

GENETICS

Map of missing and extra DNA

A study has unearthed nearly 2 million instances of additional and missing stretches of DNA from the genomes of 79 people. The analysis of archived genome sequences revealed insertions and deletions (indels) ranging from 1 to 10,000 base pairs in length. Almost two-thirds have not been reported before.

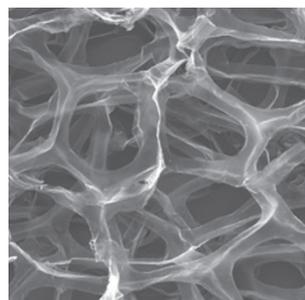
Researchers have struggled to identify such small, but important, variations in the human genome. More than 2,000 of the indels found by Scott Devine at the University of Maryland in Baltimore and his team were in the coding regions of known genes. The authors developed a chip-based assay for quick identification of about 10,000 of the smaller indels. Such chips could aid in interpreting the results of other genomic studies.

Genome Res. doi:10.1101/gr.115907.110 (2011)

MATERIALS SCIENCE

Fabricating a graphene foam

Graphene has remarkable electronic properties, but using these atom-thin sheets of carbon in devices remains challenging, and attempts to build graphene macrostructures have



yielded materials with low conductivity. Hui-Ming Cheng and his co-workers at the Chinese Academy of Sciences in Shenyang now report a three-dimensional, conductive all-graphene macrostructure they call a graphene foam.

The researchers deposited graphene on a template made from a porous nickel foam. After removing the nickel, they were left with a structure made of a three-dimensional network of interconnected graphene channels (micrograph **pictured**). Combined with a silicon-based polymeric matrix, the foam forms a

composite that retains the high conductivity and flexibility of the two components, making this a promising material for flexible and large-scale electronic applications.

Nature Mater. doi:10.1038/nmat3001 (2011)

ECOLOGY

Animals go 'blue' with temperature

An analysis of more than three decades' worth of field data reveals that the rate at which environmental temperatures in a given area oscillate is

preferred branches with more twigs. During the day, caterpillars opted for twig density over leaf availability; however, at night, when predators are no longer on the prowl, the insects were found on branches with abundant leaves to eat.

High twig density further protects caterpillars by dashing predators' hopes. Repeated exposure to branches with many twigs and no caterpillars made chicks less motivated to hunt for prey than birds less frequently exposed to this situation.

Proc. Natl Acad. Sci. USA doi:10.1073/pnas.1014629108 (2011)

Population biologists use colours to describe these changes. Species whose numbers oscillate mainly over the long term are called red, whereas those shifting over shorter timescales are termed blue. Bernardo García-Carreras and Daniel Reuman at Imperial College London analysed data on 147 species and records from weather stations around the world. They show that environments seem to tinge local populations the same colour. Furthermore,



ECOLOGY

Hidden in plain sight

Some species elude predators by masquerading as common, inedible objects. But far from being a passive disguise, such camouflage also involves specific changes in prey and predator behaviour, say John Skelhorn at the University of Exeter, UK, and his colleagues.

In lab experiments, the researchers exposed twig-like *Selenia dentaria* caterpillars (**pictured**) sitting among real twigs to domestic chicks trained to attack them. Not only did the chicks take longer to spot their prey when twig density was higher, but caterpillars also