

Wilfrid Le Gros Clark:
Anatomist, anthropologist
and neuroscientist

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Sir Wilfrid Le Gros Clark

I had the privilege to know Wilfrid Le Gros Clark both as a teacher, when he was my Professor of Anatomy from 1960 to 1963, and later as a colleague, for that is what he made each of us junior researchers and demonstrators feel.

Although a revered figure in the anatomical world, his contribution to neuroanatomy is perhaps not as well known as might be, and so I have pieced together a few biographical notes about him.

Wilfrid Edward Le Gros Clark was born in Hemel Hempstead, England, in 1895, the son of a clergyman. Both his grandfathers had been surgeons at St Thomas's Hospital, London: indeed, one had been President of the Royal College of Surgeons of England. Le Gros, as I always remember him, qualified in medicine in 1916, also at St Thomas's, having begun his studies there precociously in 1912. He became a Medical Officer in the army in France for the rest of the First World War. He then

became an anatomy demonstrator at St Thomas's while studying for the Fellowship of the Royal College of Surgeons (FRCS, which he got in 1919), but soon realised that this line was not for him, although during this time he published his first research paper, already on a neuro-anatomically related subjects, the Pacchionian bodies, in the *Journal of Anatomy* (1). He seems to have been turned off anatomy at this early stage, only to more than make up for this passing negative feeling a bit later.

But it did lead him to the other aspect of his career for which he is especially remembered. As he described in his autobiography *Chant of Pleasant Exploration*, published in 1968 (2):

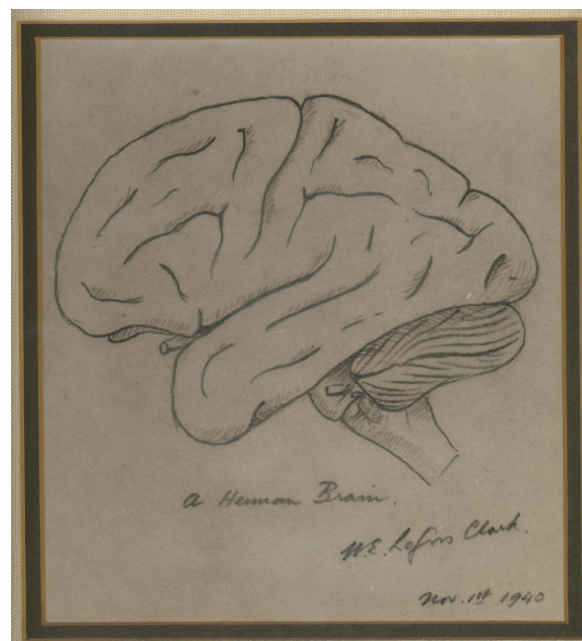
It was in such a mood of moral perplexity that I was overcome with an intense longing to escape from the artificialities of civilization by losing myself awhile in one of the remoter parts of the world.

So after a visit to the Sarawak Government Office in Millbank he was appointed Principal Medical Officer in Kuching in 1920. He stayed for three years and became an excellent practitioner, much appreciated by the Dyaks, who honoured him with a tattoo on his shoulder. His elder brother, Cyril, joined the Sarawak Civil Service in 1925 two years after Wilfrid returned to England. In 1945 Cyril, by then Chief Secretary, was tragically executed by the Japanese. While in Sarawak Wilfrid had the opportunity to study the brains of tree shrews and tarsiers, and not only their brains but their more general anatomy too, and the scene was set for his renowned contributions to both neuroanatomy and anthropology.

After his return to England, in 1924, he became Reader and head of the Department of Anatomy at St Bartholomew's Hospital in London, and was promoted to Professor in 1927. His work developed two related themes, the detailed structure of the nervous system and primate evolution. In particular his research covered the cerebral cortex and the thalamus. He combined the anatomist's macroscopic analysis with the microscopist's insight into detail. But in both he applied a rigid scientific approach to which he remained faithful throughout his career. His earliest

contributions on the tree shrew appeared in a series of papers in the Proceedings of the Zoological Society (3).

He was soon recognised as a pioneer of experimental neuroanatomy. In 1929 he returned to the Chair of Anatomy at St Thomas's. There he enhanced his reputation in the domains of structural neuroanatomy, primatology and human evolution. Near the end of his tenure at St Thomas's he published *Early Forerunners of Man* (4) which summarised his views on primate evolution and anatomy. Furthermore, much of what we now recognise as the modern foundation of our knowledge of thalamocortical relations and primate visual systems stems from Le Gros' work at that time (5).



The sketch of a "Human Brain" made by Wilfrid Le Gros Clark for Evamaria Guillery, November 1940. Photograph kindly supplied by Ray Guillery.

In 1934 he was appointed Dr Lee's Professor of Anatomy and Fellow of Hertford College, Oxford, where he

remained until retiring in 1962, and where I, as a neophyte medical student, first met him in 1960. Le Gros was appreciated as a teacher and a distinguished scientist. As an undergraduate I well remember his lectures, often not easy to follow as he had a slight lisp, but greatly inspiring.

For the time, his approach to the teaching of anatomy to medical students was rather progressive. He attempted to raise anatomy from its perceived rather lowly status to that of a modern pedagogic and scientific discipline. He believed that part of the problem on the teaching side was too much emphasis on topographical minutiae and I certainly enjoyed the benefits of his striving to instil upon us what he believed was essential, and useful. He employed everyone in the department who could conceivably be so employed to teach in one or other of the anatomical disciplines, including dissection. Graduate students were heavily involved in neuroanatomy, embryology and dissecting session, and there were always a couple of FRCS candidates to drive fear into our hearts in the dissecting room. Later, when I became a graduate student myself, largely due to the inspiration I had felt from Le Gros himself and from his disciple and my collegetutor Tom Powell, I derived great benefit from having to muck in with so much teaching. On the research side, he lived to see the day when anatomy departments widely were becoming active centres for the study of cell biology and, notably, neuroscience.

His contributions to the field of experimental neurology included the connections of the thalamus and hypothalamus and sensory inputs to the central nervous system, particularly the connectivity of the visual system, including the lateral geniculate body and

visual cortex (6-12) in collaboration notably with Sydney Sunderland and Paul Glees.

He also contributed some early work on regeneration in the central nervous system, that was, and still is, of topical importance (13,14).

Some idea of Le Gros as an extremely sensitive man can be glimpsed from the story, related to me by Ray Guillery, about whom more later, that he had been seriously hurt by the criticism by Gordon Walls in his book in 1951 (15) to the effect that Le Gros had been wrong in his functional interpretation of the famous "layers" of the lateral geniculate body being associated with distinct pathways for colour vision to the visual cortex. Not that he was angry at Walls, for he probably recognised the strength of the case made by the latter.

Le Gros is also remembered for his contributions to physical anthropology. When Raymond Dart ("father" of the 1925 australopithecine Taung Child) and Robert Broom were unearthing fossil primate remains in South Africa, Le Gros visited them there in 1947. Dart's Taung Child had not been well received in paleoanthropological circles. This was partly because it conflicted with the then widely accepted "Piltdown Man", the purported "missing link" skull unearthed in a Sussex quarry between 1908 and 1912, and only proved to be a faked mixture of orang-utan, chimpanzee, and modern human remains in 1953 (16,17). The unmasking of the fraud was a milestone in anthropology and Le Gros was one of the leading lights responsible for the truth coming out. In 1955 he published *The Fossil Evidence for Human Evolution* (18) followed by *History of the Primates* (19). In 1960, after the

famous fossil discoveries at in East Africa by Louis Leakey, with whom he also worked, he published *The Antecedents of Man* (20).

Interesting glimpses of a more intimate side of Le Gros can be seen in some recollections of him by Ray Guillery (21), a master of neuroanatomy in his own right in a career that has spanned London, Chicago, Madison, Oxford and now Istanbul, and which he kindly shared with me recently. Ray was born in Germany from where he moved to Switzerland in 1938 and finally to school in Oxford in 1940 "*still finding my feet in a new environment and learning a new language*". Mrs Le Gros Clark was on the Oxford refugee committee and there was space in their home. As his sister's name was on the list of refugees needing a home she was welcomed to the Le Gros Clarks' house in North Oxford in autumn of 1940. Ray was at a boarding school in Banbury, and in the holidays spent time with his sister in the Le Gros Clark home.

On a few occasions Le Gros took Ray into the Anatomy Department letting him help develop photographs, and showing him the monkeys in the animal quarters. Ray still has a photograph of a small sketch that Le Gros made in his sister's autograph album in 1940 (Figure 2). He writes:

She had asked Le Gros to write something for her, and I can imagine him scratching his head and wondering what on earth he could write or draw that might interest a 13 year old girl. He produced a fine sketch of a brain, labeled it "a Human Brain" and signed the page W.E. Le Gros Clark Nov 1st 1940. That was it. Oddly, the brain had proportions that made it

look like a mix of features from a macaque and a human brain. Perhaps he had spent the day with some monkey brains.

Several years later Le Gros wrote to Ray offering him a job in the Oxford Anatomy Department, but he already had a job at University College, London, was married and had children, and moving to Oxford would have meant a lower salary. Little did either realise that in 1984 Ray would be appointed Dr Lee's Professor of Anatomy in the footsteps of Le Gros.



Figure 2: Bronze bust of Sir Wilfrid Le Gros Clark by Jacob Epstein in the Le Gros Clark Building, Oxford.
http://pc74.anat.ucl.ac.uk/history/LeGrosClark_files/image003.jpg

Sir Wilfrid Le Gros Clark died aged 76 on June 28 1971. I last saw him, at work in the departmental library, two days previously.

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