

disturb systematic botanical procedure. The replies to this position are two: (1) We have already admitted very many of them, even if under protest in some cases; (2) is botanical procedure to be competent to accept the facts of nature? Whether we will or no, these cultivated things will be known by botanical names. What are we to do with *Phlox decussata*? It may be a set of hybrids between *P. paniculata* and *P. maculata*, but we can not order the plant from the nurseries under either of these names. Referring the name *P. decussata* to one or the other of the species may satisfy the demands of synonymy, but it does not dispose of the plant. It is a good name for the group: why not use it?

Naturally we must have a formal and recognized system of taxonomy and nomenclature. We should keep it pure. But may it not be extensible? The interminable discussions over trivialities of priority in nomenclature tend to seal up the subject as a closed book, or as an ancient box of precious ointments. May we not open the book or carefully lift the lid?

I have no program. To-day I am only asking questions. I would not interfere in any way with the orderly procedure that we have found to be good. I would disturb nothing: but may we add?

May we not admit the cultigen, under well-considered practise of conservative and trained botanists, defended with proper safeguards? I am not thinking of mere variations, even if well marked, but of important groups or clans of known characteristics under domestication. If so, the gens should have standing, which means that the name should bear record of its author. Its name should have recognized botanical form, for cultigens are still plants and of more or less coordinate rank with other gentes known as species. While falling under recognized botanical procedure, might it not represent a category or class of its own? In the manuals perhaps its name would be set in a different type; or could a designating symbol be used? Under the International Rules, the cross-mark (x) preceding the name is recommended to distinguish

hybrids; this can not be applied to any extent because records of hybrid origins are few; it does not touch the great class of cultigens: yet there must be some good way of distinguishing categories.

We must assuredly try to avoid confusion, but we do not accomplish this by avoiding the facts. Horticulturists as well as botanists are entitled to protection and precision. May we not make names for certain cultigens?

These may be troublesome questions, but they force themselves on us. Is it not best to meet them squarely, and provide a way?

If we can not modify our practise in these regards, there is no use of making a manual of cultivated plants.

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SCIENTIFIC EVENTS

THE RESEARCH COMMITTEES OF THE BRITISH INSTITUTION OF MECHANICAL ENGINEERS

SOME particulars of the work of the research committees formed under the direction of the Institution of Mechanical Engineers are given in the report of the council for 1918 and are quoted in the *London Times*.

The alloys research committee has been occupied with investigations on various light ternary alloys. These investigations have been conducted at the National Physical Laboratory with the assistance of the Department of Scientific and Industrial Research from whom the committee received a grant of £400, in addition to £800 paid directly to the laboratory for the provision of special plant. The council of the institution made a grant of £250 for the year. The committee's eleventh report, which would have contained the results of these investigations, has been temporarily withheld in the public interest.

The committee on steam nozzles, which received a grant of £100 from the council, has been so fully occupied with war work that it has been unable to construct apparatus and carry out tests; but complete detailed working drawings of the apparatus for measuring the impulse of steam jets have been prepared, and it is hoped that the apparatus may shortly be put in hand.

Dr. Stanton, with his special machine at the

National Physical Laboratory, has continued the series of tests for the committee on hardness tests, with special reference to the effects of variations of load and speed on rate of wear. A series of wear rings of varying widths has been made from material supplied by Sir Robert Hadfield, who has also undertaken their hardening. Another holder for these rings has been constructed of a form which will considerably facilitate regrinding. A series of specimens has been prepared and the tests are now in hand. The work was delayed for some months owing to some of the apparatus being required for war work. In addition to the grant of £100 made by the institution, a sum of £100 has been received from the Department of Scientific and Industrial Research, Sir Robert Hadfield has placed in the hands of the institution a sum of £200 to be awarded as a prize or prizes for the description of new and accurate methods of determining the hardness of metals, especially those of a high degree of hardness, but the council regret that as yet few such descriptions have been received.

The work of the committee on wire ropes, to which a grant of £450 was made by the council, has been much delayed by war work and the prolonged illness of the chairman. Nevertheless a design for a testing machine has been approved in principle for giving a somewhat wider range of tests than was originally contemplated, in the direction of providing for more bends both simple and reverse, and also for bends in planes at right angles. The choice of a site for its erection has been deferred.

In connection with the offer of a gift of £500 from Mr. Richard Williamson in aid of engineering research, a number of suggestions for subjects were received. The one which the council selected was on the best form and material for pistons and piston-rings, especially for internal combustion engines, and they are awaiting the approval of the Department of Scientific Research through which Mr. Williamson's offer was transmitted.

A PREHISTORIC PUEBLO INDIAN RUIN

THE American Museum of Natural History, in the summer of 1916, entered upon the

largest single piece of scientific excavation ever undertaken in the United States. This was the systematic excavation and reparation of one of the finest and best preserved examples of prehistoric Pueblo architecture in the Southwest. The ruin is located in the Animas Valley in northwestern New Mexico, a few miles below the Colorado boundary and directly across the river from the town of Aztec, and is popularly, though inaccurately, called the "Aztec Ruin." It is the property of Mr. H. D. Abrams, of Aztec, who has given the Museum a concession to clear out and investigate the entire ruin. The funds for carrying on the work have been contributed by Messrs. Archer M. Huntington and J. P. Morgan.

The "Aztec Ruin" was once a typical pueblo, or great fortified house and village, comparable in the number of people sheltered to the modern American apartment house, but differing from it in that the principle of the pueblo was close communal cooperation. The buildings were so joined as to enclose three sides of a rectangular court whose fourth side was protected by a low, outcovering wall. Only one entrance led through the outer wall into the pueblo, which was, therefore easily defended. The three buildings, rising sheer from the ground on the outside, with very small windows, rose within the court by receding steps, each a story high. Interior stairways were not in use, access being gained to upper levels by movable ladders. As a military contrivance, this plan could hardly have been improved upon, since an enemy would be forced to make not one, but a series of attacks, to get possession of the building.

Although the work of investigation has as yet been only partially completed, the features of the ruin itself, and the surprising finds which have been made within the crumbling walls, have proved of sufficient importance to surpass the most sanguine expectations of the investigators. Necklaces of shell and turquoise, agate knives, pottery vessels of varied form and ornamentation, cotton cloth and woven sandals are among the gems of prehistoric Pueblo art which have recently been