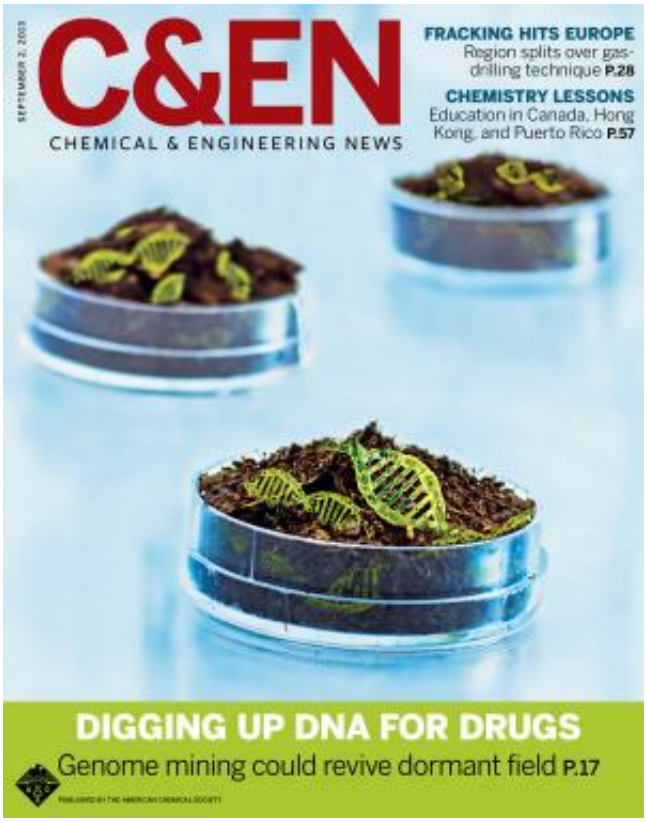
The next era in discovering drugs in nature's own medicine cabinet

September 4 2013



New technology for discovering antibiotics, anti-cancer drugs and other medicines inside soil microbes and other natural sources is reviving a treasure hunt that already has given humanity more than 50 percent of today's prescription drugs. This new era in "bioprospecting" is the topic

of the cover story in *Chemical & Engineering News*, the weekly newsmagazine of the American Chemical Society.

Lisa M. Jarvis, C&EN senior editor, points out that natural products are the source of about half of the modern drugs approved in the U.S. But the search for new products slowed as drug companies learned to make synthetic compounds at high speeds by the thousands. Now, the increasing availability and affordability of DNA sequencing is reviving activity in the field. It enables scientists to sample the DNA of thousands of microbes at once in search of gene clusters that could yield a new drug. Then computer models can figure out what molecules the genes encode, and organize the information in searchable databases.

The potential for discovering new medicines is high enough to attract the attention—and millions of dollars in investments—of some of the pharmaceutical industry's major players, including Sanofi and Novartis. The article notes that the latest research has significantly increased the number of microbial compounds being discovered and has opened a window on a vast new library of genes and gene clusters that code for previously undiscovered drugs. The flood of genetic discovery underpins expectations that potential new medicines based on natural products will be in clinical trials in humans within a few years.

More information: "Nature's Second Act" cen.acs.org/articles/91/i35/Na … ures-Second-Act.html

Provided by American Chemical Society