

ALFRED RUSSEL WALLACE was born on January 8th, 1823. At an early age he was attracted to the study of botany, but later on became engrossed in entomology. This led to a journey to the Amazon and Rio Negro, on the return from which his ship, with all his collection, was destroyed by fire in mid-ocean, and his health was temporarily shattered by exposure for ten days in an open boat. In 1854, after his recovery, he visited the tropics, and made the observations in Borneo, Sumatra, Java, the Celebes, New Guinea, and Singapore which enabled him to produce his classic work on the 'Geographical Distribution of Animals' and his more popular account of 'Island Life.'

During these years Charles Darwin had been engaged in collecting the facts on which his theory of natural selection was based. So far back as 1844 he had outlined his views to Lyell and Hooker, and had been urged by Lyell to publish them, lest he should be

forestalled. Determined, however, that his conclusions should be well-founded, he had continued his patient preparation of evidence.

Wallace at that time had, by his own account, 'hardly thought of any serious study of nature.' The idea of natural selection came to him while he was at Ternate, in the Malay Archipelago, in a sudden flash of insight. In a week it was written out and sent to Darwin. Darwin, forestalled after 20 years of work, maintained that Wallace was entitled to an equal share with himself in the honour of the discovery; Wallace himself considered that his share might be estimated in the proportion of one week to twenty years. In 1858 joint papers by Darwin and Wallace, 'On the Tendency of Species to form Varieties, & on the Perpetuation of Varieties & Species by Natural Selection,' were communicated to the Linnean Society. This, briefly, is the story of the birth of a theory on which modern biology and palæontology are based.

Both the great men who took part in this contest of magnanimity have now passed away, but before his death Wallace received proof of the high value which was to be attached by posterity to his work and to his share in the discovery.

One of the subjects touched upon by Wallace was an estimation of the age of the Earth. In discussing calculations founded on the length of the stratigraphical column, he pointed out that, although denudation proceeds on all exposed land-surfaces, deposition is confined to the coastal parts of the oceans, and is correspondingly more rapid. After careful consideration of the limits of the area within which the degraded material may be assumed to be distributed, he inferred that

'deposition, as measured by *maximum* thickness, goes on at least nineteen times as fast as denudation.'

On the strength of this conclusion he advocated a large reduction in the estimate of time required for the deposition of the strata of the world. The conclusion may be well-founded, but it helps little if our knowledge of the rate of denudation is confined to mere guesses; and it must be admitted that our knowledge, not only as regards the rate at which any one of the many types of existing land-surface, but, still more, the land-surface of the globe as a whole, are being degraded, deserves no better description.