About This Issue

Noble gases are uniquely stable and resistant to forming bonds. It is their stability and non-reactive nature which drives their practical uses. Our most common encounters with noble gases are probably with colorful helium-filled balloons or with the ever-present glow of cities from neon lights. As scientists, we have many other applications for noble gases, such as refrigerants for analytical equipment, inert atmospheres for storage of reaction-sensitive materials, ionizing gases in Geiger counters, and as gas- and excimer lasers.

Marissa Tremblay, Emily Cooperdock, and Peter Zeitler, guest editors of this issue of Elements, introduce us to another application of noble gases: thermochronology. In addition to editing the six thematic articles on the utility of noble gas thermochronology to fundamental geological questions (e.g., What are the rates of exhumation? How does a fault zone evolve?), these guest editors also wrote this issue’s Toolkit, which introduces the different methods used to extract, isolate, and measure the concentration of noble gases (and their isotopes) derived from natural materials. We hope you enjoy reading about this fascinating topic!

Contribute to Elements’ Feature Columns

Elements regularly publishes short, 1- to 2-page, feature columns in addition to its thematic content and society news items. The different types of feature columns are summarized below. You are welcome to submit your ideas for future feature columns to Jodi Rosso (jrosso.elements@gmail.com) or to the individuals mentioned below.

Triple Point raises issues of broad interest. This feature has explored different aspects of our science (e.g., teaching, publishing, historical aspects), our societies, funding, science policy, and political issues that impact us. Contact Jodi Rosso (jrosso.elements@gmail.com).

People in the News highlights the accomplishments of members of our communities, awards they have received, or exciting new projects in which they are engaged. We rely on members to bring to our attention the relevant people. Contact Jodi Rosso (jrosso.elements@gmail.com).

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has a lot going for it in terms of geography, but beyond the wrong name there’s another catch. Paliki is connected to the rest of Kefalonia by a thin strip of land, up to 180 m above sea-level. This at first insuperable problem has been explained by a group of geologists and archaeologists, known as the Odysseus Unbound Foundation, to be the result of a giant landslip filling a narrow seaway sometime between Odysseus’ homecoming and the present day\(^1\). Such landslides are not uncommon in tectonically active regions. And Kefalonia straddles a plate boundary.

Resolving the hypothesis that Odysseus returned to modern-day Paliki rather than modern-day Ithaca is crying out for a suitable chronometer. Dating faulted surfaces and landslide deposits is no easy matter. The Odysseus Unbound Foundation is no doubt exploring possible dating methods as I write. I rather hope they might read this issue of Elements to see just what insights thermochronology can offer. This is just one of a number of exciting interdisciplinary opportunities in this rapidly evolving field.

Jon Blundy, Principal Editor

\(^1\) Read more at www.geolsoc.org.uk/Geoscientist/Archive/May-2018/Ithaca-the-story-continues