

Pinpointing the origin of corpses, fingering fake cheese and more -- with 'isoscapes'

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An emerging field of science termed "isoscapes" is making it possible to pinpoint the geographical origins of illegal drugs, trafficked endangered animals, dismembered human body parts at crime scenes, and even pricey scotch whiskey and cheese, according to an article in the current edition of Chemical & Engineering News (C&EN), the American Chemical Society's weekly newsmagazine.

In the article, Sarah Everts, C&EN European correspondent, explains how isoscapes has even led to development of one of the newest and most unusual maps of the world. It is a map showing the isotope contours of the world, which scientists and others are using in tracking the geographical origins of objects, and even in research on global climate change. Isoscape is a combination of the words "isotope" and "landscapes," where [isotopes](#) are atoms of an element that differ slightly in the number of subatomic particles called neutrons that they possess.

Identification by isoscapes is based on the discovery that the tissue in a person's body and composition of drugs, whiskey, and other objects contains a distinctive isotope ratio "fingerprint." That fingerprint stems from the isotope ratios of food, water, and air where the person, whiskey and other objects originated. And those isotope ratios vary with geography that can be plotted on a map. The article explains how the isotope-based map can help convict murderers and authenticate the origins of fancy foods.

More information: "Isotopes Impart Geographical Clues":

pubs.acs.org/cen/science/89/8926sci1.html

Provided by American Chemical Society

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