

Kensington and the scientific scene gave him a position of informal power within the firm. His advice was almost indispensable.

In 1878, for example, Jack wrote to him confidentially<sup>19</sup> about Professor Tanner of South Kensington. "Is he a good man? What number of pupils from what kinds of schools does he examine? He has a sort of primer on 'the farm' which we are considering". The *Nature* Science Class Book and Science Primer series (under Huxley, Balfour Stewart and Roscoe) were also vital to Macmillan's overall scientific programme. In 1876, Jack told him that<sup>20</sup>

Macmillan is all for going on with the *Nature* series, believing that a first rate book or two would loft it tremendously all round. He supposed that Chisholm on balances is quite ready. . . . Anything else in wind or ready? . . . If you could keep up announcements of one or two popular books in the *Nature* series it might help a good deal.

Lockyer's light teaching schedule at South Kensington fortunately left him time for *Nature* and research. But Lockyer's transference to the Science and Art Department involved him in the running battles between that department and the Treasury. Largely through its museum purchases, the Science and Art Department, under Sir John Donnelly, had acquired notoriously expensive artistic and scientific tastes. At a time when the education estimates were the most rapidly increasing sector of public expenditure, the Science and Art Department was expanding even faster than its "sister", the Education Department. The Treasury fought hard against "that omnivorous Donnelly who will soon absorb Hyde Park for his marvellous collection of some good things and a marvellous collection of rubbish"<sup>21</sup>. Lockyer's dealings with the Treasury—which even allotted a special file to him—were compounded by his successive applications for government assistance on eight successive eclipse expeditions, through the Solar Physics Committee and through the Royal Society. He had a gift for applying the resources of one establishment to the needs of another—a gift which did not endear him to the Treasury bureaucracy. "I am sure I do not know why or in what part of the Vote his salary is now smuggled", wrote Ralph Lingin in 1877 after one particularly exasperating episode<sup>22</sup>. Despite continual harassment, his applications (dismissed cynically by one Treasury clerk as merely "sops to South Kensington")

were repeatedly approved, and successive generations of Treasury officials backed down before his persistence.

In the meantime his scientific positions grew more controversial. Throughout the late 1860s, he had debated with Warren de la Rue about the existence of the chromosphere and had had searching arguments with chemists who believed that helium was a version of hydrogen. In 1872, following a disagreement with Richard Proctor, and intense dissatisfaction with the Royal Astronomical Society over the publication of the 1871 eclipse data, Lockyer (and later de la Rue) resigned from the Council of the Royal Astronomical Society<sup>23</sup>. In 1875, when Richard Proctor attacked Lockyer for the term "chromosphere" in the *Cornhill*, Lockyer's friends rallied round him. P. G. Tait of Edinburgh wrote<sup>24</sup> in his defence and enclosed a letter "for *Nature* smashing him [Proctor] to powder for another business. Really these scribblers of venom ought to be scrunched". To some extent, *Nature* did just this.

In early 1877, in the midst of his struggles, Lockyer fell ill and spoke again of giving up science. Leaving home to do research, he could not deal with the cares of his sick wife and son. Lockyer<sup>25</sup> told Hooker that "he stood to give up science very soon". But, Hooker reassured him<sup>26</sup>, "You of all persons must not talk of giving up science, no-one will listen to it". The news quickly got round the scientific circle. Two weeks later Macmillan wrote to Lockyer<sup>27</sup>: "Brunton [Lockyer's physician] tells Craik that he thinks you should have a quiet rest on the continent. If the enclosed cheque will make this easier for you, the firm desires your acceptance of it with the love of all the members".

In 1878, Lockyer's son Frank died and his wife Winifred followed the next autumn. The twin tragedy and the responsibility of caring for eight children left their mark on him. He seems to have thrown himself into research and writing whenever he could, for the next twenty-four years There was little time for recreation or society.

Most of Lockyer's research expenses were met by grants from the Government grant to the Royal Society and by using the chemical and physical equipment and the detachment of Royal Engineers at South Kensington. In 1877, Lockyer was appointed chairman of the Solar Physics Observatory, which meant an additional £500 (eventually £1,000) in research expenses. He was also the lecturer in astronomy at the Norman School of Science at a salary of £450 and was allowed to earn up to £300 more in examining fees. His fame and reputation spread. He went to the United States on an eclipse expedition in the summer of 1878, and Thomas Cheney asked him, "as the most eminent literary exponent of science with whom I am acquainted", to write occasional leading articles for the *Times*<sup>28</sup>. In 1884, he was elected vice-president of the Incorporated Society of Authors<sup>27</sup>.

By the 1880s, to all appearances, his position had never been better. His association with Donnelly proved extremely happy. In 1881 he was made Professor of Astronomical Physics at the reorganized College of Science and his official salary was set at £750 a year. Together with fees, this gave him a salary by 1890 of about £1,000. By 1890 his basic salary was raised to £800 to the level of other full professors in the Royal College of Science, which brought him comparative wealth. It was this which enabled him to build a house and observatory at Westgate on Sea where he and Fowler worked at weekends.

Nonetheless, Lockyer was rarely happy or at ease. In the late 1880s and 1890s, controversy played a larger part

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#### Transactions of Scientific Bodies

I WISH it were possible to induce our learned societies to be a little more liberal; it should be their aim to spread knowledge, not make it a luxury for the wealthy. I happen to wish to read a paper by Professor Tait on "Rotation," published in the *Transactions* of the Royal Society of Edinburgh. The only libraries I have access to are those of the British Museum and London Institution. At the Museum there is no volume of the "Transactions" later than 1864; at the London Institution no volume later than 1862; so that if I persevere in my intention of reading the paper, I must buy the volume containing it, for which I must pay 2*l.* 2*s.*—that is, I must buy thirteen papers I don't want in order to be able to read one which I do want; these include one on the temperature of newly-born children, and another on tetanus in cold-blooded animals.

All papers should be published separately; this would lead to a much wider diffusion of them, and the Societies would benefit by their increased sale.

London, March 7

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