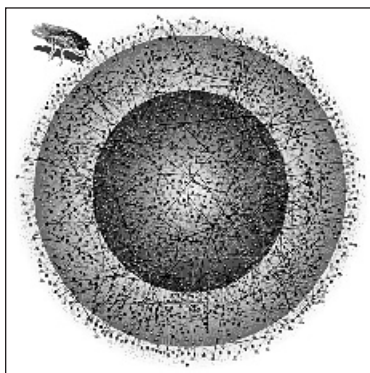




SCIENCE BRIEFS



Fruit fly proteome

Hundreds of organisms have had their genes mapped, and now the fruit fly has become the first organism to have its proteins mapped. Scientists have constructed a map showing 20,405 interactions between 7,048 proteins. This task has been hailed as essential for the understanding of life itself, as our structure and functional processes are all dependent on proteins. When making the map, the scientists cloned all the fly's genes and took a molecular "snapshot" of what was occurring in the fruit fly. Future studies will focus on similar protein-protein interactions in humans.

—WENDY GU

Source: *BBC NEWS*

Monkey brain lab in the works

Cambridge University has been given the go-ahead to build a controversial primate research lab. The facility will conduct experiments on the brains of living marmosets and macaques in order to advance our understanding of Parkinson's and Alzheimer's diseases. Animal rights groups argue that the experiments will not only be cruel, but pointless as the primate brain differs from ours. Scientists say that monkey brains provide the best model possible to study human disease. The experiments are likely to push the borders of both neuroscience and ethics. In April of 2001 a scientist in Cleveland Ohio made headlines when he attached the severed head of one monkey onto the body of another.

—ZOE CORMIER

Source: *New Scientist*

Japanese create walking chair

Researchers from Waseda University in Japan have created a two-legged, walking robot capable of carrying a person. Although it can only raise its feet a few millimeters, and can at present only carry somebody weighing no more than 130 lbs, the inventors hope to create another model that can carry people in wheelchairs up stairs. Other Japanese robotics companies have created similar machines, notably a "snake-like" model that uses software to navigate, a "maggot-like" creation that uses magnetism instead, and a ball-shaped robot that leaps and bounces over rough terrain.

—ZC

Source: *New Scientist*

Research revelry at the ROM

by PATTY BAKALOPOULOS

From world record setting fish to singing mice, this year's 25th Annual Colloquium at the ROM was a hit. On Wednesday, November 19, curators, educators, and graduate students from the ROM and U of T presented highlights of their recent discoveries and ongoing research.

The presentations were only "a tip of the iceberg taste of the kind of research done at the museum," says Dr. Mark Engstrom, Vice-President of Collections and Research.

The most anticipated presentation of the day was the Vaughan Lecture on Shifting Paradigms by Rick Winterbottom. Winterbottom traveled to tropical locations such as Fiji and Bora Bora to uncover the evolutionary relationships of coral-reef fishes of the Indo-Pacific region. He collected fish, identified them, and attempted to classify them. He found 80 species of *Trimma* fish, of which only half were already known and named.

Winterbottom and his crew had the honour of contributing the *Trimma Nanus* to the Guinness Book of World Records. "It had the shortest vertebrae ever found," says Winterbottom. "From tip of the snout to the base of the fin, it is 8 mm long. The head contains as many as 98 bones out of [a total] 170. 63,000 of this tiny fish would be the length of the CN Tower. From a McDonald's consumer perspective, it would take 300,604 of them to make a ¼-pounder."

Winterbottom's discoveries from his field work and research have

"culminated in a new theory," he explains, "to help explain the historical reasons behind the incredible biodiversity of the 'Indonesian Triangle' [Sumatra/Philippines/New Guinea], which in turn has implications for the rationale behind the establishment of marine parks and conservation areas in the region."

Jacqueline Miller's presentation of singing mice won over the animal lovers in the audience. After some technical difficulties, the audience was able to hear the mice singing their high-pitched songs of courtship and identification.

"The species, age, sex, identify, and motivation of the individual sending the message can be communicated between mice. The length of the call and the length of the intervals between the call was studied. Then the wavelengths of one species were compared to other species," says Miller.

One of the species studied was the Grasshopper Mouse. This mouse lives in the desert, and hunts insects. "It is notorious for taking out Scorpions," exclaims Miller. "Its call has between 1 and 200 notes."

The vocal behavior of mice, the study suggests, may provide better understanding of how complex vocal communication evolved in mammals.

The remaining presentations included how the T-Rex grew up, the evolutionary relationship of frogs, and the mystery of an unidentified Roman mummy found in a 3,000 year-old coffin.



ANTHONY HEMPELL

I say tomato, you say tomacco

by ZOE CORMIER
VARSITY STAFF

Remember that *Simpsons* episode where Homer creates a tomacco plant? It's actually been done—a scientist from Ohio has managed to combine a tomato plant and a tobacco plant.

In the classic and often replayed episode, Homer whisks the entire family away from Springfield so he can escape a duel with a southern gent. They decide to try and live off the land at Homer's childhood farm. After no success growing crops in the conventional way, Homer laces the barren fields with plutonium to "give Mother Nature a little boost." The result is a field of tomatoes cross-bred with tobacco plants. Upon biting into the fruit, they discover that the tomatoes are filled with tobacco. The townspeople, farm animals and Bart become addicted to the "tomaccos."

Rob Baur, a 53 year-old operations analyst for an Oregon wastewater treatment plant, was inspired by the episode and decided to try and create the world's



ANTHONY HEMPELL

It tastes horrible, but it's smooth and mild.

first tomacco plant. He first cut the tops off of a tobacco and a tomato plant and switched them onto the opposite stems—the plants simply died. He then tried hollowing a portion of each plant out and grafting them together. This time it worked.

He now has a plant growing on his kitchen table with the roots of a tobacco plant and one tomato branch. The plant has sprouted one solitary fruit. The roots are pumping tobacco juices, so to speak, into the tomato branch.

Tests have shown that the leaves do indeed contain nicotine. Now the fruit is being tested for the addictive chemical.

Baur, despite being pleased by his sudden notoriety, is now feeling anxious about the plant. If the fruit contains nicotine as well, the levels might be high enough to kill a human. Orally ingesting a mere 150 milligrams of nicotine can be fatal. He was thinking of selling the plant on E-bay (Homer was offered 150 million for his plant by a tobacco company), but Baur is afraid that the buyer might leave the plant on an office desk or around their house where some unsuspecting person might eat the fruit. His wife allegedly yelled at him for leaving the plant on their kitchen counter, as it looks just like any other tomato plant.

No tobacco companies have contacted Baur yet. Many have suggested that he now try creating a tomannibis, or maritomato plant and see if that turns a profit, but he says he does not plan on it. He may however try creating another Simpson's delight—the flaming Moe.



Truth is Stranger Than Fiction

The fact that platypuses lay eggs isn't the only strange thing about them. They have working mammary glands in both males and females. They have only a single opening in both sexes for the passage of urine, feces and sexual fluids. And when young, platypuses have spurs on their hind legs with venom so strong that it can kill a dog.