nature of isotopes." But it was mainly for the latter.

In 1901 the McGill Physical Society held a debate on the "existence of bodies smaller than an atom," with Rutherford chairing the meeting. Prior to the meeting, Rutherford wrote to J. J. Thomson that the goal was to "demolish the Chemists." Soddy, a temporary demonstrator in McGill University's chemistry department, spoke for the opposition and read a 32-page paper on "chemical evidence for the indivisibility of the atom." He condemned Thomson and Rutherford, who he said had "been known to give expression to opinions on chemistry in general and the atomic theory in particular which call for strong protest."[1] After the meeting, Rutherford, who had already determined that a radioactive gas emanated from thorium, asked Soddy to join in the chemical side of his research. In 1908 Rutherford received eight nominations for the Nobel Prize in Physics or Chemistry, but only one of those nominators proposed that he share the prize with Soddy.

Each of those small errors could have been corrected with just a minor change of wording if they had been known. There are many myths in circulation about Rutherford's life[2] (some of which I have recorded on the "Rutherford mythology" page of my website, www.rutherford.org.nz). He deserves to have his early life and work recorded accurately.

References

1. J. Campbell, *CERN Courier*, May/June 2019, p. 27.
2. J. Campbell, *AIP History Newsletter* **53**(2), 4 (2021).

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Quantum quibble

"Quantum" is a word with several definitions. As a noun—with the plural form "quanta"—it can refer to the smallest indivisible unit. It can also be an adjective meaning "quantum mechanical."

Yet I am here to argue against its use as an all-encompassing word referring to an alternatingly legitimate and overhyped morass of 21st-century research and the amusingly named "quantum industry." In addition to being vulgar, this usage is imprecise and leads to vague claims that cannot be evaluated—although that is part of its appeal.

Observe, if you like, the following sentence from page 26 of the December 2021 issue of Physics Today: "Israel's number of principal investigators 'at the core of quantum,' about 125, is low even for a small country, he says." Come again?

I am a skeptic of quantum technologies who has enjoyed years of research in quantum optics. But even zealous enthusiasts should seek a clear scientific language that aids in separating the wheat from the chaff.

The history of grammar is full of endless wars fought over trifles. But the precision of physics deserves protecting, and nothing is less precise than a catchall.

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Another way to store energy

One method of energy storage that is notably absent from David Kramer's "Better ways to store energy are needed to attain Biden's carbon-free grid" (Physics Today, September 2021, page 20) is superconducting magnetic energy storage. SMES was studied extensively by Roger Boom and his group at the University of Wisconsin–Madison, beginning in the 1970s. Small SMES units have been built and operated successfully, which puts SMES ahead of some of the technologies mentioned in Kramer's item.

One of the advantages of superconducting magnets, as is well known, is that if they are sufficiently cooled, they can operate indefinitely. If properly designed, they also are not subject to the sort of catastrophic failure portrayed so colorfully in the James Bond film *The Man with the Golden Gun*.

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