


 OBITUARY.
 

DR. ALFRED RUSSELL WALLACE, O.M., F.R.S.—A great naturalist of the Victorian era, whose name is indissolubly linked with that of Charles Darwin in the discovery of the great law of natural selection, passed away at his residence, Broadstone, near Bournemouth, on Friday, November 7th, in his 91st year. On July 1st, 1858, a joint paper by Charles Darwin and Alfred Russell Wallace was read at a meeting of the Linnean Society, entitled, "On the tendency of Species to form Varieties, and on the Perpetuation of Varieties and Species by Natural Means of Selection." That paper has revolutionised every branch of Natural History. The circumstances were briefly as follows. In the previous February, Wallace wrote, from Ternate, a long letter to Darwin explaining views which had suddenly occurred to him when lying ill with intermittent fever, and which he summarised in a final phrase as follows:—

There is a tendency in nature to the continued progression of certain classes of *varieties* further and further from the original type—a progression to which there appears no reason to assign any definite limits. . . . This progression, by minute steps, in various directions, but always checked and balanced by the necessary conditions, subject to which alone existence can be preserved, may, it is believed, be followed out so as to agree with all the phenomena presented by organised beings, their extinction and succession in past ages, and all the extraordinary modifications of form, instinct, and habits which they exhibit.

This letter came as a "bolt from the blue," for Darwin had long been preparing a work on the origin of species, as the result of observations made during the voyage of the "Beagle." This was known to Sir Charles Lyell and Dr. Hooker, and Darwin was now urged to publish an extract. To this he acceded, remarking, "I have more especially been induced to do this, as Mr. Wallace, who is now studying the natural history of the Malayan Archipelago, has arrived at almost exactly the same conclusions that I have on the origin of species." To both these great naturalists the idea came as the result of observations on the character and distribution of wild life within the tropics.

Wallace spent four years, from 1848 to 1852, in South America, in company with the naturalist Bates, and on his return he published an entertaining *Narrative of Travels on the Amazon and Rio Negro*. The work contains little about Orchids, though the following extract shows how they came under his observant eye. The locality was Rio Jeronymo, on the Rio Negro, and he remarks:—

In a little patch of open bushy campo, which occurs about a mile from the village, I was delighted to find abundance of Orchids. I had never seen so many collected in one place; it was a complete natural Orchid-house. In an hour's ramble I noticed

about thirty different species—some, minute plants scarcely larger than mosses, and one large semi-terrestrial species, which grew in clumps, eight or ten feet high. There were but few in flower, and most of them were very small, though pretty. One day, however, I was much delighted to come suddenly upon a magnificent flower: growing out of a rotten stem of a tree, just level with my eye, was a bunch of five or six blossoms, which were three inches in diameter, nearly round, and varying from a pale delicate straw-colour to a rich deep yellow on the basal portion of the labellum. How exquisitely beautiful did it appear in that wild, sandy, barren spot. A day or two afterwards I found another handsome species, the flowers of which, unlike most of the family, were of very short duration, opening in the morning and lasting but a single day. The sight of these determined me to try and send some to England, as from such a distant and unexplored locality there would probably be many new species. I accordingly began bringing a few home every day, and packing them in empty farinha-baskets, placing them under a rough stage, with some plantain-leaves to defend them from the heat of the sun, till we should be ready to embark. I was rather doubtful of the result, as they could not arrive in England before the winter, which might be injurious; but on my next voyage I looked forward to bringing a large collection of these beautiful and interesting plants, as they would then arrive in a good season of the year.

The subsequent history of these plants was tragic, for the ship by which Wallace returned was burned at sea, with his entire natural history collections, and the author reached England after spending several days in an open boat, which narrowly escaped being swamped during a storm.

The "next voyage" was not to South America, but to the Malay Archipelago, from 1854 to 1862, and his eight years' travels there are described in his *Malay Archipelago*, a work in two volumes published in 1869. Here again we find a few references to Orchids. When staying in Sarawak he visited a level, forest-covered swamp, and remarks:—

During my first walk . . . I . . . noticed some very handsome Orchids in flower, of the genus *Cœlogyne*, a group which I afterwards found very abundant, and characteristic of the district.

In speaking of Borneo generally he observes:—

The interesting group of Orchids is very abundant, but, as is generally the case, nine-tenths of the species have small and inconspicuous flowers. Among the exceptions are the fine *Cœlogyne*s, whose large clusters of yellow flowers ornament the gloomiest forests, and that most extraordinary plant, *Vanda Lowii*, which last is particularly abundant near some hot springs at the foot of the Peninjauh Mountain. It grows on the lower branches of trees, and its strange pendant flower-spikes often hang down, so as to almost touch the ground. These are generally six or eight feet long, bearing large and handsome flowers three inches across, and varying in colour from orange to red, with deep purple-red spots. I measured one spike, which reached the extraordinary length of nine feet eight inches, and bore thirty-six flowers spirally arranged upon a slender thread-like stalk. Specimens grown in our English hot-house have produced flower-spikes of equal length, and with a much larger number of blossoms.

Wallace's writings include entertaining volumes on *Tropical Nature* and

Island Life. From the latter we extract the following concerning the distribution of Orchids and their abundance in the Tropics:—

Their usually minute and abundant seeds would be as easily carried as the spores of ferns, and their frequent epiphytic habit affords them an endless variety of stations on which to vegetate, and at the same time removes them in a great measure from the competition of other plants. When, therefore, the climate is sufficiently moist and equable, and there is a luxuriant forest vegetation, we may expect to find Orchids plentiful on such tropical islands as possess an abundance of insects adapted to fertilise them, and which are not too far removed from other lands or continents from which their seeds might be conveyed.

Many of Wallace's writings lie outside our sphere, but we must add our tribute of recognition to his share in establishing the great principle of evolution by means of natural selection. In conclusion, we may briefly refer to the Darwin-Wallace celebration held on July 1st, 1908, at which the surviving author gave an interesting account of the circumstances which led them independently to the same discovery (*O.R.*, xvi. pp. 225-228)—a discovery which throws a flood of light on the marvellous adaptations seen among Orchids.

In an Obituary notice in *Nature* it is remarked that Wallace as an old man was impatient of the recent work which centres round Mendelism and mutations. To this Prof. E. B. Poulton very well replies that with regard to Mendelism he felt, as many far younger men feel, that it is both interesting and important, but that from the first it has been put in a wrong light, and erroneously used as a weapon of attack upon other subjects to which it is not in any way antagonistic. And respecting mutation Wallace himself wrote: "Mutation as a theory is absolutely nothing new—only the assertion that new species originate always in sports—for which the evidence adduced is the most meagre and inconclusive of any ever set forth with such pretentious claims!" He was a firm believer in natural selection as the motive cause of evolution, and once remarked that Darwinism actually *does explain* whole fields of phenomena that Mutationists do not attempt to deal with or even to approach. His death severs the last link with the great evolutionary writers of the mid-nineteenth century—the men who transformed the thought of the world—but his memory is immortal.