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THE INTERNATIONAL WEEKLY JOURNAL OF SCIENCE

## SCIENCE. FICTION.

An intimate relationship,  
from H.G. Wells to *Star Trek*  
and beyond **PAGE 162**



EDUCATION

### HOW TO BUILD A GENIUS

*The maths prodigies who go  
on to change the world*

PAGE 152

ANTIMICROBIALS

### A PRECIOUS RESOURCE

*Respect and care required to  
combat resistance*

PAGE 159

DRUG DEVELOPMENT

### THE PERFECT PAINKILLER?

*Opioid-like pain relief  
without the side effects*

PAGES 170 & 185

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Wells in 1931, about to leave London for a tour of the United States.

## SCIENCE JOURNALS

# The worlds of H. G. Wells

**Simon J. James** looks back at the richly varied contribution of the science-fiction writer and science popularizer.

**H**erbert George Wells (1866–1946) occupies a singular place in science and culture. Practically reinventing science fiction in landmark books such as *The War of the Worlds*, he also wrote prolifically on science, education, history and politics: in a career spanning 6 decades, he penned more than 150 books and pamphlets, as well as numerous articles in, and letters to, the press. Living through the late-nineteenth-century burgeoning of the sciences, the societal and technological upheavals of the early twentieth century and two world wars, Wells both absorbed revelations and delivered some — foreseeing

powered flight, space travel, tanks and the atomic bomb, and becoming an enthusiastic and committed popularizer of science.

Behind Wells's enormous output was a desire to use writing to make the world better — by projecting either a utopian vision of a perfected future, or dystopias revealing how the lessons of his work went unheeded.

Among his extraordinary achievements, Wells was one of the earliest major English

writers to be a trained scientist. The word 'scientist' had been coined by historian William Whewell just 33 years before Wells's birth. Wells — the child of servants-turned-shopkeepers — escaped apprenticeships in drapers' shops to become a pupil-teacher at Midhurst Grammar School in the south of England. A scholarship propelled him to what is now Imperial College London, where he studied biology under champion of Darwinism T. H. Huxley, graduating in 1890. He never practised as a scientist; nor did he see himself as an 'artist', preferring 'journalist', particularly later in his career, when politics became more important in his writing.



**SCIENCE. FICTION.**  
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TOP: ILLUSTRATION: HENRIQUE ALVIM CORRÊA. REPRODUCTION: (C) BRITISH LIBRARY BOARD. L45/3317; BOTTOM: LONDON FILMS/UNITED ARTISTS/THE KOBAL COLLECTION

Wells's brilliance as a communicator of science drew him to many friendships with scientists — not least Richard Gregory. The astronomer, who was at university with Wells, was *Nature's* second editor. Wells was to publish 25 pieces in the journal over 50 years, inspiring and provoking scores of contemporary thinkers into contributing a rolling tide of correspondence, book reviews, notices and other commentary on his output.

Wells was also publishing inspired books at a furious pace. His first were the scientific textbooks *Honours Physiology* and *Text-book of Biology* (both 1893); the latter went into many editions. The topics rapidly ramified. The year 1895 alone saw a short-story collection (*The Stolen Bacillus and Other Incidents*), a fantastic romance in which an angel falls to Earth (*The Wonderful Visit*) and a volume of essays, as well as his first full-length work of fiction, *The Time Machine*. That book, with Wells's other late-1890s 'scientific romances' *The Island of Doctor Moreau*, *The War of the Worlds* and *The Invisible Man*, would set the bar for science fiction. They are also among a number of books by Wells that had an impact on science itself.

*The War of the Worlds* inspired Robert Goddard — inventor of the liquid-fuelled rocket, whose research led to NASA's Apollo programme — to devote his life to space travel. The book's "heat-rays" also presaged military lasers. The hero of *The Island of Doctor Moreau*, Edward Prendick, "had spent some years at the Royal College of Science, and had done some researches in biology under Huxley"; the book's animal-human hybrids are rough precursors to today's embryonic chimaeras. Wells's 1914 *The World Set Free* predicted the atomic bomb, drawing on and subsequently influencing chemist Frederick Soddy's work on radioactivity, and influencing physicist Leo Szilard in his work on the neutron chain reaction. *The Shape of Things to Come* (1933) foreshadows the Second World War, and its 1936 film adaptation *Things to Come* (produced by Alexander Korda and starring Raymond Massey) ends with humanity launching its first spacecraft.

Wells was irritated by comparisons to fellow science-fiction giant Jules Verne. The feeling was mutual. Verne complained that the antigravity metal favorite in Wells's *The First Men in the Moon* (1901) was pure invention, compared to the gunpowder-fuelled rocket in his own 1865 *From the Earth to the Moon*. But Wells's main interest was never technology. After inventing the insectoid bodies of the Selenites in *The First Men in the Moon*, or the mind-reading aliens of 1937's *The* ▶

**"Wells was driven by the conviction that education was paramount to clear thinking and efficient, happy lives."**



An illustration for *The War of the Worlds* drawn by Henrique Alvim Corrêa (top) and a still from the 1936 film adaptation of *The Shape of Things to Come*.

► *Camford Visitation*, he went on to imagine the significance of these fantastic elements for human psychology and culture, setting a template that has since been followed by the most literary of science fiction (from the likes of Margaret Atwood and China Miéville).

Wells was also honing his journalistic skills. His first essay in *Nature*, ‘Popularising Science’ (*Nature* 50, 300–301; 1894), asks for standards to be set in popular scientific writing to promote accessibility. He would go on to publish *Nature* articles on a range of subjects (see John S. Partington’s admirable and comprehensive *H. G. Wells in Nature, 1893–1946*; Peter Lang, 2008). But education, more than fiction, science or indeed science fiction, was to become the keynote of Wells’s writing career.

Owing, in part, to his own escape from apprenticeship into an intellectual life, Wells was driven by the conviction that education was paramount to clear thinking and efficient, happy lives. Even his most fantastic, futuristic writings contained lessons for the present, intended to lead to a more utopian ordering of the world. A lecture to the Royal Institution of Great Britain, published as ‘The Discovery of the Future’ (*Nature* 65, 326–331; 1902), offers a window on the development of these ideas, arguing for the importance of conscious forward-thinking:

We travel on roads so narrow that they suffocate our traffic; we live in uncomfortable, inconvenient, life-wasting houses out of a love of familiar shapes and familiar customs and a dread of strangeness; all our public affairs are cramped by local boundaries impossibly restricted and small. Our clothing, our habits of speech, our spelling, our weights and measures, our coinage, our religious and political theories, all witness to the binding power of the past upon our minds.

For Wells, the scientific method conferred on its user the authority to rethink and challenge these stale ideas, and should underpin every area of human endeavour. (This positivistic idea of science was fairly short-lived, lasting only from Charles Darwin’s dethroning of humanity as the summit of creation to the early-twentieth-century advent of quantum mechanics, which undermined claims of absolute scientific certainty.) But Britain’s educational system failed to enshrine science properly, Wells felt; the privileged status of classics was a consistent target of his ire. The result was global woe: “to defective education was due the general neglect of science and ‘muddling through,’” as he told the 11th

**“For Wells, the scientific method conferred on its user the authority to rethink and challenge stale ideas.”**

annual meeting of the British Science Guild (*Nature* 99, 186–187; 1917). His hope was that, if the intellectual enquirer were armed with the right kinds of knowledge, history might be predicted like the movements of planets and tides. Then, informed by the knowledge of humanity’s shared evolutionary origins, the history of the future would see nation states dissolving in favour of a system of cooperative world government.

Wells’s significance over most of his career rested on his status as a public intellectual, and he relished the international audience reached by his publications. His prescience was a vital element of his popularity, and not just in science fiction. For instance, he imagined something like a World State-sponsored Wikipedia. In an address to the Royal Institution in 1936 on the “World Encyclopaedia” or “World Brain”, he described it as:

the mental background of every intelligent man in the world. It should be alive and growing and changing continually, under revision,



Wells recording for the BBC (top) and during his biology studies at university.

extension and replacement from the original thinkers in the world everywhere. Every university and research institution should feed it. Every fresh mind should be brought into contact with its standing editorial organization ... its contents would be the standard source of material for the instructional side of school and college work, for the verification of facts and the testing of statements — everywhere in the world.

*World Brain* (1938) amplified these ideas. This book, with the 1920 *The Outline of History* — a best-selling opus on the story of humanity from its evolutionary origins to his hoped-for utopia — was Wells’s response to the catastrophe of the First World War.

Wells lived to see the catastrophe of the second. Having witnessed such a failure to act collectively, his final contribution to *Nature*, in 1944, was an attempt to understand the actions and motivations of the individual. ‘The Illusion of Personality’ suggests that the notion of a stable personality is an illusion, because consciousness constantly flits from one moment to the next (*Nature* 153, 395–397; 1944). Reading the piece now, it is fascinating to see a writer so long concerned with thinking on a global scale, and over hundreds to thousands of years, preoccupied at the end of his career with the micro-impressions of a single, impermanent sensibility.

Wells knew, and argued with, most of the significant writers and political leaders of the late nineteenth- and early twentieth-centuries. Two friendships were constant: one with fellow novelist Arnold Bennett, the other with Gregory. Before he became editor of *Nature*, Gregory had co-authored *Honours Physiology* with Wells; he was an assistant editor at the journal when Wells, a then-unknown teacher and jobbing science writer, published ‘Popularising Science’. Gregory advised Wells on lunar gravity for *The First Men in the Moon*; and when Wells died in 1946, Gregory wrote the *Nature* obituary of the genius with whom he had first collaborated 50 years before (*Nature* 158, 399–402; 1946). Gregory’s review of *The War of the Worlds* (*Nature* 57, 339–340; 1898) had ventured that “scientific romances are not without a value in furthering scientific interests; they attract attention to work that is being done in the realm of natural knowledge, and so create sympathy with the aims and observations of men of science”. To attract attention and create such sympathy was Wells’s steadfast aim. ■

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