication to NATURE (vol. lxxiv., p. 372, 1906) I directed attention to some Eskimos' arrow-straighteners which present a closer resemblance to the famous *bâtons de Commandement* of the Magdalenian age than any which had been previously described.

Last summer, when my friend Mr. Marrett and I were returning from Toulouse, where we had enjoyed the hospitality of the French Association, we stayed at Perigueux on our way to some of the painted caves of Les Eyzies. We were fortunate in our choice of an hotel, for our host, M. L. Didon, proved to be an enthusiastic investigator of the caves in the neighbourhood. His collection of Aurignacian bone implements, obtained by him from the Aurignacian station of Castelmeule, is the finest I have seen, and, I should think, unrivalled anywhere. M. Didon informs me that he has completed its description, which will be published in the course of the winter.

The number and variety of the bone implements obtained from this single locality, dating from a period so long anterior to the Magdalenian, greatly impressed us, but the objects which most aroused my interest were three shaft-straighteners (see Fig.). These, while presenting a general resemblance to the Magdalenian *bâtons*, make a still nearer approach to those of the Eskimos previously re-

