ALBERT GEORGE LONG DSc(Manc), LLD(Glas)

Albert Long, palaeobotanist, naturalist and teacher, was born on 28 January 1915 in Inskip, near Preston, Lancashire; he died on 13 March 1999 aged 84. He was the son of the Baptist pastor of Inskip and went to school at Todmorden. When a schoolboy, he was shot in the left foot but, with the aid of a medical boot, he went on to walk more miles than most in his search for fossils.

"Education is no good if it makes people greedy or selfish or unjust. It should cure these evils. All the certificates in the world therefore cannot be compared to a kind Spirit." So said Albert Long when he left Berwickshire High School in Duns in 1966 after teaching science there for 21 years. In that year he gained a DSc from Manchester University, and in the following year, an honorary LLD from Glasgow University.

Long was no ordinary schoolmaster. He was already known to the international scientific community as the author of a significant series of papers on the Lower Carboniferous flora of Berwickshire. These were published by the Royal Society of Edinburgh, to which he was elected in 1962. The significance of his work was further recognised by the award of the Society's Makdougall-Brisbane Prize. In 1964 the 10th International Botanical Congress met in Edinburgh and Long's remarkable personality became known and admired by scientists from all parts of the world.

Enumeration of honours may be the stuff of obituaries but for Albert Long they were accretions of little significance. In his autobiography, *Hitherto*, (Pentland Press, 1996), he wrote that he was born a naturalist and reborn a Christian and these were the driving forces of his life. The quest for scientific truth was what really mattered to him. He was happy in that pursuit especially when his search for study material took him to the countryside which he loved. He was less happy with the demands on his time and patience made by the need to earn a living.

Long took his first degree at Manchester University where his professor was William Henry Lang, one of the foremost palaeobotanists of his day. Under his influence he studied the petrified flora of Upper Carboniferous Coal Balls and gained his MSc. He then trained as a teacher. After a temporary teaching post at Lewes and a period at Leek he moved to the Berwickshire High School in 1945. Here his hobby was beekeeping, but he also kept records of the natural history of Berwickshire. Many of his observations were published by the Berwickshire Naturalists' Club and his entomological observations and collections are of special note.

Although he had collected fossils from the local rocks, in 1957 he was stimulated to collect in earnest by Dr Peter Barnard who pointed out that the scientific literature recorded important fossil plant localities in the vicinity of Duns. Long's success in collecting new material from these localities caused him to return to fossil botany. He fitted up his former honey house as a laboratory where he sectioned his fossil specimens to reveal their inner microstructure by the preparation of cellulose peels, which he photographed, drew and reconstructed.

When he left Duns to become the deputy curator of the Hancock Museum in Newcastle where he remained for the rest of his working life, Long's scientific goal was set. With others, he believed that flowering plants may have evolved from seed ferns and he set himself the task of showing how this transition took place. The fossil plants of Berwickshire and Northumberland occur in some of the oldest non-marine Carboniferous strata in Britain and give a window into a most significant period in this development.

One paper succeeded another until 1987 and all are characterised by the rigour of their scientific presentation and the tentative nature of their deductions. Long was always the severest critic of his own work and would not allow his conclusions to overstep the evidence. He described every type of fossil seed in the Berwickshire flora, which led him to develop what he termed the Cupule-Carpel Theory. He believed that the evidence suggested that ferns and seedferns developed in parallel but that flowering plants most probably came from seedferns. In the end, however, he acknowledged that despite clues as to their nature, the discovery of the actual ancestors of flowering plants had eluded him.

Vivid in the memory of the writer is the schoolmaster from Duns standing on the rocks of the lovely Cove Shore in 1964 and, like a prophet of old, declaiming to a spellbound audience of palaeobotanists from every quarter of the world the science which he had discovered in those rocks. He was indeed a man of spirit – a kind spirit.

Gladys Hunt, whom Albert Long married in 1942, has given him her generous support and understanding throughout the changing circumstances of their married life. She survives him together with their daughter, Jean and son, David.

C D WATERSTON