Yet more, the depths have more! What wealth untold,
Far down, and shining through their stillness lies!
Thou hast the starry gems, the burning gold,
Won from ten thousand royal Argosies.—
Sweep o'er thy spoils, thou wild and wrathful main!
Earth claims not *these* again.

Yet more, the depths have more! Thy waves have rolled
Above the cities of a world gone by!
Sand hath filled up the palaces of old,
Sea-weed o'ergrown the halls of revelry.—
Dash o'er them, ocean! in thy scornful play:
Man yields them to decay.

Yet more! the billows and the depths have more!
High hearts and brave are gathered to thy breast!
They hear not now the booming waters roar,
The battle-thunders will not break their rest.—
Keep thy red gold and gems, thou stormy grave!
Give back the true and brave.

Give back the lost and lovely!—those for whom
The place was kept at board and hearth so long,
The prayer went up through midnight's breathless gloom,
And the vain yearning woke 'midst festal song!
Hold fast thy buried isles, thy towers o'erthrown—
But all is not thine own.

To thee the love of woman hath gone down,
Dark flow thy tides o'er manhood's noble head,
O'er youth's bright locks, and beauty's flowery crown:
Yet must thou hear a voice—Restore the dead!
Earth shall reclaim her precious things from thee!—
Restore the dead, thou sea!

FELICIA HEMANS (1).

SCIENCE.

Botany and Horticulture.

ADDRESS OF PROF. DECANDOLLE TO THE RECENT BOTANICAL CONGRESS IN LONDON. (2)

In order to derive the full advantage from a meeting of so many lovers of science, horticulturists and botanists, brought together from all parts of Europe, it is necessary that the common object for which they have met should be perfectly understood.

It devolves on me, who am called upon to preside (an honor of which I feel myself unworthy), to point out the bond which unites us, and of which perhaps you have at present but a vague, and, so to speak, an intuitive perception.

In my opinion, we are not here merely as amateurs to satisfy our curiosity. The proof of which is, we are here assembled to listen to discussions, instead of wandering about the fairy-like garden of the Exhibition. Evidently we seek something more than a mere flower show, and that something is, in my opinion, instruction. It is not sufficient for horticulturists merely to see—they must also study and reflect; neither is it sufficient for botanists to observe details minutely; they must also see the plants on a large scale and in grouped masses. The connection of practice with theory, and of art with science, is acknowledged to be indispensable; and in accordance with this prevalent opinion we here affirm, by our presence in this room, the necessary union of botany and horticulture. The aim of my brief observations will be to call to mind how they aid each other, and to show how much more they might do so. If I am not mistaken, it will follow from the facts to which I shall allude, that our united efforts, scientific or practical, modest though they appear, contribute to increase the well-being of man, in all conditions and in all countries.

1. *The advantages of Horticulture to Botany.*—Let us first mention the services that horticulture renders, or may render, to botany. Without being myself a horticulturist, I affirm or recognize them willingly, the advancement of science rendering it necessary to have recourse to all its collateral branches.

We no longer live in those times of illusion, when botanists merely occupied themselves with European plants, or with a few from the East, and, from a spirit of caution rather than from ignorance, pictured to themselves all distant countries as possessing much of the same general vegetation, with a few uncommon or exceptional species. A century of discovery has made known the extreme variety in the floras, the restricted limits of many species, and the complicated entanglement of their geographical distribution. To see all the different forms of vegetation of the world, would be to realize in a degree the history of the Wandering Jew; besides, with this constant travelling, where would be the opportunities for that reflection or study which create true science?

The traveller is too much exhausted in warm countries, too distracted in those temperate regions favorable to active life, and his faculties are too much benumbed in the colder regions, to enable him to devote himself to minute researches with the lens or the microscope, or even to sketch or properly describe that which he has gathered. He sees, in passing, a crowd of things, but he can scarcely ever stop to enter into details, especially of those that present themselves in rapid succession. Rarely can he see the fruit and flower of a species at the same time, and it is quite impossible for him to study their complete development during the whole year. The notes taken by the most intelligent naturalist are so affected by these fatal circumstances, that it is seldom they add anything to that which a dried specimen can teach the sedentary botanist.

It is horticulture, then, which brings before us a multitude of exotic plants in a condition best adapted for study. Thanks to the variety of species it accumulates and successfully cultivates, the botanist can investigate the most difficult questions, and pursue his researches in families whose genera are not indigenous in Europe. In the herbarium, more minute observations can be made than is generally supposed; nevertheless, for certain researches, it is absolutely necessary to have the living plant, particularly for those relating to the relative disposition, the origin and development of the several organs, as well as for studying the curious phenomena of fertilization, the movements and direction of the stem, leaves, and parts of the flowers. Horticulture has done much to advance the progress of physiological botany, but it still has much to do. The most remarkable experiments of physiologists—viz., those of Hales, Duhamel, Knight—have been made in gardens. Also the long series of experiments of the younger Gaertner, and, more recently, of M. Naudin, on hybridization, which relate to the cardinal subject of the species. As much may be said of the numerous trials which are made, in horticultural establishments, to obtain new races or varieties. These have a great scientific importance, and it is undoubtedly the horticulturists who are the teachers of botanists on these subjects.

It appears to me, however, gardens can be made still more useful in carrying out physiological researches. For instance, there is much yet to be learned on the mode of action of heat, light, and electricity upon vegetation. I pointed out many of these deficiencies in 1855, in my "Géographie Botanique Raisonnée." (1) Ten years later Mr. Julius Sachs, in his recently published and valuable work on physiological botany, (2) remarks much the same deficiencies, notwithstanding that some progress has been made in these matters. The evil consists in this, that when it is desired to observe the action of temperature, either fixed or varied, mean or extreme, or the effect of light, it is exceedingly difficult, and sometimes impossible, when observations are made in the usual manner, to eliminate the effects of the constant variations of heat and light. In the laboratory it is possible to operate under more exactly defined conditions, but they are rarely sufficiently persistent; and the observer is led into error by growing plants in too contracted a space, either in tubes or bell-glasses. This last objection is apparent when it is wished to ascertain the influence of the gases diffused in the atmosphere around plants, or that of the plants themselves upon the atmosphere.

(1) Felicia Dorothea Browne was the daughter of a Liverpool merchant who, having met with reverses in business, removed with his family to Wales. She published her first volume of poems at the early age of fifteen. In her eighteenth year she was married to Captain Hemans, from whom she was separated six years afterwards. Mrs. Hemans spent the rest of her life in Wales and in Dublin, where she died, leaving a young family. Her larger works are *The Sceptic*, *The Vespers of Palermo*, a tragedy, *The Forest Sanctuary*, and *Records of Woman*; but her lyrics are the most popular of her productions.

(2) The first meeting of the Botanical Congress was held in the Raphael Room of the South Kensington Museum, on Wednesday, May 23, at 11 A. M., Prof. DeCandolle in the chair. A very large meeting, including almost all the British and foreign botanists and horticulturists present in London, were assembled to hear the President's address.

(1) Pages 46, 49, 57, and 1346.

(2) Handbuch der Experimental-physiologie de Pflanzen, 1 vol, in 8vo, Leipzig, 1865.