

Is there any commingling of the elements of stock and of scion in the case of grafts? Botanists and gardeners, almost without exception, have asserted that there is none. Place on a sheet of wet blotting-paper, which may represent the stock, a drier piece of the same substance, which may represent the graft, and there will be a passage of the fluid from the lower to the upper paper, but there will be no mixture of the constituents of the two.

We have always wondered, if there were no reciprocal influence of stock on scion, why grafting is practiced at all, because we cannot understand the acknowledged advantages of the practice except upon the supposition of some modification being exerted. Gardeners triumphantly, as they were quite justified in doing, pointed to the millions upon millions of cases where no such modifications are visible. Botanists pointed to the closed cells from whose cavities only the thinnest of liquids could exude and permeate through the walls of adjoining cells. This was before the days of "continuity of protoplasm," as above mentioned. Now that we know that not only water, but protoplasm itself, may, under certain circumstances, pass from cell to cell, the difficulties in the way of conceiving that any influence could be exerted on the scion by the stock, or *vice versa*, are very materially lessened, if not entirely removed.

But before the time we speak of, there were some alleged facts which, provided the history given were true, could only be explained on the supposition of the commingling of elements by grafting and subsequent separation. In other words, the possibility of graft-hybridization must be assumed. Whether it has been proved is another matter.

One of the strongest cases in its favour that we know of is that of the famous Adams's Laburnum (*Cytisus Adami*). We cannot go into detail as to the history of this extraordinary tree. It must suffice to say, that it is stated to have originated from the implantation of a bud of the dwarf, shrubby, lilac-flowered *Cytisus purpureus* on to the common Laburnum. Be this as it may, we have in our gardens on this side of the Atlantic trees which every year astonish the beholder by producing, together with the foliage and flowers of the Laburnum, tufts of *Cytisus purpureus* and all sorts of intermediate conditions between the two. If the stock exerted no influence on the scion, the buds should be pure *Cytisus purpureus* and pure *C. Laburnum*, without any intermediate forms. It would lead me too far to give other illustrations of the production of shoots of an intermediate character between stock and scion. Many such are on record, and many have come under my own notice. It must suffice for me to show that whilst we may, with a very great amount of probability, attribute the existence of some sports to the "un-mixing" of elements blended by means of cross-fertilization, whether between species (hybrids) or between varieties (cross-breeds), we may, likewise, but with a less degree of probability, attribute the existence of others to a similar dissociation in the case of grafted plants.

Obviously the latter cases must be much less numerous than the former, and are purely artificial productions, not likely to occur in Nature.

Other assigned causes appear to me to pertain rather to variation in general than to that limited, localized form of it which is here considered as bud-variation, and may be here passed with the mere mention.

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#### A NEW SCIENTIFIC SERIAL.<sup>1</sup>

THE imposing series of four octavo volumes before us is the embodiment of the first five years' work in the new Museum of the Austrian capital. Of the nature

<sup>1</sup> "Annalen der k.k. Naturhistorischen Hofmuseums, Wien." Bd. I.-IV 1886-89. (Wien, Alf. Hölder.)

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and plan of the building itself our readers have already been made aware; the collections housed within it are rich in types and specimens of priceless value, and its affairs are administered by a large and efficient staff of specialists, many of whom have attained a world-wide reputation. The directorship lies in the hands of Dr. Franz Ritter von Hauer.

Each of these volumes consists of four parts, and embraces one year's work. The parts are issued quarterly, their limitation in size being determined by the progress of work in hand. The first part of the first volume, issued early in the year 1886, is exclusively a "Jahresbericht" for the preceding year. It has already received notice in our pages (NATURE, vol. xxxiii. p. 424). While for the most part a report of work done, it contains information concerning the Museum itself, together with a list of names of the officers and staff, and of the various donors, correspondents, and persons who studied in the Museum during the year, as of those to whom material had been lent, together with references to published works in the production of which the resources of the Museum had been utilized. Of the remaining fifteen parts, each contains one or more special treatises, together with "notices" of a miscellaneous character, correspondence, personalia, and administrative detail, with acknowledgments of acquisitions. The four volumes make up a total of over 1900 pages of closely printed matter, with 80 plates and numerous woodcuts. The illustrations are, for the most part, highly satisfactory; we would, however, have preferred the substitution of ordinary lithographs for the photographs of Ophiurids described in vol. ii.; the latter are too indefinite and unsatisfactory. Excluding the notices and miscellanea, which monopolize collectively 22 per cent. (415 pp.) of the printed sheets, there remain 1532 pages of a more solid nature, which make up the bulk of the collective volumes. These bear, in all, 55 treatises; some of them, as our pages have already borne testimony (NATURE, vol. xxxv. p. 204), are lists of types and specimens in the Museum, others are elaborate monographs dealing with highly involved structural detail. The Museum is divided into five departments, each having its own working staff, and the published works bear the following ratio: zoology, 23; mineralogy with petrography, 13; geology with palæontology, 9; botany, 7; anthropology and ethnology, 3. As might be expected from this list, many new species of organic beings have been described. We find much to admire in some of the monographs; and especial attention is demanded by those devoted to the ethnology of the South Sea Islanders, by Dr. Otto Finsch, and to the artistic products of the Dyaks, by Prof. Alois Raimond Hein. These memoirs extend over the greater portion (240 pp.) of an average volume, and they are amply illustrated; the information contained in them is of inestimable value, the illustrations are of rare merit, and it would be difficult indeed to surpass the coloured representations of Papuan handiwork which adorn the pages of Dr. Finsch's important communication. These monographs are based upon the collections in the Vienna Museum, and upon perusal of them we know not upon which of their acquisitions most to congratulate our Austrian *confrères*—those of types of Nature's productions, or those of objects of human artifice. Moreover, the appearance of the memoirs cited, now that the South Sea Islanders are receiving renewed attention, is most timely; and their value is greatly increased by the fact that the peoples to whom they relate are becoming demoralized and demolished by the advance of "civilization."

The Museum whence these *Annalen* emanate was opened to the public in August 1889 by "His Apostolic Majesty the Emperor"; and an account of the ceremony, with its attendant honours, is to be found in vol. iv. The pages of the journal show the custodians of the institution to be fully alive to the value of their charge. The

journal itself not only serves them as a catalogue, but as a medium for publication of investigations into structure, such as the officers of our own National Museum are in the habit of contributing to the Proceedings of our Learned Societies and to other private journals. The authorities of the Austrian Museum might, at first sight, appear to be ahead of us in the possession of their recognized official *Annalen*; and there are those among us who would desire the founding of a similar official journal with its attendant restrictions for our own National Museum. We are very doubtful of the advisability of such a step, supposing the trustees were willing to undertake it. As matters stand, the excellent official catalogues which emanate from the building in Cromwell Road fulfil the public demands, and suffice for all purposes of nomenclature which it is a leading function of its authorities to control. The supplementary work, with the publication of which the members of its staff have so long honoured outside bodies, is voluntary. The progress of science in Britain is unique in the extraordinary degree to which it has been furthered by private enterprise; in contributing to the work of our Learned Societies and of those self-supporting institutions to which we have alluded, our Museum officials are encouraging an essentially national system, and fostering a love of science for its own sake. For these if for no other reasons, we would not desire the extension of the Austrian system to our own land.

We cannot close this notice without commenting upon the growing desire to found journals in connection with departments of our native Universities and Colleges. From what we have said, we could hardly be expected to approve of this movement, especially as the interests of such journals are apt to centre in individual aggrandizement, and as the necessity for their continuity may lead to the publication of that which the literature of the sciences might well be spared. We have journals ample for our needs, provided sufficient care be exercised in the selection of their contents. Better far to improve and to extend these, than to tolerate that which in them may be least desirable, adding thereto a "literature" which can only ill compare with that of the last generation of British naturalists.

We note that the Viennese have as yet succeeded in effecting an interchange of publications with but few of our leading Societies, and that their *Annalen* are not yet to be found in a large number of our University and other leading libraries. With respect to this, comparison with foreign countries does not redound to our credit. We can strongly recommend the journal on its merits; and, if the standard of its early volumes be maintained, no working scientific library will be ere long complete without it.

G. B. H.

#### NOTES.

THE programme for the Leeds meeting of the British Association has been issued. The first general meeting will be held on Wednesday, September 3, at 8 p.m., when Prof. W. H. Flower will resign the chair, and Sir Frederick Abel, President-Elect, will assume the Presidency and deliver an address. On Thursday evening, September 4, at 8 p.m., there will be a *soirée*; on Friday evening, September 5, at 8.30 p.m., a discourse on "Mimicry," by Mr. E. B. Poulton, F.R.S.; on Monday evening, September 8, at 8.30 p.m., a discourse on "Quartz Fibres and their Applications," by Prof. C. Vernon Boys, F.R.S.; on Tuesday evening, September 9, at 8 p.m. a *soirée*; and on Wednesday, September 10, the concluding general meeting will be held at 2.30 p.m. The Vice-Presidents are the Duke of Devonshire, the Marquis of Ripon, the Earl Fitzwilliam, the Lord Bishop of Ripon, Sir Lyon Playfair, the Right Hon. W. L. Jackson, M.P., the Mayor of Leeds, Sir James Kitson, and

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Sir Andrew Fairbairn. The following are the Presidents of the various Sections:—A.—Mathematical and Physical Science, Mr. J. W. L. Glaisher, F.R.S. B.—Chemical Science, Prof. T. E. Thorpe, F.R.S. C.—Geology, Prof. A. H. Green, F.R.S. D.—Biology, Prof. A. Milnes Marshall, F.R.S. E.—Geography, Lieut.-Colonel Sir R. Lambert Playfair. F.—Economic Science and Statistics, Prof. Alfred Marshall. G.—Mechanical Science, Captain A. Noble, F.R.S. H.—Anthropology, Mr. John Evans, V.P.R.S. The local secretaries are Mr. J. Rawlinson Ford, Mr. Sydney Lupton, Prof. L. C. Miall, and Prof. A. Smithells, and the local treasurer, Mr. E. Beckett Faber.

THE annual meeting for the election of Fellows of the Royal Society was held at the Society's rooms in Burlington House, on June 5, when the following gentlemen were elected:—Sir Benjamin Baker, Robert Holford Macdowell Bosanquet, Samuel Hawkesley Burbury, Walter Gardiner, John Kerr, LL.D., Arthur Sheridan Lea, D.Sc., Major Percy Alexander MacMahon, R.A., Rev. Alfred Merle Norman, Prof. William Henry Perkin, Prof. Spencer Umfreville Pickering, Isaac Roberts, David Sharp, M.B., J. J. Harris Teall, Richard Thorne Thorne, M.B., Walter Frank Raphael Weldon.

LAST Saturday the Royal Observatory was inspected by the Board of Visitors. By invitation of Sir G. G. Stokes, the chairman, about 250 ladies and gentlemen interested in astronomy attended to see the instruments and methods employed in the Observatory.

IN the House of Commons, on Tuesday, Mr. A. Acland moved that the sum of £350,000, which the Government propose to use for the extinction of the licenses of public-houses, should be applied in England for the encouragement of agricultural, commercial, and technical instruction, and in Wales for like objects. This ingenious scheme did not commend itself to the Chancellor of the Exchequer. The Government, he said, "admired the enthusiasm of the hon. gentleman, but could not assent to his proposal."

IT is announced that the Committee of Council on Education have decided, with the sanction of the Treasury, to allocate a fixed sum every year, in the vote for the Science and Art Department, for grants in aid of technical instruction given under the Technical Instruction Act. The sum allocated for the financial year 1891-92 will be £5000. A grant in aid will not necessarily be equal to, and in no case will it exceed, the amount contributed by the local authority out of the rates. Each grant will be computed, as far as possible, on the basis of the amount of the rate spent on subjects of technical instruction other than those for which the Science and Art Department gives aid under the Science and Art Directory. The application from the local authority, which must be sent in before the end of April in each year, should therefore give a certified statement, with the necessary extracts from the accounts of the preceding year, showing how the rate raised has been expended, and especially how any portion may have been applied to instruction in subjects for which grants are not made under the Science and Art Directory.

IN the course of the discussion on Mr. Acland's proposal, Mr. Mundella commented severely on the fact that the sum to be allocated under the Technical Instruction Act for the financial year 1891-92 would be only £5000. There was not a canton in Switzerland, he declared, that would not be ashamed of such a paltry provision for technical education. Mr. Goschen replied that he had himself been struck by the smallness of the sum, "but it was the result of the comparatively small demand made by the local authorities. There was every disposition on the part of the Government to meet to the full the requirements under the Act."