

so it did not get contributors. It was authoritative without an audience, and agnostic when most naturalists were still persuaded by natural theology. Despite Hooker's warning, Huxley assumed editorial responsibility and wrote most of the unsigned articles. Two voluntary assistants came to help, but they were undependable and counter-productive. "I find, unless I review every page of it, it goes wrong", Huxley finally admitted¹⁵. When at last he decided to appoint a paid editor, the journal's financial position could not bear the expense. The last blow came when American journals "pirated" articles without permission and thus limited American circulation to about twenty copies¹⁶.

The *Natural History Review* proved, as John Murray once remarked¹⁵, that "quarterlies did not pay". For Huxley and his colleagues, and for natural science, the need for an effective means of expression remained abund-

antly clear. It was also clear, however, that most men of science had not the time, the expertise or the financial resources to get a scheme under way.

There were a few exceptions. One was the *Quarterly Journal of Science*, begun in 1864 by James Samuelson, a barrister, and William Crookes, FRS, the chemist. Crookes was a student of Hoffman's at the Royal College of Chemistry in Oxford Street. After serving in various minor scientific posts, Crookes found himself out of work but wanting to do science. It is true that he had an excellent chemical training, but, as his biographer recalls¹⁷, "in those days a scientific training was no passport to a public appointment. . . ." With the help of Wheatstone, Crookes got £20 from the Royal Society to aid his researches and found odd jobs to support himself. Journalism beckoned. In 1856, he edited the *Liverpool Photographic Journal* and in the following year he became editor for the London Photographic Society. In 1859, buying the copyright of the old *Chemical Gazetteer* and making arrangements for printing with William Spottiswoode, the scientific house, he began *Chemical News*. The weekly was addressed to chemical manufacturers but insisted on including "abstract science", provision for advertising and "weekly summaries of all matters of a scientific or practical nature" from eminent correspondents abroad¹⁷. Its success was daily noted; "with the exception of the *Phil. Mag.* and proceedings of learned societies no other English scientific journal enjoys this universal diffusion". Crookes's earnings went to keep up his laboratory and family, but *Chemical News* paid him only three and a half guineas a week. In 1861, he therefore began to contribute to the new *Quarterly Review of Popular Science* edited by James Samuelson. As he reminded Angus Smith¹⁷, "a stationary income will not do with an increasing family and domestic necessities are apt to make scientific men very mercenary". In January 1864, Crookes, recently elected to the Royal Society, joined with Samuelson in the *Quarterly Journal of Science*. It was to be¹⁸ "a review of the progress of science . . . and a medium of communication between students in various branches of Natural and Physical Science, as well as between Scientific Observers and the Reading Public". "We have been told by men in every walk of life," Crookes announced¹⁹, that "the time has come when Science may claim for herself a special organ". The journal boasted²⁰ the support of fifty-eight listed men of science "ready to avail themselves of these pages". Of this list, eighteen were later to write for *Nature*. Among them occurs the name of J. N. Lockyer, FRAS.

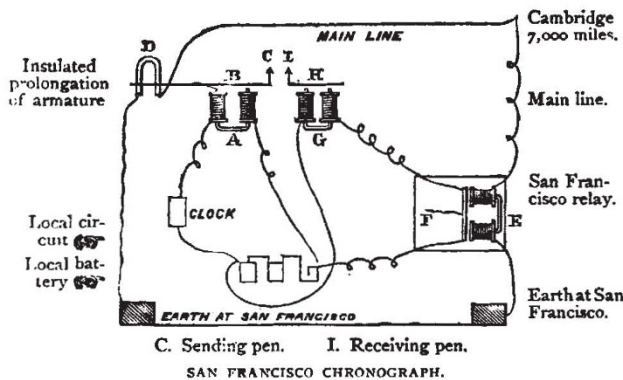
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PHILADELPHIA

American Philosophical Society.—We select the following extracts from the reports of the recent meetings of this Society:—

Prof. Trego has communicated an extract from a letter from Mr. Davidson of the Coast Survey, to Mr. D. B. Smith of Germantown, detailing the method employed to obtain the recent determination of longitude and the velocity of the electric current between Cambridge and San Francisco.

"I give you the first written news not only of our telegraph longitude success, but of the success of my plan for determining the time of transmission of clock signals from my clock to Cambridge and back, over 7,000 miles of wire, through 13 repeaters and a multitude of relays. Through the liberality of the Western Union Telegraph Company, I had two trans-continental lines placed at my use, and last night I succeeded beautifully. My circuit was as follows. My clock breaks the local circuit every second, depriving the helix A of its electricity, and the magnet of its magnetism. This relieves the armature B, which is drawn away by a spring, and the pen C makes its record on the revolving cylinders of the chronograph. At the same instant the main current to Cambridge and back is broken by the insulated prolongation of the armature at D, and the break transmitted to Cambridge and back, through 7,000 miles of



wire, to my relay E, which relieves the armature F, and the local circuit is broken; the helix G deprived of its electricity and the magnet of its magnetism, relieving the armature H, which is drawn away by a spring, and the pen I makes the record on the revolving cylinders of the chronograph. These two pens are on the same horizontal line. Our experiments show that it took 0.87 of a second to traverse the above circuit. I also made experiments through to Buffalo, Chicago, Omaha, Cheyenne, Salt Lake, and Virginia, and back. All successful. As this experiment was not contemplated by the programme of the longitude experiments, I have the satisfaction of seeing my ingenuity successfully proved."

Prof. Kirkwood has communicated through Mr. Chase a discussion of the periodicity of the Sun's spots. We shall return to this communication.

¹ Thornton, John L., and Tully, R. I. J., *Scientific Books, Libraries and Collectors*, 244, 301 (1962).

² Smith, R. A., *The Life and Work of Thomas Graham*, 11 (London, 1884).

³ Barwick, G. F., *The Magazines of the 19th Century*, *Trans. Bibliog. Soc.*, XI, 241 (1911).

⁴ *Huxley Papers*, 3, Hooker to Huxley, Summer, 1856.

⁵ Smith, R. A., *The Life and Work of Thomas Graham*, 16 (London, 1884).

⁶ *Tyndall Papers*, 11, 2868, Huxley to Tyndall, October 22, 1854.

⁷ *Tyndall Papers*, 11, 2888, Huxley to Tyndall, April 20, 1858.

⁸ *Tyndall Papers*, 11, 2889, Tyndall to Darwin (n.d.).

⁹ *Huxley Papers*, 3, 28, Hooker to Huxley, April 21, 1858.

¹⁰ Bevington, Merle M., *The Saturday Review, 1855-1868*, 277 (New York, 1910).

¹¹ *Huxley Papers*, 3, 119, Huxley to Hooker, July 18, 1860.

¹² *Huxley Papers*, 3, 81, Hooker to Huxley, January 4, 1861.

¹³ *Natural History Review*, 1, notices (1861).

¹⁴ *Natural History Review*, 1, editorial (January, 1861).

¹⁵ Huxley, Leonard, *Life and Letters of Thomas Henry Huxley*, 211 (London, 1900).

¹⁶ See *Lubbock Papers*, Add mss. 49639, copy of letter to the editors of the *Journal of Science*, from Williams and Norgate, November 7, 1862.

¹⁷ Fournier, E. E., *The Life of Sir William Crookes*, 34 (London, 1923).

¹⁸ Fournier, E. E., *The Life of Sir William Crookes*, 89 (London, 1923).

¹⁹ Advertisement, *Quarterly Journal of Science* (1864).

²⁰ Introduction, *Quarterly Journal of Science*, 1, 4 (1864).