Best of Last Week—syphilis already in the new world, a hypersonic heat shield, smallest knot ever created

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The structure of the trefoil metallaknot $[Au_6(L)_3(dppb)_3]$, Au_6 . Separate sections are **a** the structure (color code: Au, red; P, purple; O, mauve); **b** the core structures of enantiomers (H atoms and dppb phenyl groups omitted for clarity); **c** the ideal left- and right-handed trefoil knots. Credit: *Nature Communications* (2024). DOI: 10.1038/s41467-023-44302-y

It was a good week for the study of human history as a team of anthropologists affiliated with several institutions in the U.S., working with a colleague from the National Register of Peruvian Archaeologists, says that early hunter–gatherer cultures should be renamed to "gatherer–hunters," citing evidence that foraged plant material made up far more of the early Peruvian diet than meat. And another team of anthropologists, this one a small international group, found evidence that syphilis-like diseases were <u>already widespread in America</u> before the arrival of Columbus—a finding contrary to stories of Europeans bringing such diseases to the new world, resulting in epidemics.

In technology news, a team of engineers at McGill University found that lessons in heat recovery could be found in the design of Montreal's Royal Victoria Hospital. In the late 1800s, its designers had found a way to recover heat from exhausted air. And another team of engineers, this one from Technion Faculty of Materials Science and Engineering, developed a new green technology for producing hydrogen using renewable energy. Also, a team at the Guangzhou University School of Materials Science and Engineering, in China, made a breakthrough in the creation of <u>a hypersonic heat shield</u>. They say their porous ceramic creation could be used in aerospace and other applications. And a team at Amazon Web Services Artificial Intelligence Lab, working with colleagues from the University of California, found that the web is

littered with faulty machine translations.

In other news, a team led by a group at UCLA found evidence that infants born to COVID-infected mothers have triple the risk of developing respiratory distress. And a team of astronomers affiliated with several institutions in the U.S. and Canada discovered that the moon is shrinking, causing landslides and instability in the lunar south pole region. Also, a team of cardiologists in China found an association between consumption of dark chocolate and reductions in the risk of essential hypertension. And finally, a trio of chemists at the Chinese Academy of Sciences' Dalian Institute of Chemical Physics, working with a colleague from the University of Western Ontario, tied the smallest knot ever, using just 54 atoms.

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