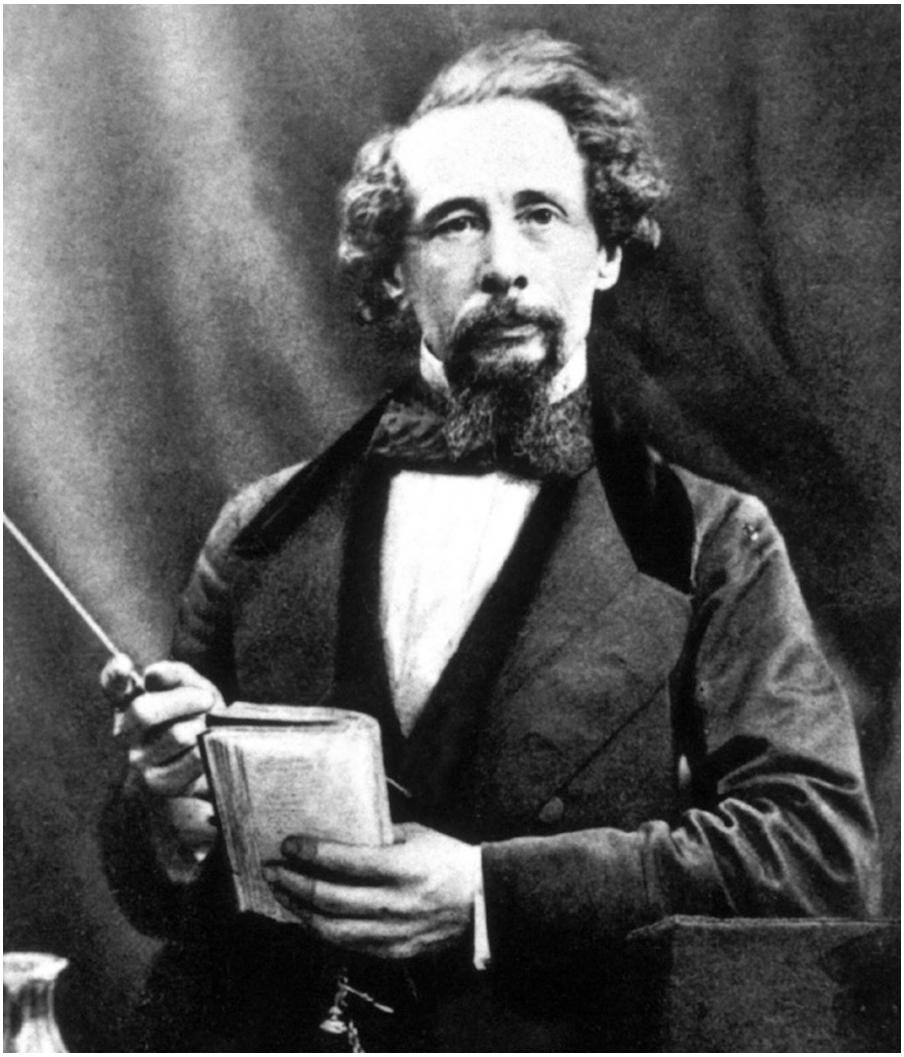

REX FEATURES

Novelist Charles Dickens delighted in scientific revelations, but deplored sterile reductionism.

LITERATURE

Wonders and ologies

In the week of the Dickens bicentennial, **Alice Jenkins** explores the literary giant's conflicted take on science.

"Go and be somethingological directly," Mrs Gradgrind orders her children in Charles Dickens's *Hard Times* (1854). The children are brought up on their father's strict utilitarian principles — or rather, on Dickens's ferocious satire of them. So they have "a little conchological cabinet, and a little metallurgical cabinet, and a little mineralogical cabinet; and all the specimens were all arranged and labelled", but they have no fairy tales or nursery rhymes — nothing that might encourage fancy or wonder.

Not surprisingly, the children come to bad ends. On her deathbed, Mrs Gradgrind tells her daughter: "There is something — not an Ology at all — that your father has missed, or forgotten."

Science, in Dickens's view, does immense good — moral, social and intellectual — but only when it works hand in hand with imagination and reverence. Relations between science and Christianity in the nineteenth century were often more harmonious than we might imagine, if we focus only on the challenges that natural selection posed to some kinds of religious belief. Dickens is an interesting case study.

He was a Protestant Christian, but had no strong affiliation to any particular sect, and did not see science as a threat to religious faith. On the contrary, he argued, learning the true nature of forces or objects brings us closer to their creator. In a speech he gave in 1869 at the Birmingham and Midland Institute, he speculated that Jesus might have taught scientific truths about the "wonders on every hand", but chose not to because "the people of that time could not bear them".

It is characteristic of Dickens's undogmatic attitude to both science and religion that he was largely unfazed by Charles Darwin's *On the Origin of Species* (John Murray, 1859). He published a review of the *Origin* in his magazine, *All the Year Round*, in 1860. Although not wholly persuaded by Darwin, the author did acknowledge that the theory "entails the vastest consequences", and quoted Darwin at length. Darwin in turn was a long-time fan of Dickens's novels, and literary critic Gillian Beer has suggested that Darwin drew on Dickens in writing the *Origin*. In *Darwin's Plots* (Cambridge University Press; 2000) Beer highlights the shared concerns of these two eminent men — among them, the relationship between the extraordinary profusion of people and things, and the many-layered interconnections between entities.

SCIENCE WITH FEELING

Dickens's objection in *Hard Times* was not to science itself, but to the reductionist principle that imposes stultifying order and leaves no room for emotion or imagination. Plenty of Victorian scientific writers would have agreed with him. Michael Faraday, for example, taught that "in the pursuit of physical science, the imagination should be taught to present the subject investigated in all possible, and even in impossible views". And, in a passage that became a touchstone for Victorian science writing, geologist Adam Sedgwick wrote in 1831 that if geology were to cause "the imagination, the feelings" to be "blunted and impaired", then the subject would become "little better than a moral sepulchre".

Dickens was appalled by people whose scientific knowledge was not connected to imagination or feelings. As soon as we meet Bradley Headstone, the teacher in *Our Mutual Friend* (1865), we know that he will prove a villain, because his mind is

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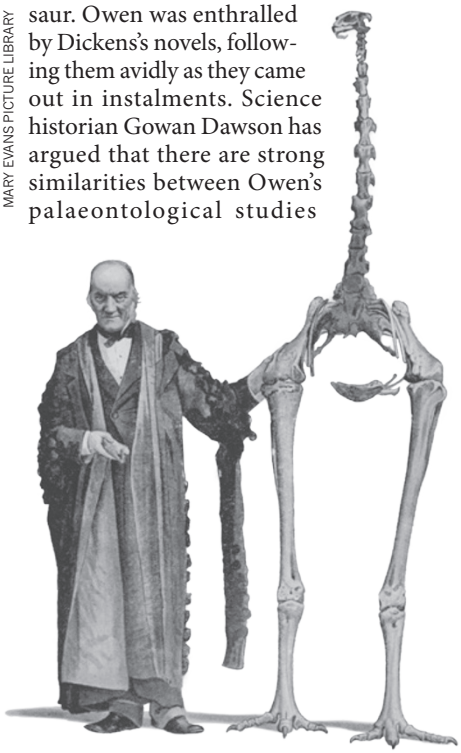
CHARLES DICKENS MUSEUM, LONDON

Dickens wove science into *Our Mutual Friend*, basing taxidermist Mr Venus on anatomist Richard Owen.

rule-bound and sterile: "From his earliest childhood up, his mind had been a place of mechanical stowage … astronomy to the right, political economy to the left — natural history, the physical sciences, figures, music, the lower mathematics, and what not, all in their several places." The same tidy-mindedness that indicates the barrenness of the little Gradgrinds' natural specimens foretells Headstone's descent into criminal insanity.

What excited Dickens most about science was its ability to reveal an unimagined world behind ordinary objects. "The facts of science are at least as full of poetry, as the most poetical fancies," he wrote in an 1848 review of Robert Hunt's *The Poetry of Science*. By revealing the wonder of everyday things, science compensates us for the beloved but ignorant beliefs it destroys. "When [science] has freed us from a harmless superstition," Dickens wrote in the same review, "she offers to our contemplation something better and more beautiful, something which, rightly considered, is more elevating to the soul, nobler and more stimulating to the soaring fancy." Dinosaurs, he went on, are really far more impressive than dragons, and coral reefs more so than mermaids.

Accordingly, Dickens championed writers who used science to show the world as spectacular, magical or astonishing. Among his close friends were mathematician and father of the computer Charles Babbage, and Richard Owen, the comparative anatomist who coined the word dinosaur. Owen was enthralled by Dickens's novels, following them avidly as they came out in instalments. Science historian Gowan Dawson has argued that there are strong similarities between Owen's palaeontological studies — which followed the principles of French naturalist Georges Cuvier to reconstruct entire extinct animals from a single fossil bone — and the way Victorian novel readers tackled serially published novels.



MARY EVANS PICTURE LIBRARY

Palaeontology pioneer Richard Owen (with a moa skeleton) was one of Dickens's close friends.

Both Owen and Babbage seem to have made their way into Dickens's novels — Owen as the taxidermist Mr Venus in *Our Mutual Friend* (1865), and Babbage as one of the models for Daniel Doyce, the gifted inventor in *Little Dorrit* (1857). Dickens uses his satire of the 'Circumlocution Office' in this novel to protest against the sluggish government bureaucracy that was delaying Babbage's progress with his Difference Engine.

HOUSEHOLD NAMES

Scientists also appeared in Dickens's journalism. As editor of the popular family magazine *Household Words* (1850–59), Dickens sought out writers who he thought were sympathetic to his view that science should make us see our everyday surroundings imaginatively. In 1850, for instance, he asked Percival Leigh, a physician-turned-writer, to rework Faraday's notes for his lectures on the candle and domestic chemical philosophy as articles for the magazine.

Leigh turned Faraday's notes into narratives, inventing a family, the Wilkinsons, whose young son regaled his family at tea-time with information he had acquired from the scientist's lectures at the Royal Institution. This format meant that the science could be broken up into conversational chunks, and lightened with mild domestic comedy.

Even though Dickens was happy to endorse contemporary science when he judged it to be supporting religion, feeding the imagination and telling stories, he was not above flouting scientific law for the sake of sensation. In *Bleak House* (1853), for example, two men in search of a crucial lost bundle of letters visit Krook's rag-and-bottle shop, only to find that "a smouldering suffocating vapour", "a dark greasy coating on the walls and ceiling", and a thing that looks like a small burnt log are all that remain of Krook: he has been the victim of "Spontaneous Combustion".

The controversy that followed the publication of this unscientific episode is well known. Reproached in print by science writer George Henry Lewes for perpetuating a "vulgar error … peculiarly adapted to the avid credulity of unscientific minds", Dickens responded with a list of apparent real-world cases of spontaneous combustion and a defiant preface defending them as authentic, even though they had been thoroughly discredited by Lewes and others.

Aware that this was not enough to regain credibility, Dickens concluded his preface with an appeal to the imagination: "In *Bleak House*, I have purposely dwelt upon the romantic side of familiar things."

It was the same argument that he had always made: that everyday things, and ordinary people, contain the potential for astonishing transformation. In the past he had championed science as a way of revealing this "romantic side", but this time, backed into a corner, he used it to defend a belief that no man of science could countenance.

For Dickens, science was compelling when it could be domesticated, moralized and made into an updated version of the old fairy tales, a way of telling poetical and magical tales about the world. But when science conflicted with a good story — he combusted it. ■

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