

To take an instance. Last year (1901) I carefully hybridised two varieties of the sweet pea, using lens, paint brush and muslin nets. One variety used was "Gorgeous," of a salmon-orange colour. It is described in Burpee's catalogue as an improved "Meteor," and "Meteor" was brought out by Eckford about 1893. The other variety was a new cream white, Eckford's "Mrs. Kenyon," novelty of 1901.

The seeds formed were some pale and some dark, the colour following that of the mother parent. None of the flowers of the offspring have been cream-coloured; the seeds borne on "Mrs. Kenyon" by pollen from "Gorgeous" have all yielded purple flowers unlike either immediate parents, but probably taking their colour from the known remote purple ancestor of our sweet peas. Of seeds borne on "Gorgeous" by pollen from "Mrs. Kenyon," eight plants yielded flowers like "Gorgeous," but ten of the plants yielded purple flowers.

Here the dominant purple appears to be due to the previous long ancestry; the salmon variety of ten years' standing has several representatives, but not one single cream flower stands for the 1901 novelty.

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The Fertilisation of Linum.

In the *Proceedings* of the Academy of Natural Sciences of Philadelphia for 1902, pp. 33-36, is a very interesting paper by the late Mr. Thomas Meehan, treating of some points in the life-history of certain plants. On p. 36, Mr. Meehan says:—"Mr. Darwin once stated that one might as well use organic dust as to endeavour to get seeds of *Linum perenne* by the aid of its own pollen. I found *Linum perenne* of our Rocky Mountains abundantly fertile with own-pollen, and said so in one of my papers." As some anti-Darwinian will probably make much of this statement, it is as well to say that the Rocky Mountain plant is a distinct species, *Linum lewisii*, Pursh.

In the same paper, Mr. Meehan has some very interesting remarks on the fertilisation of *Lobelia*, and shows that the Bartram Oak, *Quercus heterophylla*, Michaux, is not a hybrid, but a mutation (quite of the DeVriesian sort) of the pin oak. It will therefore be called *Quercus palustris heterophylla*. Mr. Meehan attributes such variations to "varying degrees of vital energy," and supports this view by calling attention to the fact that in the ivy, for instance, the leaves may at first be more or less lobed, but become wholly entire later on, in the same individual plant. One also recalls the great difference between the early and late leaves of many Malvaceæ, and of species of *Eucalyptus*. It is to be remarked, however, that these differences occur in a regular manner, and their order cannot be reversed.

T. D. A. COCKERELL.

East Las Vegas, New Mexico, U.S.A., October 7.

Retention of Leaves by Deciduous Trees.

HAVING followed the interesting discussion relating to the deferred shedding of their leaves by young beeches, it seems to me that something yet remains to be said, though, as I take it, P. T. (NATURE, May 15) has come very close to the solution. The phenomenon is common here also, and much more of the same kind can be seen. The maturing of leaves appears to be retarded by two causes. In older trees the lower branches with their leaves come late to maturity by reason of the tendency of the energy of growth to expend itself toward the higher branches. With young trees, and especially such as are cultivated late in the season, maturity of the fresh growth is slow by reason of excess of vegetative activity. In both there is failure to mature the abscission layer of cork at the base of the petiole and consequent retention of the leaves. In seasons of early autumnal frosts, the late-growing and imperfectly lignified parts of trees are the first to suffer.

D. T. SMITH.

Louisville, September 25.

THE SCOTTISH ANTARCTIC EXPEDITION.

THE Antarctic summer of 1902-3 will see the unprecedented number of five exploring steamers at work on the edge of the southern ice, and three of these under the British flag. The fifth expedition is on the point of departure, and it promises to be by no means the least important, its equipment for some branches of research being remarkably complete. An objection may

perhaps be taken to the name given to this expedition—the Scottish National—for, so far as we are aware, no public body or learned society in Scotland has been asked to accept any responsibility and none has claimed any credit in the matter; we fear, too, that the number of subscribers is not great enough to indicate any widespread interest amongst the people of Scotland. To Mr. W. S. Bruce is due the whole credit of planning the expedition, arranging all details of equipment and organisation, and beating up subscriptions with a pertinacity which has deserved and commanded success. He now goes out as leader of the expedition, his enthusiasm in all branches of science and his unequalled experience of work in the ice of both Polar zones justifying hopes of good results. In a very full measure it is Mr. Bruce's expedition. Next to him, honour is due to the small number of munificent subscribers, all, we believe, Scotsmen, whose generosity has made the enterprise possible. The expedition is in truth Scottish throughout, but without the formal recognition and support of the leading learned societies it cannot rightly be considered national.

In a paper read to the British Association at the recent meeting in Belfast, Mr. Bruce gave details of his plans and equipment, and on this authoritative statement we base the following remarks.

While the British national expedition on the *Discovery* and the German national expedition on the *Gauss* are devoting attention in the first place to magnetism, for the study of which the ships were specially designed, and the Swedish expedition in the *Antarctic* is in large measure geological, the Scottish expedition will be mainly devoted to oceanography and meteorology. Other branches of science will, of course, be attended to in each case, and Mr. Bruce has made ample provision for turning all opportunities to account.

The ship for the expedition was an old Norwegian whaler, the *Hekla*, which might possibly have made a Polar voyage in her original state; but, on examination, it was found desirable practically to reconstruct her so as to render her absolutely safe in any circumstances that can be foreseen. She was accordingly stripped of her outer skins and resheathed, fitted with new masts and spars, and her whole internal arrangements and deck-plan remodelled, from the designs of Mr. G. L. Watson, by the Ailsa Shipbuilding Company at Troon. Her name suffered a similar sea-change, and she is now the *Scotia*. A vessel of about 400 tons, she is 140 feet long with 29 feet beam, and draws 15 feet of water. She has graceful lines, is barque-rigged, and is fitted with a new engine and boiler which have proved able to propel her at the rate of eight knots, while she is confidently expected to prove a fast sailer.

The leader, captain and scientific staff will occupy an after deckhouse, the officers will be berthed amidships and the crew forward. A large deckhouse has been built amidships containing the galley and also a large, well-lighted laboratory, where most of the scientific work will be carried on. It communicates with a zoological laboratory on the deck below, adjoining which there is a photographic dark-room. This lower deck contains two great drums each carrying 6000 fathoms of cable (presumably of steel wire, as each drum weighs six tons), which is led up to a 40-horse-power steam winch on the upper deck, and is to be used for trawling and trapping in the deep sea. Ample sounding wire is also carried. On the after deck, a special petrol engine is employed for working the winch for winding in the great meteorological kite specially designed and constructed by Mr. John Anderson, of Edinburgh, but of which no description has yet, so far as we are aware, been published. A full equipment of meteorological and oceanographical instruments of the best patterns has been provided.

The expedition has been fortunate in securing the services of Mr. Thomas Robertson, of Peterhead, as