

# THE BRIMMING CUP — DENNIS STAIRS

University editors are developing a knack for getting into trouble, or so it would seem from the recent flood of expulsions, hearings and reprimands.

In Vancouver, Editor-in-Chief, Dave Robertson and City Editor, Kerry Feltham of *The Ubysey* are awaiting a verdict from the Student Court for stealing a painting from a collection hanging in the Student Union Building. The two, formally charged with "conduct unbecoming of a student", removed the piece, valued at \$400, last November 3 as a "prank to show how easily the paintings could be taken from the building" and to see how long the disappearance would be unnoticed. The theft was not officially discovered until November 27, when the RCMP were notified. The mystery was finally solved on February 5, when student councillors were led by a tip to the editors' apartment where the painting had been stored. The pair, having testified that they

had delayed returning it until they could find a way of doing it undetected, resigned their newspaper posts pending investigation of the case.

While Dalhousians are humbly battling to have the canteen cat washed, R.I.T. is basking in the proverbial "lap of luxury". *The Ryersonian* reports that a *Seeburg Stereo Juke* has been installed in the college cafeteria. The big advantage: "Instead of dishes, we hear music".

The McGill Carnival Revue, according to the *Daily*, has brought the biggest act "since its conception" to Montreal. The West Point Glee Club, comprising a choir of 96 cadets, a quartet and a concert pianist, presented two concerts and appeared at the Forum Ice Revue

over the weekend. The cadets have appeared, among other places on the *Ed Sullivan Show* and at *Carnegie Hall*.

Reporters of Saskatchewan's *Sheaf*, spurred by the recent suspension of a Vancouver nurse for necking in front of a hospital residence in broad daylight, have investigated U. of S.'s Ellis Hall. They discovered, among other things, that boys have been giving "sustained kisses" to the girls in the blazing doorlights of the entrance. The reporters observed that the nurses seemed to be doing most of their training on the front doorstep. They promised to continue their inquiries and inform students of their findings with "persistent regularity." They appear to be enjoying their assignment.

## Graduate Studies Column

# Mathematics and Culture

by HARRY LOWE

Most people are familiar with the universal appeal of a humorous cartoon. Such a cartoon needs no caption but is immediately understood by a person from any part of the world as will be evidenced by either his laughter or his immediate change in facial expression. Akin to this universality of the humorous cartoon is the universality of mathematics.

Cultural elements such as language, religion, and dress are generally peculiar to regional groups but mathematics is for the most part universal in nature. During the past summer an international biometric conference was held at the Dominion Bureau of Statistics in Ottawa. In attendance were people representing all manners of language, dress, and religion as well as shades of political opinion. Yet at meetings of this type it is found that the German biometrician shares the same biometrics, the science of statistics applied to biological observations, with the American biometrician and the Japanese topologist and the American topologist share the same topology. Any differences that do exist between them will, in general, have to do with detailed concerning new theories rather than with the known facts which they share.

This puts mathematics in a seemingly unique position today. The mathematicians of the world may speak various natural tongues but their mathematical language is practically universal. After piercing the natural language barrier a mathematician as a rule finds in a journal published in any part of the world the same mathematical symbols which he himself uses.

We have established one of the cultural characteristics namely, its universality. We now ask, what is mathematics? Of course, we are most likely to think of our own particular cultural relationship if we try to answer this question. Furthermore we are apt to end up pointing to various things we call mathematics, and for most people this is all they can accomplish. This, however, does not define mathematics and we should not be alarmed if we cannot define it. Philosophy has tried in vain to obtain an answer and has failed chiefly because mathematics is not absolute by nature. It changes with time and place. We are capable of giving a fair answer of what mathematics was in Greece around 100 B.C. and much of the mathematics of that era has been processed by the centuries to become part of what we call mathematics today. Superficially the Greek geometry seems still to be part of mathematics but strictly speaking it is not. The modern axiomatic form of geometry is something quite different from what the Greeks considered it and the modern form of what they called geometry is only one of several geometries. Greek geometry thus no longer constitutes mathematics.

Mathematics, or what we call mathematics, has changed during the ages. Actually there is great variability in the subject matter covered by the term mathematics. Within the past half century mathematical logic, which was previously not mentioned in any history of mathematics, is coming to be considered part of mathematics. Hence an absolute definition of mathematics probably cannot be found.

If we cannot obtain the absolute definition of mathematics can we say what mathematics is today? We can approach the answer using a cultural approach by observing what mathematicians as mathematicians do. We find that as mathematicians they seem to be working with "abstract forms or structures and relations between them" to quote R. L. Wilder. Usually, and fortunately so, the abstract structures have their properties satisfied by something in real life or which we can at least visualize and the abstract structures can thus be applied to individual special cases. Quite locally, thus, if one takes some forms, say those to be found in painting or music, and abstracts them one does mathematics. Art is also concerned with structure but it involves a certain process of individualization which is not to be found in mathematics. The mathematician can think of the abstract number four, but the painter will paint four objects. Present-day mathematics is then an element of culture "embodying concepts about abstract structures and relations between these structures" to quote Wilder again. The content is, of course, variable and the cultural forces of the day determine the direction of change in the content. This, then, is the relationship between mathematics and culture.

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