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Body music

NEW WORLDS
Judy Siegel-Itzkovich

A NEW musical instrument can tap human muscles to create symphonies of sounds. Called the Biomuse, it taps the tiny electrical currents each muscle movement generates with electrodes attached to the skin's surface to create a variety of sounds, according to the American Institute of Physics.

"When a muscle moves, be it a blinking eyelid or a tightened fist, a whole population of fibres contributes to that motion," says one of the developers, Dr. Hugh Lusted, a neurophysiologist at Stanford University School of Medicine in California.

The muscle's electrical signals are fed into a standard music synthesizer through a computer that has a specially designed signal processor chip.

Lusted has used electrical signals from the heart and the brain for the instrument's raw musical material. The inventors foresee the instrument as something the disabled, such as paralysis victims, could use to make music with any available nerve or muscle activity. In addition, they said, instrumentalists could use their own muscle movements, heartbeat, and brain waves to create new forms of music.

IBM COMPUTER systems are helping the Supersol chain offer the first countrywide order-groceries-by-phone service, with over 1,600 different items to choose from the catalogue. The service is already available in Ra'anana, Herzliya, Savyon, Kiron and other posh towns, and if successful, will be offered at every Supersol branch.

The customer calls the Supersol order centre, giving the code to the operator, who sees on her screen a description of the item, the price and additional information. After completing the shopping list, the operator takes the address and credit-card number and workers are sent to collect and prepare the items. The IBM/2 system, developed at Supersol, also lets the supermarket chain do market research on what types of items are popular in different areas.

INSECT PESTS could be quickly and safely killed by enticing them to eat a gelatinous meal containing parasites, according to a Temple University biologist. Such biological pesticides, says Prof. Frank Chang, can't harm plants, animals or the environment, but kill beetles, termites, cockroaches, corn rootworms, tobacco worms and other insects within days.

"Biogel" is a soft material that contains an insect attractant, a feeding stimulant, food and some natural enemies of the insect, called nematodes.

"The nematodes can be rendered harmless by lack of moisture, ultraviolet light, and heat. It is most likely that many nematodes die before killing any insects. At the same time, insects are able somehow to detect the nematodes, and the pests will often avoid these supersaturated areas."

By contrast, "biogel" placed in small containers attracts insects while preventing detection of the nematodes.

A LESS expensive method of filtering surface water has been developed in Jerusalem. Prof. Avner Adin of the environmental sciences division of the Hebrew University's graduate school of applied science and technology says that specially selected and crushed basalt and tuff – two types of plentiful volcanic rock – is more effective and efficient than using coal aggregates, commonly used in public water-filtration systems. The rock is about 80 per cent cheaper than coal.

The volcanic rock is ground to specific sizes, and polyelectrolytes are added continuously to incoming water. This increases the binding to the rock of the polluting particles in the water, and creates an inexpensive, "natural" filter. It can be cleaned by a mixture of air and water.

The rock will be used experimentally by Israel's Mekorot water company.

PHYSICIANS WHO were born before the computer revolution were recently invited to take a course introducing them to the personal computer at the Hadassah Community College in Jerusalem. Sixty-four doctors studied computer languages, word processing and medical data-base information; more courses will open soon.

THE MOTOROLA 900 communications device installed in vehicles is no longer just a two-way walkie-talkie radio. It now allows subscribers to be hooked up to any phone number in the country between 5 p.m. and 7 a.m., and to leave messages that will be transmitted by Motorola staffers.

From early evening until early next morning, subscribers can call Motorola and ask to make calls to any regular telephone.

TINY TRANSMITTERS tracked by satellites and attached to swans may unravel the mystery of where they go on their migratory flights. The Wild Bird Society of Japan and the telecommunications utility Nippon Telegraph and Telephone Corp. recently announced that a transmitter weighing 40 grams will be attached to swans. Signals from the birds will be beamed to a U.S.-French environmental satellite called Argos to tell scientists where the swans are.

The first satellites will be hooked up this spring to four swans in Hokkaido, the northernmost Japanese island. The satellites will tell scientists the flight path swans use to reach their Arctic summer homes. The transmitters are to be attached with rubber bands that are expected to deteriorate and eventually free the birds of the extra weight.

Larger transmitters have been used in recent years to track migrations of dolphins and seals, but they were too heavy for the five-kilo swans to carry in flight.

AN ISRAELI-developed proofreading computer programme is being offered by the Idan company. Called *magilla* ("proofreader"), the $99 software programme is claimed to the the first of its kind in Hebrew to correct typographical errors. It is compatible with all major word-processing programmes, and works on IBM computers and compatibles, and Apple Macintoshes.

The programme works by comparing words in its electronic dictionary with words written on the screen. It also claims to have terminology in specialized fields including insurance, law, accounting and taxes. New words can be added as well.

The science and technology page is edited by Judy Siegel-Itzkovich.