

of the time, Dr. James Robb, William Brydone-Jack and Marshall d'Avray declared himself to be neutral to the proposition that the college should change. Professors Robb and Brydone-Jack attempted to substantiate the then-current curriculum while making suggestions for incorporating the practical elements. However, in their collective responses to the College Council early in 1853, there is no real indication of the sort of ambitious drive which might have been required to accomplish Sir Edmund's suggestions.

It was left for Dr. Robb to point out a mechanism for entertaining a Civil Engineering program within the structure as it then existed. In a letter to the College Council dated February 9, 1853, he wrote, "I would further remark, that, by an order in Council passed many years ago - which has never been repealed, so far as I know, although it has not been embodied in the revised statutes; non-matriculated Students were invited to attend my courses, upon payment of the sum of one pound per Term; a certain number of persons have availed themselves of the opportunity thus afforded to them, and certificates of competency have been uniformly granted as required."

"A course of instruction in Civil Engineering will be given at King's College by Mr. McMahon Cregan, who has been appointed to that duty by His Excellency the Visitor, and will commence on the 15th of February next, and continue until the end of April. It will be open to students of the College on payment of a fee of Ten Shillings, and to all others on payment of a fee of Two Pounds, for the course.

Persons desirous of joining the class are requested to communicate with the Registrar. The course will embrace, with other subjects, the following syllabus:

An explanation of the construction and uses of Logarithms, Sines, Tangents etc; Trigonometrical Formulae; Resolutions of Plane Triangles; methods of surveying with the Theodolite, Circumferentor, etc; Construction, use and adjustment of the instruments used by Engineers, both for field and office work; Levelling; method of determining best route for Railway, etc.; computation of the quantities of land, earthwork, etc., required for the execution of the works; estimation of comparative labor by units of work; Horsepower of Machinery, etc.; method of "setting out" railway curves and side widths; calculation of gradients and theory of inclined planes; super-elevation of rail; composition and resolution of forces; calculation of strains and pressures; strength of materials theory and practice of timber and iron framing; viaducts, bridges etc.

Three lectures a week will be given in the College, and instruction in the field will also be given once a week, or as often as may be expedient.

After the initial success of the course, the first of its kind to be offered by a University in British North America, events conspired to mitigate against the impetus towards establishment of a restructured college.

The Commission reported back in December 1854 to the New Lieutenant-Governor J.E.H. Manners-Sutton. The Commission's report was a very progressive document, recommending, in addition to the classical curriculum, special undergraduate courses of study in Civil Engineering

and Surveying, Agriculture and Commerce and Navigation. Each of the three courses was to be of two years duration and heading to a diploma after satisfactory completion.

Little was done towards accomplishment of these worthy objectives. It wasn't until the successor to Dr. Brydone-Jack took over as president, that the next significant achievement in the implementation of an engineering curriculum occurred, that being the establishment of a chair of Civil Engineering on August 19, 1889. Also established at the same session was a chair of Experimental Science which ultimately became the genesis of the Electrical Engineering discipline.

By R.N. SCOTT

One of the products of the Faculty of Engineering at UNB is the Bio-Engineering Institute. Established in 1965 to facilitate work which already had achieved international recognition, the Institute has maintained a position of leadership in research concerning electronic control of artificial arms. The Institute's emphasis has been on systems for patients who have only very few muscle remnants available as myoelectric control sites. These patients include particularly, certain congenital amputees, as well as patients who have had an entire arm and shoulder amputated.

"UNB 3-State Myoelectric Controls" developed in the Institute were first evaluated by patients in 1965, and since then clinical evaluation of successive generations of these controls has been continuous. A system produced initially in 1976 has proven sufficiently useful that it is being prescribed routinely by the amputee clinic at the Ontario Crippled Children's Centre, Toronto. This system is being used by some two dozen patients in Canada and the USA.

1974 saw the first clinical evaluation of a "feedback" system designed in the Institute to replace the lost sense of touch for the arm amputee. This system has undergone several major revisions, and the latest version was fitted successfully to two Ontario patients in December 1978.

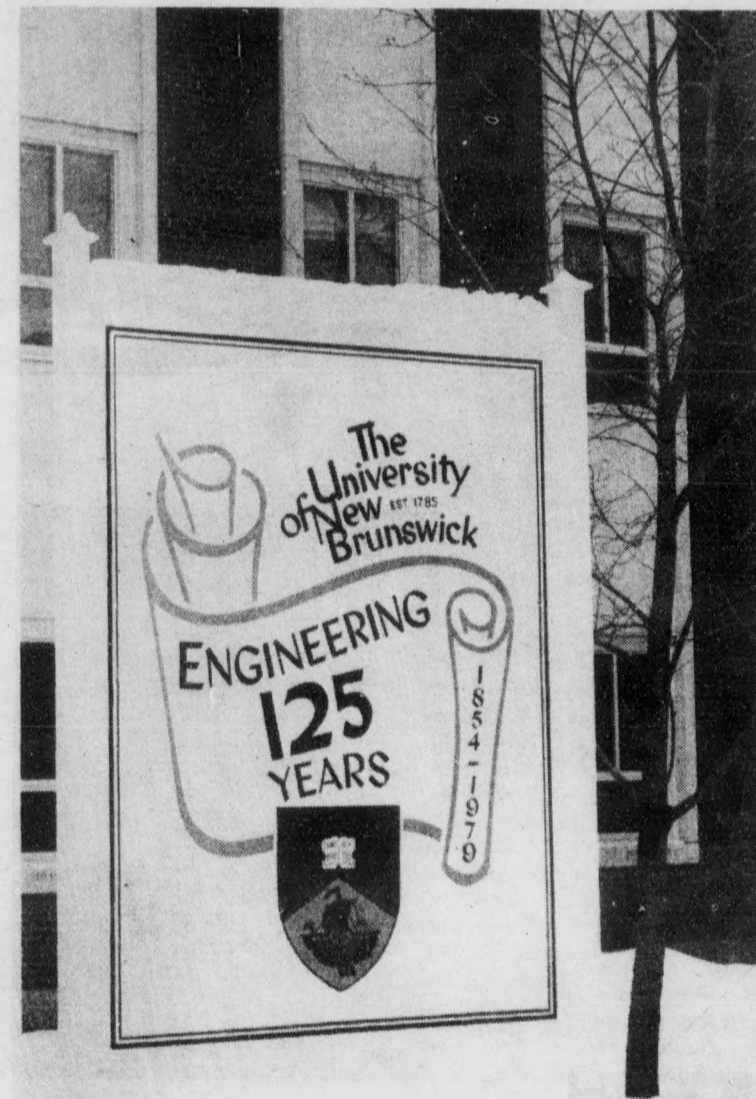
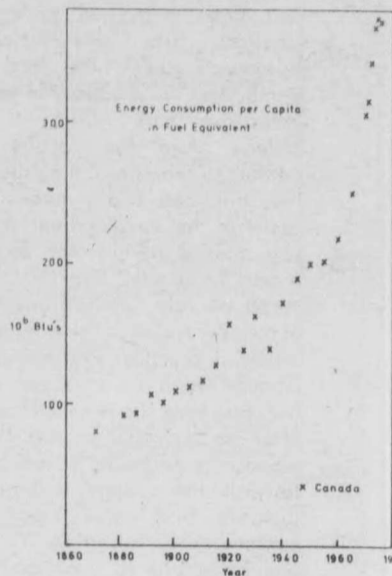
Immediate objectives of the Institute include development of myoelectric control systems for young children, and of systems which will permit control of four (or more) functions by a single muscle. As well, basic research concerning the generation and processing of myoelectric signals will be continued.

Other areas of research in the Institute are closely related to the myoelectric control systems work. For instance, the capability of processing electric signals from muscles has led to research in Kinesiology, in which these signals are used to determine the relative activity of various muscle groups during exercise. The possibility of using techniques developed in the control systems research to aid in diagnostic electromyography is another related project.

More recently the Institute has become involved in clinical engineering. Under the New Brunswick Hospitals Medical Engineering Program the Institute will develop, over several years, a clinical engineering service for all 38 hospitals of the Province. Through the initiative of the Institute, New Brunswick was the first province in Canada to make such a service available to all its hospitals. Initially the Institute is providing much of the actual service directly, but ultimately this



Bionic arms developed Here at Unb



UNDERGRADUATE ENROLMENTS VS YEAR

