ously thought.

The spider weaves a silk bubble, known as a diving bell, on underwater vegetation. It uses this bell to extract oxygen from water, said the study's first author, Roger Seymour, a biologist at the University of Adelaide in Australia.

The bell acts as a gill, and pulls in dissolved oxygen from fresh water. Although this was previously known, Dr. Seymour and his colleague Stefan K. Hetz of Humboldt University in Berlin, used a device to measure exact changes in the bell's oxygen levels for the first time.

Even in warm, stagnant water, the bell extracts oxygen that the spiders can rely on, they found.

"The value of staying underwater is that you don't scare the prey away," Dr. Seymour said. "And if you go to the surface often you might alert a bird."

The water spider weaves a silk bubble, known as a diving bell.

the bell, and hatched spiders build bells of their own.

The researchers found that the bell shrinks as nitrogen from the bell diffuses into the water over time. Eventually, the spider must surface to create a replenishing bubble that resupplies the bell with oxygen.

termined that though the species are identical in certain gene regions, they have two distinct genetic histories.

Scientists Create Laser With Mirrors and a Cell

Physicists from Harvard Medical School have created the world's first living laser, using a cell.

Writing in the journal Nature Photonics, Malte Gather and Seok-Hyun Andy Yun report that they created the laser using fluorescent proteins. The glowing substance is produced by marine animals like the jellyfish Aequorea victoria, which uses it to generate a bright green glow.

"We are familiar with lasers like laser pointers and bar-code read-

Farmers independently bred each species, said an author of the study, Chung-I Wu, an evolutionary geneticist at the Beijing Institute of Genomics in China and the University of Chicago.

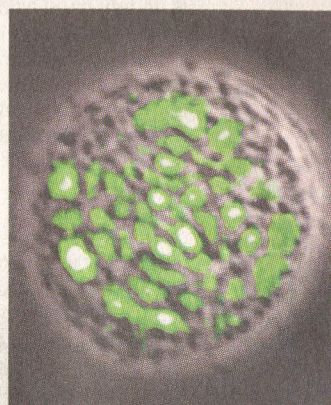Still, the similarities indicate that the two species borrowed de-

MALTE GATHE

A cell, shown in black and white, emits green light that, with the help of mirrors, can act as a laser.

ers, and so far these lasers have all been of man-made material," said Dr. Yun.

Dr. Gather and Dr. Yun genetically programmed cells to produce green fluorescent proteins. They then placed such a cell in a cavity with two tiny, parallel mirrors spaced seven ten-thousandths of an inch apart, large enough to hold exactly one cell. Using a microscope, they exposed the cell to pulses of blue light.

When exposed to the pulses, the fluorescent proteins in the cells started to emit green fluorescent light. The light bounced back and forth between the mirrors, ampli-

"Intellectual property infringement has occurred since the beginning of civilization. That's why we have this rice to eat today."

fying to generate a bright, unidirectional laser light.

Lasers, until now thought of only as inanimate objects, are useful in medicine, telecommunication and data storage. The new finding may one day lead to more efficient and reliable laser technology using biological materials.

The cells used in the study were not damaged in the lasing action and, if damaged, have the potential to regenerate themselves, Dr. Gather said.

"Lasers have a tendency to burn out," he said. "Normally there is very little you can do apart from replacing the whole device."

The New York Times

Syrian Unrest Stirs New Fear Of a Deeper Sectarian Divide

Sunni Majority and President on Opposite Sides

By ANTHONY SHADID

BEIRUT, Lebanon — The Syrian government's retaking of a town this weekend that had tee-tered beyond its control is sharp...

"armed terrorist gangs," sits in a landscape as complicated as anywhere in Syria. It is a Sunni town with an Alawite town less than a...

7 in G.O.P. Square Off, 7 Months From First Vote