Red seaweed detoxifies TNT lurking in ocean

Researchers in Oregon and Massachusetts have found that seaweed can detoxify a variety of marine pollutants. The plants can act on TNT, found in munitions; polycyclic aromatic hydrocarbons, which are often associated with motorcrafts and formed during the incomplete combustion of oil; gas; garbage; and other organic substances.

The findings may be important for seafood safety because some of the marine organisms most at risk from these toxins are invertebrates such as clams, shrimp, oysters or crab.

The studies, conducted by scientists from Oregon State University and Northeastern University, were presented Friday in Washington, D.C., at the annual meeting of the American Association for the Advancement of Science.

"We found that certain red seaweeds had an intrinsic ability to detoxify TNT that was five to 10 times faster than any known terrestrial plant," said Greg Rorrer, an OSU professor of chemical engineering.

The research found that seaweeds processed toxins to a less harmful form. The studies are of interest in the case of TNT because of unexploded bombs found in the oceans. There is a concern the ordnance could corrode and be toxic to corals, fisheries and plant life.

Climate change plotted, threatens Yakima crops

Agriculture losses from climate change in Washington's Yakima Valley could be huge by the middle of this century, according to a decade-long study at the Pacific Northwest National Laboratory in Richland, Wash. Michael J. Scott, a natural resources economist, and his colleagues at the lab and Washington State University extrapolated the effects of warming to the region by applying data from bad droughts going back 80 years. The computer projections indicate as much as a 70 percent reduction in snowpack for the West Coast, including the Cascades. Losses to Yakima Valley agriculture in the next several decades would be between $92 million annually if temperatures increase 3.5 degrees Fahrenheit and $163 million a year if temperatures rise 7 degrees -- nearly a quarter of total current crop value, Scott said.

Those losses would result from a projected shortage of irrigation water, which comes from reservoirs and runoff tied to the amount of winter snowpack in the Cascades.

Scott presented the findings at a meeting of the American Association for the Advancement of Science.

Unique pigment found in red parrot feathers

A study has revealed the novel chemistry behind parrots' vibrant red feathers.

Kevin McGraw, an assistant professor at Arizona State University, and Mary Nogare, a parrot fancier from Snoqualmie, Wash., used a technique called high-performance liquid chromatography to survey the pigments in red feathers from 44 parrot species.

They found a suite of five molecules, called polyenal lipochromes, that color parrot plumage red in all the species. "It is a unique pigment found nowhere
else in the world," McGraw said.

The study details are in the Feb. 16 issue of the journal Biology Letters.

**Scientists tease out cockroach sex secret**

Scientists have discovered the secret behind the chemical mating signals of cockroaches. When female German cockroaches are ready to mate, they raise their wings, lower their abdomen, stilt their legs and send sex pheromones to advertise their availability.

Researchers at North Carolina State University, Cornell University and the State University of New York have characterized the pheromone -- gentisyl quinone isovalerate, which they call blattellaquinone -- for the first time. They also created a synthetic version of the pheromone and found it is just as effective in getting male cockroaches to "come hither" as the natural chemical.

"The German cockroach is an important pest that is associated with allergic disease and asthma in children and the elderly, especially in the inner city," said entomologist Coby Schal of North Carolina State. "The pheromone could offer novel approaches to controlling cockroaches."

The findings are in the current issue of the journal Science. -- Compiled by Richard L. Hill