

logical—or perhaps even the pharmacological side—he discovered that nicotine abolished the conductivity of a synapse. This discovery provided a method for the charting of all stations throughout the autonomic system. One such still bears his name—Langley's ganglion in the submaxillary gland. Also, of course, much of his routine consisted in the stimulation of nerve-trunks with the object of ascertaining what response was produced in the peripheral endings attached to them. But a great deal of the method was frankly anatomical. It consisted in cutting a nerve-trunk and seeking out through the innumerable ramifications of the sympathetic system the destination of all the cut fibres. These might amount to hundreds or even thousands. The cut fibres were allowed to degenerate and so could be recognised from their sound fellows by their histological appearance. When the fibres had degenerated the animal was killed, all the peripheral nerves involved were examined, and the sound fibres were separated from the degenerate ones and the latter were teased out into rows under the microscope and counted.

It is not very easy to appraise the value of Langley as a lecturer; in my student days he did not give elementary lectures; therefore I can only speak of his advanced lectures at first hand. My memory of these is that they were mines of information, and the notes which I took from them were of the utmost use to me in subsequent teaching. But I remember also that to get a clear idea of the lectures required very close attention on the part of the student. Langley's method was to pass from one subject to another by a very gentle gradation rather than by an abrupt change; so gradual indeed was the passage that unless the student was attending pretty closely he ran the chance of missing it altogether. If that happened—if, for example, you thought he was still lecturing about the spleen when he had really passed to the thymus—it was not very easy to pick up the threads. This habit, which provided an occasional stumbling-block to advanced men, presented, I imagine, much more difficulty to a class more ignorant and less able to concentrate. At all events it is certain that different persons derived very different amounts of benefit from his elementary course. No one, however, regarded the lectures as in any way trivial, or Langley as anything but the great physiologist which he was. It was a matter of conscience with him to demonstrate in person throughout the whole of every practical class in histology, and also many of those in the "machine room," his object being to get to know each man individually in so far as that object could be attained.

Langley was seventy-three years of age at the time of his death on November 5. He and Sir Edward Sharpey-Schafer formed the remaining two of a generation of experimenters which really placed British physiology in the position which it now occupies. That position has been amply sustained by a brilliant group of men ten years or so their juniors. Langley's whole life as a physiologist was spent in Cambridge, excepting a short time after the taking of his degree when he worked in Heidenhain's laboratory. It was there, I think, that his interest in the salivary and other secreting glands commenced. That interest, by a gradual transition, led to an investigation of the nerves

which operated them. Those were days of antagonistic nerves; the salivary glands provided an outstanding example of their action, and it was not unnatural to hope that if the action of the chorda tympani and the sympathetic respectively on the protoplasm of the submaxillary gland was understood, a great stride would have been achieved towards the comprehension of living processes in general. It was not to be. Nearly fifty years have passed; much work has been done (the most recent being that of Anrep and Harris), and the submaxillary gland now appears rather the example of an anomalous meeting-place of the cutaneous and internal innervations than the *venue* of a typical process of life. Langley, I think, saw this. At any rate, he forsook the study of its cells and was led by that of its nervous supply to the investigation of the autonomic system as a whole.

In Cambridge, Langley took an active part in the organisation of the scientific side of things. He was chairman, at the time of his death, of the Special Board of Biology and Geology, and at an earlier period he served a term in the Council of the Senate. Langley's "distinctions" were so numerous as to make their mere recital tedious; they occupy about a dozen lines of small print in the year book of the Royal Society. Probably there was none that he valued more than the Royal Medal of the Royal Society itself.

The above account of Langley has of necessity dealt chiefly with his scientific work. It would be incomplete without emphasising the fact that, scientist as he was, he was singularly many-sided and the very antithesis of the stage professor. Excellent company, whether as a host or as a guest, and fond of outdoor exercise of many kinds, he excelled as a skater. At one time it was his custom to go to Switzerland for the winter, and in the early 'nineties possibly there were not a dozen such good skaters as he in England.

Langley has left two material monuments, the *Journal of Physiology* and the Cambridge Physiological Laboratory. Of the former he became owner and editor. By universal consent there is no better journal; it was rigorously edited, papers were ruthlessly pruned of anything which was redundant or confusing—"woolly," as Langley used to say. Yet as an editor Langley had a wonderful sense for the important, and, severe as was his critical faculty, he had a generous appreciation of any grains of real merit in a man's work. The Physiological Laboratory at Cambridge is no less the product of his power of minute organisation. He, aided by Dr. (now Sir Walter) Fletcher, set himself the task of producing a laboratory which should be adapted, down to the minutest details, for the very various kinds of work which went on in Cambridge at that time, the work of Gaskell, of Anderson, of Hardy, of Mines, of Fletcher, of Keith Lucas, of Rivers, of Hopkins,¹ of Hill, and of quite a number of others. Greater than any material monument, however, is that of the school of workers over which he presided.

J. BARCROFT.

PROF. A. V. HILL writes: "Attention has been directed recently in the Press to the faculty of prophecy which—within limits—mankind possesses. The

¹ The physiological laboratory as originally designed included a wing for biochemistry.

following letter sent to me just sixteen years ago (Nov. 11, 1909) by my late friend and master, Prof. J. N. Langley, is an example of those qualities of scientific judgment which, on occasion, enable men of rare intellect and knowledge to predict the future. In view of what has happened since he wrote, in the scientific study of muscle, physiologists will appreciate the accuracy and insight of Prof. Langley's forecast and advice; and they may be glad to read, as a tribute to his scientific memory, the words which he himself wrote in 1909."

HEDGERLEY LODGE,
CAMBRIDGE,
Nov. 11, 1909.

MY DEAR HILL—I have been thinking over the question of what piece of work it would be best for you to undertake. I am inclined to think that you might settle down to investigate the variation in the efficiency of the cut-out frog's muscle as a thermodynamic machine. A good many years ago Heidenhain and Fick worked at this, but there is an especial problem suggested by Fletcher and Hopkins' work, as to the efficiency of the muscle working with and without oxygen, which I don't think has been touched. Once started there are plenty of further experiments to do, and the question is a very important one for muscle physiology. . . . I have, I think, Blix' apparatus in the Laboratory [he had bought it some time before as a speculation for some future pupil] which he stated to be delicate enough to show the heat developed in frog's muscle by a single muscle contraction, and we can get any other apparatus you want.

So think it over. I enclose a couple of pages showing some of the bearings of the problem.—Yours sincerely,
J. N. LANGLEY.

MR. THOMAS CASE.

MORE than one branch of learning is the poorer for the death of Thomas Case, late president of Corpus Christi College, and sometime professor of moral and metaphysical philosophy at Oxford. He was an accomplished musician, a learned student of architecture, and in his day a most successful lecturer on ancient history. Philosophy was with him only one among many interests which claimed his attention almost equally. In philosophy he was as one born out of due time. A man of singularly individual mind and temperament, he took his own line in philosophy, and vigorously resisted the semi-Kantian, semi-Hegelian idealism which in his earlier days became the prevailing philosophy at Oxford. But though he resisted it, the influence of Green and Wallace, of Bradley and Bosanquet, was too strong for him, and he remained to a large extent a solitary figure among Oxford philosophers—less fortunate in this respect than Cook Wilson, whose reaction against idealism carried with it the support of many of his younger colleagues. Wilson's realism was, it must be admitted, the better based and the more philosophical of the two.

Case was always somewhat too dogmatic in his mode of thinking and of presentment. His own insight was often keen and penetrating, and he was too apt to assume a readier assent to what to himself seemed clear, than he was actually likely to receive from the average reader. It must be confessed, also, that he was capable of strange blunders. In his first

book, "Physical Realism" (1888), while he says much that is acute and well worth reading, he puts forward a theory of the object of perception which is one of the least plausible of all theories on the subject—that what we see or hear is our optic or auditory nerves coloured or resonant.

Apart from this book, Case's chief philosophical writings are the articles on logic, on metaphysics, and on Aristotle in the 11th edition of the "Encyclopædia Britannica." The article on metaphysics is a learned and able study of the main trends of metaphysical thought in modern times. That on logic, while devoted in part to expounding the views of Case's two heroes in philosophy, Aristotle and Bacon, shows considerable appreciation of the advances made by the subject in the nineteenth century. The article on Aristotle is notable for the attempt, in which Case to a large extent anticipated the brilliant German scholar Werner Jaeger, to trace a development in Aristotle's thought as between different writings and to use this as a reason for the determination of their dates. Two of his main contentions, that the "De Interpretatione" and the "Eudemian Ethics" stand on the direct line of development from Plato's thought to that most typical of Aristotle, and are therefore genuine and early works, are likely to stand the test of time.

To the younger generation at Oxford, Case's attitude on political and academic questions seemed to be that of extreme toryism. But he himself insisted that he was not a Tory but a Palmerstonian Liberal. He was, first and last, above everything else an individualist. What could not be doubted by any one was that he was an able, public-spirited, and extremely formidable fighter in whatever cause he espoused. Oxford had no more genial, clever, and amusing resident than "Tommy Case," as he was universally called, *amoris causa*.

SIR JOHN MACALISTER.

SIR JOHN YOUNG WALKER MACALISTER, who died in his seventieth year on December 1, had been for many years secretary and consulting librarian to the Royal Society of Medicine, a post in which his imagination, energy, and personal charm enabled him to do great things. The second son of Donald MacAlister of Tarbert, Cantyre, he was educated at Liverpool High School, studied medicine for three years at Edinburgh, and was then driven by ill-health into the quiet waters of librarianship, only to spend the rest of his life in overflowing his banks, much to the benefit of the surrounding country. He passed rapidly from a sub-librarianship at Liverpool to librarianships at Leeds, at the National Liberal Club, and finally, in 1887, at the Medical and Chirurgical Society, then uncomfortably housed in Berners Street. Under its new librarian's inspiration, the Society soon moved to a fine house at 20 Hanover Square, where it became the benevolent landlord of many other associations.

While the Medical and Chirurgical Society was developing in its new quarters, MacAlister put in eleven years of fine work as the honorary secretary of the Library Association, which he piloted until it obtained a royal charter in 1898. He also founded *The Library*, which for ten years was the organ of the Association, for twenty more an independent quarterly,