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Genetic Transformation: a Retrospective Appreciation

First Griffith Memorial Lecture

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Exegi monumentum aere perennius (Horace, *Odes*, III, xxx, 1).

(I have completed a monument more lasting than brass.)

On the night of 17 April 1941, almost exactly 25 years ago, Fred Griffith and his colleague, W. M. Scott, were killed by a German bomb during an air raid on London. At the time of his death Griffith was about 60 years old. In an obituary written shortly afterwards it was suggested that a fitting memorial to these two men would be the construction of a new Ministry of Health building more worthy of Griffith and Scott, and of the dedicated and important epidemiological research which they had done within the dilapidated environment of their old laboratory. No one then guessed that Griffith had already built his own memorial 13 years previously when, in 1928, he published in the *Journal of Hygiene* his famous and remarkable paper on the significance of pneumococcal types (Griffith, 1928). This evening, in this first Griffith Memorial Lecture, it is my privilege and intention to try to revive for you the essence of Griffith's most outstanding discovery and, in so far as I can, to present it in perspective against the somewhat sophisticated and mature background of modern molecular genetics to which it gave birth.

Fred Griffith has been described as a shy and reticent man, whose quiet kindly manner, and his devotion to his job, made him a lovable personality to those few who got to know him. Outside his work he found his pleasure in ski-ing and in walking on the Sussex downs where he had built a cottage. Like his elder brother Stanley, who died only a few days before him, he was a medical bacteriologist whose primary and abiding interest, and his life's work, was the epidemiology of infectious disease. He believed that a proper understanding of epidemiological problems could come only from more detailed and discriminating knowledge of infectious bacterial species, and of the nature of bacterial virulence and variation. For a time he worked on the typing of tubercle bacilli with Stanley Griffith, whose published work on this topic extended over many years and was prolific. On the contrary, Fred Griffith's output of scientific papers was, by comparison, remarkable for its paucity. In view of the quality and distinction of what he did publish, however, I think that this must be ascribed to an inate humility and capacity for self-criticism so that he offered to posterity only those products of his research which he judged to be new and important.

I suppose that Griffith would have deemed his most valuable contribution to epidemiology to be the discovery that many serological types exist within group A streptococci; these are the causative organisms of what were, at that time, such