

In England, with respect to living plants, for the greater part of the accession to the plants in cultivation during the preceding year, we are indebted to Mr. Fortune, the Horticultural Society's collector in China; who has recently published an account of his mission: and we are not less indebted to those who, as collectors and correspondents in various parts of the world, communicate the results of their labours to the Royal Botanic Gardens at Kew. That establishment, under the direction of my friend Sir William Jackson Hooker, has unquestionably become the first Botanic Garden in Europe. I use this expression on the authority of another friend whom I have had the privilege of knowing for forty years, whom Humboldt described as *le premier Botaniste de l'Europe*, accurate, sagacious, and profound, and whose knowledge is only equalled by his modesty. After this, it is not for your sakes, but for my own, that I name Robert Brown;—may I add, in passing, the expression of every one's wish that he would deposit more of his knowledge in print.

Before I quit the subject of the great Institution at Kew, I ought to mention as one of the latest accessions to it a cactus weighing a ton, as stated by Sir W. J. Hooker, in his Report laid before Parliament; who adds that the collection of that most singular family, so recently made familiar to us, (he refers to the collection at Kew) "is now unrivalled in Europe."

With respect to new species of plants received only in the state of specimens for the Herbarium, they have been in part obtained from China, South America, and New Zealand; but chiefly from Australia. The late expeditions into the interior, or at least farther into the interior of that great continent than in any other direction had hitherto been made,—expeditions so creditable to the enterprise, perseverance and intelligence of their conductors—have however been but little productive, so far as we at present know, in the department of Botany. The animal productions of New Holland, so wonderful in their forms and structures, have long formed the most remarkable characteristic of its vast region: nor is its botany without distinctions of much interest, though as yet very imperfectly explored. It may be said, however, in reference to the results of these later expeditions, which have penetrated farther inland, that they have not brought to our knowledge any peculiarities in the vegetable kingdom so various and so striking as those which exist near the coasts, and which are sufficient to distinguish New Holland and the Australian colonies from the other regions of the world.

In the diffusion of the riches of the vegetable world, steam navigation has obviously been a most favorable auxiliary; so that "even cuttings of plants" are now "actually sent successfully to Calcutta, Ceylon, &c." In speaking of the exports from Kew, it is not unfitting to add, that "between four and five thousand plants of the famous Tussock grass have been dispersed from the Royal Gardens at Kew during the past year."

The increase in the number of visitors to that most flourishing establishment is some evidence at least of an increase of a taste for the development of science, and probably of that increase of the love of science which it is one of the objects of the British Association to encourage in all classes.

In 1841, the number of visitors was 9,174; but they are nearly doubling every year. In 1844, they were 15,114; in 1845, 28,139; in 1846, 46,573.

In Vegetable Physiology, microscopic observers have of late been much occupied in investigating the phenomena of fecundation, and especially as to the mode of action of the pollen.

On this subject, botanists are still divided. Several experienced observers adopt the theory lately advanced and ingeniously supported by Prof. Schleiden, of Berlin; while others of great eminence deny the correctness on which this theory is founded. Among these, the celebrated microscopic observer, Prof. Amici, of Florence, very recently in an essay—communicated to the Scientific Meeting held in 1846 at Genoa—has endeavored by a minute examination of several species of Orchis, to prove the existence of the essential part of the embryo anterior to the application of the pollen, which, according to him, acts as the specific stimulus to its development.

This view receives great support from some singular exceptions to the general law of fecundation.

Of these, the most striking occurs in a New Holland shrub, which has been cultivated several years in the Botanic Garden at Kew; and which, though producing female flowers only, has constantly ripened seeds from which plants have been raised perfectly resembling the parent:—while yet there is no suspicion either of the presence of male flowers in the same plant, or of minute stamens in the female flower itself, nor of fecundation by any related plant cultivated along with it.

This plant has been figured and described in a recent volume of the Linnean Society's 'Transactions,' under the name of *Celebogynne ilicifolia*, by Mr. J. Smith, the intelligent curator of the Kew Garden,—by whom, indeed, this remarkable fact was first noticed. It is not the least curious part of the history of the *Celebogynne* that male flowers have lately been discovered in New Holland unquestionably of the same species.

Prof. Gasparini, of Naples, has more recently communicated to the scientific meeting held in that city in 1845, his observations and experiments on the cultivated fig,—which, though entirely destitute of male flowers, produced seeds having a perfectly developed embryo, independent of fecundation: access to the pollen of the wild fig, generally supposed to be carried by insects, being, in his

experiments, prevented by the early and complete shutting up of the only channel in the fig by which it could be introduced.

An elaborate memoir has very recently appeared in the Transactions of the Linnean Society, by the late Mr. W. Griffiths, 'On the Structure and Affinities of Plants Parasitical on Roots.' These singular productions have been regarded by several distinguished botanists as forming one natural class, which they have called *Rhizantha*. Mr. Griffiths, on the other hand, who was eminently qualified, both as a systematic and physiological botanist, to judge of such a question, has adopted the opposite view taken by other observers—namely, that these plants really belong to several distinct, and not even nearly related, families; the points of internal structure and external appearance which they have in common arising from the peculiar mode in which they receive their nourishment.

The extension of the means of communication by the ELECTRIC TELEGRAPH is yearly facilitating intercourse, almost as rapid as light or as thought, between distant portions of England, and between distant provinces in the vast empire of our Queen.

The last pamphlet which I had in my hand before leaving home yesterday, was a Report presented to the Legislative Council and Assembly of New Brunswick, relative to a project for constructing a railway, and with it a line of electro-magnetic telegraph, from Halifax to Quebec.

Distance is time; and when by steam, whether on water or on land, personal communication is facilitated, and when armies can be transported without fatigue in as many hours as days were formerly required, and when orders are conveyed from one extremity of an empire to another almost like a flash of lightning, the facility of governing a large State becomes almost equal to the facility of governing the smallest. I remember, many years ago, in the *Scotsman*, an ingenious and able article showing how England could be governed as easily as Attica under Pericles: and I believe the same conclusion was deduced by William Cobbet from the same illustration.

The system is daily extending. It was, however, in the United States of America that it was first adopted on a great scale, by Prof. Morse, in 1844; and it is there that it is now already developed most extensively. Lines for above 1300 miles are in action; and connect those States with Her Majesty's Canadian Provinces; and it is in a course of development so rapid, that, in the words of the Report of Mr. Wilkinson to my distinguished friend, his Excellency Sir W. M. Colebrooke, the Governor of New Brunswick, to which I have just adverted, "No schedule of telegraphic lines can now be relied upon for a month in succession, as hundreds of miles may be added in that space of time. So easy of attainment does such a result appear to be, and so lively is the interest felt in its accomplishment, that it is scarcely doubtful that the whole of the populous parts of the United States will, within two or three years, be covered with a telegraphic net-work like a spider's web, suspending its principal threads upon important points along the sea-board of the Atlantic on one side, and upon similar points along the Lake Frontier on the other."—I am indebted to the same Report for another fact, which I think the Association will regard with equal interest: "The confidence in the efficiency of telegraphic communication has now become so established, that the most important commercial transactions daily transpire, by its means, between correspondents several hundred miles apart. Ocular evidence of this was afforded me by a communication a few minutes old between a merchant in Toronto and his correspondent in New York, distant about 632 miles." I am anxious to call your attention to the advantages which other classes also may experience from this mode of communication, as I find it in the same Report. When the *Hibernia* steamer arrived in Boston, in January 1847, with the news of the scarcity in Great Britain, Ireland, and other parts of Europe, and with heavy orders for agricultural produce, the farmers in the interior of the State of New York—informed of the state of things by the Magnetic Telegraph—were thronging the streets of Albany with innumerable team-loads of grain almost as quickly after the arrival of the steamer at Boston as the news of that arrival could ordinarily have reached them.—I may add, that, irrespectively of all its advantages to the general community, the system appears to give already a fair return of interest to the individuals or companies who have invested their capital in its application.

The larger number of the members of this Association have probably already seen in London an exhibition of a Patent Telegraph which prints *alphabetical* letters as it works. Mr. Brett, one of the proprietors, obligingly showed it to me; and stated that he hoped to carry it into effect on the greatest scale ever yet imagined on the American Continent. Prof. Morse, however, does not acknowledge that this system is susceptible of equality with his *telegraphic* alphabet for the purpose of rapid communication; and he conceives that there is an increased risk of derangement in the mechanism employed.

I cannot refer to the extent of the lines of the electric telegraph in America without an increased feeling of regret that in our own country this great discovery has been so inadequately adopted. So far, at least, as the capital is concerned, the two greatest of our railway companies have not, I believe, yet carried the electric telegraph farther from London than to Watford and Slough: an enterprise measured in the United States by hundreds of miles being measured by less than scores in England.

In England, indeed, we have learnt the value of the electric tele-