

### Engineers help develop new approach to brain surgery

A new computer program which can assist a neurosurgeon in the operating room has been developed by engineering scientists at the University of Toronto. It is called a Computerized Data Processing System for Stereotactic Neurosurgery. Stereotactic neurosurgery involves the use of a mechanically-directed probe introduced into the brain through a small hole in the skull.

The idea was conceived by Dr. Ian Rowe, associate professor in the department of electrical engineering and developed in co-operation with Toronto General Hospital and the Computer Centre at the university.

Dr. R. Tasker, a neurosurgeon at Toronto General Hospital, uses this technique for the control of tremors and for the relief of pain. The problem, however, has been that the target site of the probe cannot be seen by the surgeon.

Under local anaesthesia, the probe is advanced by small increments towards the tentative site. The surgeon determines its position in the brain by passing weak electrical pulses which elicit a response in the patient's body. The site and nature of the response is related to the location of the probe.

Since the probe may pass through 60 stimulation sites with up to five responses at each, the surgeon has to interpret and act upon a mass of data. Professor Rowe determined that this information could be taken from the operating room through a portable computer terminal.

The computer programs for this project were written by a fourth year engineering science student, Peter Hawrylyshyn, whose thesis was judged

the best of his year in engineering science.

The data is transformed into a graphical output which shows the section of the brain and the trajectories of the stimulated responses evoked in the various body areas.

Results are printed out in less than ten seconds. From the figurine map the neurosurgeon can choose the final site for making a lesion so that the operation can be brought to a quick but satisfactory conclusion.

The link from the portable computer terminal to the main computer is by telephone, which opens an eventual possibility that a surgeon working, for example in Texas, could use the program in Toronto during his operation.

This summer, Dr. Rowe and Dr. Tasker plan to study all previous records of stereotactic neurosurgical operations with the computer program. They hope to create a data bank which will provide information that will assist future operations.

### Violin offered as scholarship

The privilege of using a fine eighteenth century violin is the newest form of scholarship at the University of Windsor, Ontario. The instrument has been loaned to the Music Department by Mary Helen Richards, the California music educator responsible for the university's highly successful "Education through Music" courses in Chatham and Windsor, on the understanding that it would be made available to an outstanding student in the Bachelor of Music program.

"The violin will make a fine scholarship for someone," said Dr. Paul McIntyre, Music Department head. "The instrument has a very lovely and sweet sound, and this is of great importance in violin study. If the student hears a satisfying sound next to his own ear, he is encouraged to improve that sound still further. The Richards violin is definitely of concert quality and we are most fortunate to have access to it."

The violin probably came from the Innsbruck district of what is now Austria. Mary Helen Richards acquired the instrument in 1967 from the widow of a well-known Hungarian concert violinist who had died five years before.

### UBC free dental program

Children and adolescents in the Vancouver area chosen by public dental health officials will be given dental care free of charge at the University of British Columbia's (UBC) Faculty of Dentistry this summer.

Provincial Health Minister Dennis Cocke has agreed to a proposal from Dean S. Wah Leung of UBC's Faculty of Dentistry and a grant of \$104,608 to finance the project will be made through Mr. Cocke's department.

Initial plans are for UBC to provide preventive and basic restorative dentistry to about 2,500 children and adolescents. The summer clinic, which began in mid-May will continue for 14 weeks.

The patients will be treated by about 30 student dentists entering the fourth and final year of the UBC dentistry program. The fourth-year students will be assisted by about ten dental students entering their third year, and about five students entering the second and final year of the Faculty's dental hygiene program.

The dental students will be under the supervision of two full-time graduate dentists and one dental hygienist.

### Canadian oil exports in 1973

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under licence to the United States, Mexico and France.

Exports of these oils from Canada are subject to the authorization of the National Energy Board. A licence to export is issued only when the quantity of the export is surplus to foreseeable Canadian requirements and the export price is just and reasonable in relation to the Canadian public interest.

The decision to bring under licence the export of oil and petroleum products arose from the rapid increase in the demand for Canadian oil in the export market and the consequent need to introduce measures that would ensure adequate supplies for domestic requirements. Measures taken under the licencing system ensure continuous monitoring and control of the supply of oil and petroleum products in Canada in relation to domestic requirements and interests, and allowable surplus quantities for export.

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