

Europe, in northern Africa, and in western Asia, and it occurs adventitiously in North America. I have never observed insects pollinating the flower. The corolla is closed, and probably small insects are unable to effect an entry; there are no "nectar-guides"; the four anthers are adherent, mature simultaneously with the stigma, and dehisce internally. It would seem, therefore, as Kunth ("Handbook of Flower Pollination," English translation by Ainsworth Davis, vol. iii., p. 177) states, that "automatic self-pollination is inevitable." I fear "S. P." will regard this answer to his question as analogous with the dictum: "There are no snakes in Iceland!" C. E. Moss.

Botany School, Cambridge, November 9.

SCIENTIFIC GLASSWARE.

AN interesting account of the efforts which have been made in France to replace glassware for scientific and technical purposes which had formerly been imported from Germany and Austria by home productions is given in an article in the July-August number of the *Bulletin de la Société d'Encouragement pour l'Industrie Nationale*. The article consists of a detailed account of an exhibition of French products of this kind, and affords interesting comparisons with the similar but much smaller exhibition recently held in the rooms of the Institute of Chemistry in Russell Square. The French exhibition included optical glass, and utensils for the heavy chemical trades.

In regard to optical glass, of course, it is not surprising to find that the French are in a far better position than that yet reached in this country. The firm of optical glass manufacturers which was founded in Paris by one of the Guinand family has been steadily developed, and has for years past—under the names of Mantois and latterly of Parra-Mantois—issued lists of optical glasses of a range and quality quite as wide as, and in many respects more satisfactory than, those of Schott, of Jena. It is, in fact, worth remembering that on many occasions during the twelve or fifteen years preceding the war the British manufacturer of optical glass was confronted with a more serious competition from Mantois than from Schott.

This state of affairs must be held highly to the credit of the French glass-makers, and we see indications of similar skill and enterprise in other directions connected with the glass industry. French plate-glass, associated with the name of the great firm of St. Gobain, has long held a high reputation, while the name of Appert is a household word wherever glass is studied. Accordingly we see in the present record of the French exhibition a most comprehensive list of products of all kinds, including not only laboratory-ware, such as beakers, flasks, etc., but many specialities such as glass for X-ray tubes and glass for serum tubes. The list of exhibitors is so large, the range of products exhibited so wide, and the claims made for the quality of the products so sweeping, that one might well suppose that the French efforts in this direction had been crowned with complete success, and that their industries had been rendered

entirely independent of imported goods. It is sincerely to be hoped, in the interests of our Allies, that this impression is correct, and that the ordinary users of this ware are really able to obtain it in the regularity—as regards both quality and quantity—which is essential for practical purposes.

So far as can be judged from the printed descriptions and the photographs with which it is illustrated, the French exhibition was on an altogether larger scale than the one recently held by the Institute of Chemistry. The latter was, in fact, somewhat disappointing as regards both number of exhibitors and range of exhibits. Some very creditable achievements were, of course, represented, particularly in regard to laboratory-ware, such as flasks, beakers, and similar articles. Those exhibited were excellent examples of their kind so far as workmanship and the obvious qualities of the glass are concerned. It was disappointing to find, however, that there was no evidence as to the real qualities of the various articles shown. Public testing laboratories are available in this country perfectly competent to give certificates of quality in regard to all articles of this kind; this being the case, why were not these exhibits accompanied by such certificates showing the behaviour of the glass to chemical reagents and to sudden changes of temperature? In the absence of such evidence we can only hope that the glasses labelled "resistant" are really fairly satisfactory for their purpose, and that the flasks and beakers will stand the usage to which they are of necessity exposed in the laboratory.

Another marked feature of the Institute of Chemistry exhibition was the circumstance that it was confined very largely to the lighter kinds of laboratory-ware. While manufacturers are to be congratulated upon the measure of success which they have achieved in this very important direction, it seems desirable to direct attention to the fact that laboratories cannot exist on light glassware alone. There is a whole range of glass articles of a heavier type which are also necessary—such as desiccators, separating funnels, jars and cylinders, etc.—which were formerly obtained from abroad. So far as the writer is aware, English-made articles of this class are not yet available, although the difficulties of manufacture are probably much less than those connected with ware which has to resist severe physical and chemical conditions.

In conclusion, it may perhaps be suggested that, while a good exhibition is of considerable value in bringing before those interested the best samples of the home products now available, the future of this glass industry and of the technical and scientific operations related to it depends upon a factor which can never be brought out by any exhibition—i.e. the steady and regular trustworthiness of the articles produced. In the chemical laboratory, for instance, it becomes a serious matter if at intervals a beaker or a flask should crack at a critical point in a long and delicate

operation. It is only fair to point out that such untoward accidents did occur from time to time when Jena glassware was used, but, broadly speaking, they were rare. It is, of course, too early in their career to pronounce upon the British manufacturers of these goods in this respect, and the matter is only mentioned here in the desire to impress upon them the extreme importance of this factor of uniformity and trustworthiness. Beautiful samples sent for exhibition and specimens sent for trial or test which behave extremely well may serve to initiate trade and to introduce the products, but only complete regularity and dependence will ever succeed in building up a permanent industry and trade in these goods.

PROF. H. H. W. PEARSON, F.R.S.

BY the death of Prof. H. H. W. Pearson, which occurred on November 3 at the Mount Royal Hospital, Wynberg, Cape Colony, South Africa is deprived of one of the ablest and most popular of her scientific men, and botanists have lost a colleague richly endowed with the qualities which go to make an ideal student of Nature.

Harold Henry Welch Pearson was born at Long Sutton, Lincolnshire, in 1870; he was privately educated; after holding a teaching post in an Eastbourne school he entered the University of Cambridge as a non-collegiate student, and later became a member of Christ's College, where he remained until his election to the Frank Smart studentship, which necessitated migration to Gonville and Caius College. His Cambridge career was a series of successes: in 1899 he was awarded the Walsingham medal for work in Ceylon on the vegetation of the Patanas. In 1898 he was appointed curator of the Cambridge Herbarium, and in 1899 he joined the staff of the Kew Herbarium. In 1902 he was appointed professor of botany at the South African College, Cape Town, where he laboured with conspicuous success up to the time of his death. He was elected into the Royal Society in the present year. Though the double responsibilities of the professorship and the Botanic Garden were no light burden, Pearson enlisted as a trooper in a Local Defence corps.

Full advantage was taken of the splendid opportunities of exploration afforded by South Africa, and Pearson proved himself to be an explorer of the best type; he visited Damaraland four times, and in January of this year he wrote home from Windhoek after a particularly arduous journey undertaken with the fullest approval and support of General Botha. He also explored Namaqualand, Bushmanland, Angola, and other regions, always returning with valuable booty, of which he made the best use both by his own researches and by generous gifts to institutions and other botanists. Pearson's expeditions were readily assisted by scientific bodies, and especially by the Percy Sladen Trustees, whose liberal contributions were well earned and thoroughly appreciated. His first paper (1898) dealt with the

anatomy of the seedling of the Cycad *Bowenia*, and in 1899 the Linnean Society published the results of his field-work in Ceylon. In 1902 he wrote on the double pitchers of a *Dischidia*.

Pearson's most important work is on *Welwitschia* and *Gnetum*; he not only greatly extended our knowledge of these Gymnosperms, but with conspicuous ability demonstrated the nature of the "endosperm," for which he proposed the term trophophyte. Pearson's more recent contributions have strengthened his position on the vexed question of the degree of affinity of the Gnetales to the Angiosperms. In one of his most recent letters Pearson referred to the MS. of a promised volume on the Gnetales as almost complete. Observations on South African Cycads, investigations on the common maize disease caused by the root-parasite *Striga lutea*, an account of the Thymeleaceæ in the Flora of Tropical Africa, a paper on the internal temperature of *Euphorbia* and *Aloe*, and well-written descriptions of travels illustrate the wide range of his activities.

The greatest service rendered by Pearson to South Africa was the part he played in the foundation of the National Botanic Garden, and it was his tactful and untiring efforts which led the Government to set apart about 400 acres on the Kirstenbosch estate, on the east side of Table Mountain, for a National Garden, of which he was appointed honorary director in 1913.

Pearson was a botanist of many parts, and a man who inspired affection in an unusual degree by his geniality, honesty of purpose, and boyish enthusiasm. He recognised the almost unlimited possibilities of botanical and economic developments through the Kirstenbosch Garden, and it is for his successors to do their part in carrying out the broadly conceived scheme of the first director. In a letter dated July, 1913, he wrote: "It will be a great burden, but it is worth carrying, even if it never falls to me to exploit its contents."

A. C. SEWARD.

PROF. HENRIK MOHN.

THE death of Henrik Mohn, on September 12 at Christiania, removes from the meteorological world a very well known and popular figure. Born at Bergen on May 15, 1835, he had completed his eighty-first year. He took part in all international assemblies of meteorologists from the commencement of the series of 1873 until the meeting of the International Meteorological Committee at Rome in 1913, when he excused himself on account of the long journey. Shortly afterwards he retired from his appointment as director of the Norwegian Meteorological Service and professor in the University of Christiania, which he had held since 1866. He maintained his scientific activity to the end of his life. His most recent work was the discussion of the meteorological observations of Amundsen's expedition to the South Pole, which was published in 1915. It displays remarkable ingenuity in giving a con-