Telidon: Steacie signs on for the medium of future

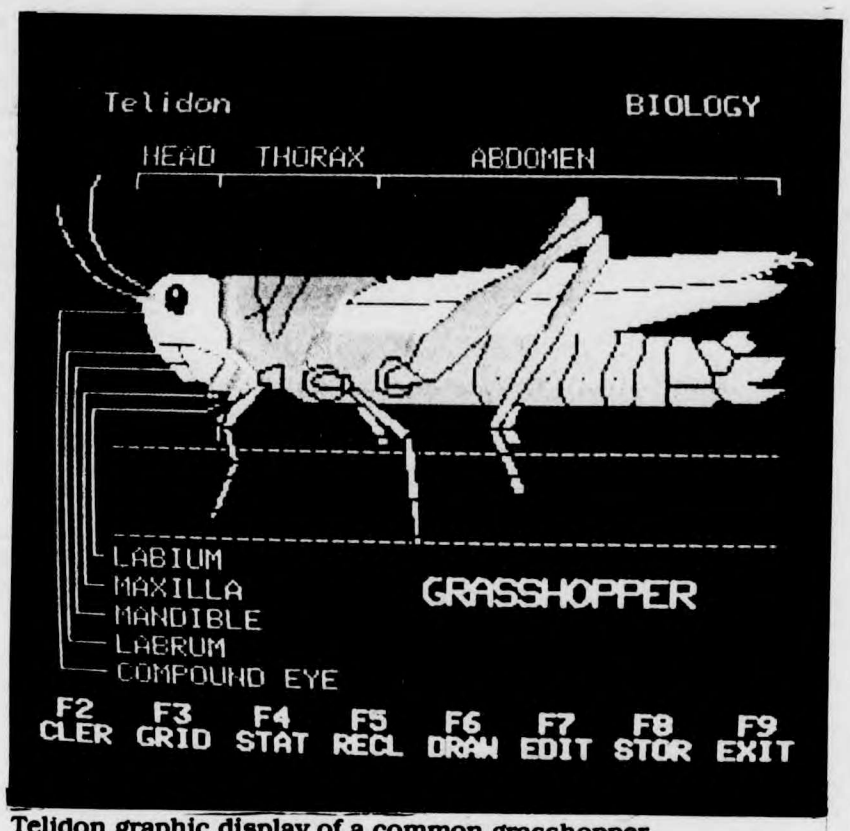
Jessie-May Rowntree

In 1870, it was the telephone; in 1930, the television, and now... Telidon. With a slight stretch of your imagination these combined communicators will summon your groceries, arrange your finances, conjure your specified vacation plans and "gently" wake you up in the morning.

Telidon, designed by the Canadian Department of Communications, is an easy-to-use graphics communications system which features the transmission of text and high quality images directly to the television set. The viewer will have immediate access to a mass of information stored in computers by businesses, schools, governments, libraries, universities and anywhere else computer memory is accessible.

The Telidon system has two basic forms: videotex and teletex. Videotex is an interactive system in which the viewer uses a telephone line to dial up information for display on a modified television screen. Using a calculator-type "key pad" or a "keyboard" similar to a typewriter, the viewer can retrieve information from remote computer data bases.

Telidon's teletext is the the broadcast mode in which viewers receive text and graphics on an ordinary television receiver using a Telidon decoder. The decoder enables the TV set to receive hundreds of pages of information broadcast in the unused lines of regular television signals. Information of general interest is updated and rebroadcast every few minutes, while special interest programs



Telidon graphic display of a common grasshopper.

Information update

can be scheduled to arrive at specific periods. Again, using the keypad, viewers can choose the features they wish to display on the TV screen.

Here at York, the Department of Academic Computing is participating in the TVOntario Telidon field trial. The purpose of the York project is to evaluate the Telidon system as a medium for disseminating information on courses offered at York.

"To make it interesting, the Telidon system must provide useful information to the viewer," explains David Ward of the Department of Academic Computing. "We are concentrating our efforts on preparing written information rather than becoming involved in time-consuming graphics preparation."

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Laser research conducted at York

Anderson Lookin

In the public's mind, any devices, from the pocket flashlight to the science-fiction cannons aboard Hollywood space ships, can be classified as a laser. All have the ability to produce visible radiation. The laser is now wide used in industry as a machine tool, drill presses, specialized lathes and even as a material welder.

Dr. W. Duley and his graduate students, in Physics Department of York are attempting to find more applications for the laser in collaboration with industry. According to Dr. Duley, the carbon dioxide laser is the most commonly used industrial laser because it is one of the most powerful. These lasers are available with powers up to 5,000 watts, although most industrial laser machining operations do not normally require lasers stronger than 1,000 watts. These are the ones most commonly studied for the material processing industry.

One of York's first, and oneof the first high power lasers in Canada, was built by Dr. Neil Gonsalves in 1969, when he was a graduate student in Physics under the supervision of Dr. Duley. The laser is a 300 watt carbon dioxide, capable of producing an infrared beam with a diameter of about 1 centimeter. When this beam is focussed on a spot, temperatures in excess of 1,000° C. can be produced. However, when this instrument was built, laser technology was not as advanced as it is today. Gonsalves' laser has a 7.57 m. glass tube where the excitation of the carbon dioxide takes place. Its obsolescence is obvious when one witnesses the evolution of devices that are one-quarter of the length, yet capable of generating equal or greater power. Nevertheless, it was quite a novelty in its time, and studies performed with this laser provided much of the basic information for today's lasers.

Dr. Walt Duley, working with a powerful carbon dioxide laser.

The basic mechanics behind the laser are surprisingly simple. The gases carbon dioxide, nitrogen and helium are pumped into the tube, then the electric current is switched on. The flow of electrons causes the carbon dioxide molecules to vibrate and release energy in the form of an infrared beam (heat energy). The vibrations are much too fast for the human eye to detect. This beam is then focussed through the lens onto the desired surface. To change

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Scientific creationism: shaking Darwin down

"Scientific Creationism" was knocked about by several speakers at the recent Vanier-Winters Science Symposium. "In the Beginning... A Darwin Centenary Symposium" on March 10-11.

Dr. Michael Ruse of the Department of Philosophy at University of Guelph opened with a historical sketch of Charles Darwin (1809-82), the person credited with discovering the process of evolution by natural selection. The symposium was held to honour the centennial of his death, occuring this April.

Responding to a question from the audience, Ruse spoke about his experience as a witness to the creationism trial in Little Rock, Arkansas this past winter. The state legislature of Arkansas had passed a bill which said equal time should be devoted to teaching ideas of "scientific creationism" along with modern evolutionary theories in schools.

Creation challenged

Scientific creationism seeks to find scientific evidence for the act of creation as described in Genesis, i.e. sudden creation of the universe from nothing, teh age the the earth being much shorter than most scientists believe, various organisms are a direct result of divine creation and not subject to change other than extinction, and the occurance of a world-wide flood.

The American Civil Liberties Union challenged the bill in court as being unconstitutional on three grounds:

- it violated the religious establishment of the First Amendment (separation of church and state;
- it abridged the academic freedom of both teachers and students; and,
- it was impermissibly vague.

A witness in favour of the bill, Norman Geisler, asserted that there is nothing necessarily religious about God and that unidentified flying objects (UFO-unidentified flying objects (UFO's) are "satanic manifestations for the purposes of deception." The state lost and is not planning to appeal.

The afternoon speakers discussed sociobiology, a discipline that seeks to explain the existence of traits like altruismm, which at first glance seems to be an evolutionary paradox (i.e., a person who risks his or her life to save someone else decreases his or her chance of having more children). If there is a genetic basis for such traits, it should be selected against, and thus disappear. The answer seems to be that such activity indirectly increases the chances of the person's genes being propagated, since the individual saved is usually a relative carrying a very similar genetic make-up.

Genetic altruism

Dr. Douglas Boucher, Department of Biology, McGill, documented a number of cases where sociobiology-like arguments have been used to support sexist, racist and politically extreme viewpoints. He urged vigilence on the part of scientists to see that incorrect scientific arguments are not used to give credibility to such viewpoints.

The last speaker, Professor Peter Harries-Jones, Department of Anthropology, York, discussed how the co-evolution between two species, or between human biology and evolution, can be described from a systems analysis (cybernetic) approach. It seemed that many biologists were less than enthusiastic about this approach, as it is not really mechanistic, it is hard to see what predictive value it has (or, in other words, it might look nice, but what's the use of it?)

The symposium was well attended (although not by York students; a lot of high school students came as groups). Surprisingly, this year, no creationists came to argue with the speakers.

One science professor thought this might be because the creationists find it too difficult to get support for their ideas in such a pro-science setting.

Science Milestones

March 1, 1896: Antoine Henri Becquerel discovered radioactivity, that is, that some substances emit particles and energy spontaneously and continuously. This was the first clear indication that atoms have internal structure.

March 13, 1758: Halley's comet came to its perihelion, that is, the point of its orbit closest to the sun, as Halley had predicted in 1682. This proved definitely that comets, like planets, had solar orbits and were subject to the same natural laws.

March 13, 1855: Percival Lowell was born. He predicted the existence of an undiscovered planet because of discrepancies in the motion of Uranus. He searched for but failed to find the planet which was discovered 14 years after his death and named Pluto, the first two letters PL for Percy Lowell.

March 17, 1787: Albert Einstein was born. He formulated relativity theory and explained Brownian motion, the jiggling motion of small particles suspended in liquids, and the photoelectric effect.

March 17, 1787: Georg Ohm was born. Experimentally devised the relationship between current, electric potential and resistence that became known to every high school student as *Ohm's Law*.

March 17, 1882: Robert Koch announced the discovery of the tuberculosis bacillus.

March 22, 1868: Robert Milliken was born. He performed many elegant experiments, the most famous of which was to determine the magnitude of the electric charge of a single electron. In this experiment he also determined that electric charge existed only as whole multiples of the unit electric charge, thus confirming the particle nature of electricity.

March 27, 1845: Wilhelm von Roentgen was born. He discovered X-rays and determined their properties.