UBC Archives Serial

the 432

WEDNESDAY

The Vancouver Sun, Saturday, Sept. 19, 1987 ★★★★

Landmark accord at Montreal will only slow ozone depletion

By ROBIN LUDLOW
Southam News

OTTAWA

THE GLOBAL accord reached in Montreal this week to protect the ozone layer is being hailed as landmark and precedent-setting, but it faces major hurdles before it can be effective.

And the U.S. clearly does not see it as a precedent for taking action on acid rain.

After a week of headbashing, cajoling and compromise, 24 countries including Canada, the U.S., Japan and the Soviet Union worked a miracle of sorts by signing the Montreal Protocol to slow the deterioration of the ozone layer from chemical pollution.

They agreed to try to stop searing great holes in the ozone layer — a fragile band of gases 25 kilometres up that forms the Earth's natural protection from the sun's deadly ultraviolet rays.

There is a dramatic hole about the size of the U.S. in the layer over Antarctica and a similar thinning about one-third that size over the Arctic, discovered by Environment Canada researchers.

Skin cancer, eye cataracts, crop losses and damage to marine life are already increasing

DIPLOMACY

because of damage to the critical shield.

Under the goading of the United Nations Environment Program, the signatories agreed to cut the use of ozone-eating chlorofluorocarbons by 50 per cent of their 1986 levels by mid-1999.

The chemicals are widely used in aerosol sprays, refrigerators, air conditioners, computers and foam products. Hundreds of thousands of tonnes of these chemicals, worth more than $100 billion, annually waft their way upward and damage the protective layer.

Refrigerators and air conditioners will ultimately cost more and replacements for Styrofoam products will be costly.

For each two-per-cent thinning of the ozone layer, skin cancer increases by 10 per cent. The effects are more pronounced at higher latitudes and today Canadians already have as much as a 16-per-cent greater chance of skin cancer than they did in 1950.

While the compromise agreement is better than no action at all, it is far from ideal. It will come into force only when countries that consume two-thirds of the chemicals have ratified it and that is expected to take at least a year.

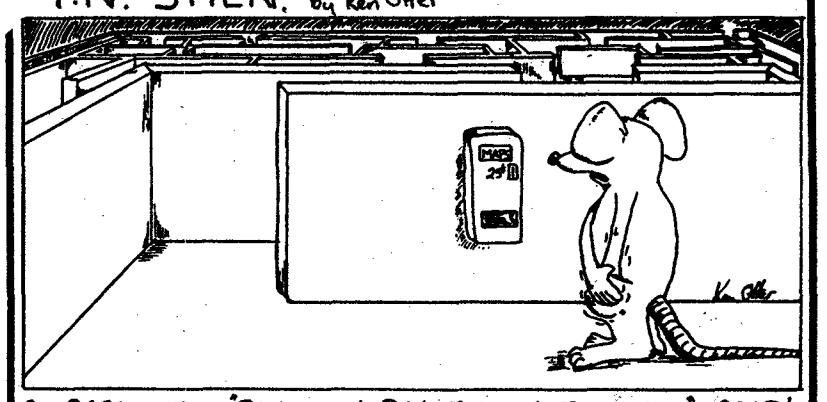
Most countries, including Canada, would have to pass new legislation to put the protocol into effect, and Environment Minister Tom McMillan's controversial Environmental Protection Act, not yet through second reading in Parliament, is likely to face opposition on other contentious matters.

At best, the Montreal agreement will only slow the rate of ozone depletion — it won't stop it or replenish it.

Environmentalists and Canadian politicians had hoped that recognition of the ozone-depletion problem by the U.S. would be a harbinger of hope on the acid rain issue.

But while Lee Thomas, the U.S. Environmental Protection Agency head, said the ozone accord showed "an unprecedented degree of cooperating in balancing environmental protection and economic development," he made it clear that he views ozone and acid rain as separate issues.

McMillan's hope that Montreal could have been a first step to action on acid rain was further dampened Thursday by the release of an acid rain report in Washington which concluded that because there is still considerable uncertainty on most aspects of the acid rain problem, further research is needed before controls can be justified.



THE PAPER FOR SCIENCE STUDENTS
UBC, VANCOUVER
Sept. 23/87
Number 2

OZONE

It's a potentially harmful form of oxygen (O_3) if inhaled, but its presence in the upper atmosphere of the earth (12-30 miles above the ground) is vital in protecting us from harmful ultra-violet rays. Without the ozone layer, life as we know it would not exist on this earth.

In 1974, two scientists: Professor FS Rowland and Dr. MJ Molina, proposed a theory which was later substantiated by a government sponsored study in 1976. The theroy proposed the harmful effects of chlorofluorocarbons (CFC's), commonly used in aerosol sprays as propellant, on the ozone in the upper atmosphere. The chlorofluorocarbons rise into the upper atmosphere and the following reaction occurs:

1. $Cl + O_3 \longrightarrow ClO + O_2$
2. $ClO + O \longrightarrow Cl + O_2$

Thus, molecules of ozone are effectively neutralized and their UV-stopping capacity is destroyed.

There was a public outcry accompaning the widespread media coverage of these findings and despite protests from aerosol manufacturers, the E.P.A.(Environmental Protection Agency) and the F.D.A.(Food and Drug Administration) in 1978, placed a ban to restrict non-essential uses of chlorofluorocarbons. This restriction cut down on approximately 50% of the CFC manufactured in the USA (about 25% of the World CFC production). Meanwhile, manufacturing of CFC's for such uses as polyurethane foam and coolants in refrigerators and air conditioners was increasing, and the EPA and the CFC industries continued to argue over further resrictions. Public concern, however, had almost disappeared as the general public had been persuaded that any danger had been averted. Things seemed "ok" again and the ozone issue dwindled away inconspicuously until 1985 when a "hole" about the size of North America appeared in the ozone layer over Antarctica.

In May 1985, scientists of the British Antarctic Survey reported large unexpected losses of stratospheric ozone above their station at Halley Bay and a team of scientists travelled to Antarctica in late 1986 to learn more. The British researchers announced that ozone levels had been decreasing since the mid 1970's on a yearly basis, especially in September and October, and these reports were confirmed by NASA's satellite obervations. The "hole" is actually a thining of the layer which has occurred every year since measurements began in the mid 1900's.

Three main theories were proposed to explain the depletion:

i) the ozone was being destroyed by nitric oxides produced in the atmosphere by the sun during an active solar cycle

ii) the ozone was being pushed aside by upwellings of air from lower levels of the atmosphere

iii) the ozone was being destroyed in a series of chemical reaction caused by chlorofluorocarbons in the atmosphere

The scientists who went to Antarctica to investigate in August 1986 studied the chemical composition of the Antarctic stratosphere. They found that the ozone at that region contained great amounts of chlorine compounds that are capable of destroying ozone, lending strong evidence in support of the CFC depletion theory.(iii)

Even in the light of the new evidence, Scientists said that there was not enough data to reach a definite conclusion. This led to delays in action against CFC production.

But why so much fuss about a small percentage of ozone being destroyed anyway? For one thing, whether the depletion will remain small is a doubtful subject.

The effects of increased UV radiation on the biosphere includes:

i) a higher frequency of skin cancer with a probable mortality rate
ii) increase in carcinoma (tumors) and perhaps in other UV-B related conditions in cattle, leading to economic loss
iii) a reduction in crop and timber yields
iv) a decrease in plankton production with consegences on the aquatic food chain
v) changes in the competitive ability among organisms, which could alter the entire ecosystem

Clearly, the ozone layer is a problem which requires immediate action in order to prevent dire consequences. Professor Rowland advised that the use of CFC's as a propellant in aerosol spray cans be banned on a world-wide basis- the same advice given by the National Academy of Sciences in 1979. In early 1985 (before the ozone hole report), approximate 30 nations signed the Vienna Convention for the Protection of the Ozone Layer and discussions are still continuing between governments throughout the world on the regulation of CFC's released into the atmosphere. Unfortunately, talk without action leads to nothing and in the words of professor FS Rowland (New Yorker, June 9, 1986):

"It is pointless to waste time estimating what the production of chlorofluorocarbons will be in the year 2050, because the environmental consequences of their use will have long since overtaken us. In short, the atmospheric experiment whose end cannot be predicted is well under way, and the hole in the ozone layer above Antarctica is, unfortunately, just the beginning."

GILLIAN McNAMARA

SUZUKI

Science is mainly a matter of finding the errors in current ideas. Caution is called for.

I graduated in the spring of 1961 as a fully licensed geneticist. It was an exciting time to be starting in that field. We thought we had become very sophisticated: we knew how many chromosomes people have, we knew that DNA is the genetic material and we had just learned about the operon - groups of genes strung together under one controlling switch. We believed the DNA in chromosomes was made up of a series of pieces joined by a non-DNA 'linker'.

In the few years following my graduation, exciting new techniques were developed and refined: hybridization of nucleic acids, binding of DNA to specific places in chromosomes, use of radioisotopes and density gradient centrifugation. We learned that the Y chromosome is what determines sex in a newly fertilized egg. We cracked the triplet code, discovered messenger RNA and derived the genetic dictionary. There was a real sense that we were gaining fundamental insights into gene structure and regulation.

I dwell on this period to remind you that the current excitement over new revelations in science is not new. I cannot stress that enough - there have been many examples in different areas of science of rapid growth brought on by new theories or instruments. But only very recently, scientists revelled in the search and discovery. My field of expertise was an esoteric once called 'chromosome mechanics', which used the fruitfly as a model. We had achieved great sophistication in rearranging genes and chromosomes, and we derived intellectual pleasure from our manipulations. We took pride in doing 'fundamental' work with no immediate or obvious application. We pushed back the frontiers of knowledge for the sheer joy of it.

But ever since the Manhattan Project, Big Science has been tied to the political and economic objectives of governments. Today, we cannot imagine science without the massive infusion of money from the military. And now, biology has moved into the public eye as a discipline with enormous economic potential. Science is no longer the domain of underpaid faculty members working with meagre research funds; governments invest large amounts and in return, demand tangible profits.

LOOKING BACK

So today, academics are rushing to exploit new ideas in the world of business. 'Biotechnology' is one of the hottest fields in the stock market. But wait a minute! If scientists had had the same impulse to translate their work into profits when I graduated, what would we have done? We did have impressive new tools and ideas, but we didn't know anything about insetion sequences within eukaryotic genes. We didn't know how messenger RNA was processed between the nucleus and cytoplasm. We didn't know all of the factors involved in translating RNA into protein. We didn't know the importance of DNA sequences 'upstream' or downstream' from the coding region of a gene. We didn't know that a chromosome is a single continuous molecule of DNA. Today we know all of that and more.

Were we so incredibly naive in the 60's? Of course not. A quick reflection on the history of science shows that scientific knowledge advances by attempting to 'make sense' of experimental results and observations. That in turn, leads us to do further experiments or to look for more detail. Current ideas are by nature tentative; their main function is to focus on the ongoing inquiry. Whether or not they're right is of secondary importance.

Wrong, irrelevant or unimportant

Indeed, looking back at the vast literature accumulated in the decades since my graduation, I am most impressed by how few papers seem important today. Most articles add at best a small increment to our body of knowledge; many are wrong, irrelevant or unimportant. Out of the mountain of literature, a few papers will emerge over time as truly important contributions. This is note to denigrate or downgrade the value of all those publications. They are necessary but it is inevitable that only a few will represent truly novel work. This was always true in the past, and even more so now that there are so many more scientists with overlapping interests.

The point is this. We know that very little of what we are reporting today will stand the test of time. We know that even our most exciting ideas will be modified, refined, and transformed with more research. We know tha today's 'hot' model will be tomorrow's discard. In short, most of what goes on in science is showing that our current ideas are wrong. Why then are we so anxious to rush immediately to exploit every new insight? Surely history warns us to be extremely cautious in using tentative knowledge.

Today our new powers seem to hold out the promise of eliminating mutations and hereditary disease, increasing longevity, cloning individuals, and creating novel organisms for release into the environment. Geneticists, of all people, should know their history. Early in this century, some of the leading geneticits of the day created a new 'science' of eugenics. They thought that their powerful discoveries have them a way to eliminate harmful hereditary conditions and to 'improve' the human race. That tragic delusion ended in the Holocaust. It behooves us to learn from history and not repeat the same mistakes.

DIMENSIONS, April 1987 With permission from Dr. David Suzuki

THE BLACK HAND

I wish to stress that the Black Hand does not exist. Vicious and permicious rumours have been planted in the populace that this so-called "organization" is responsible for the recent spate of painting and tarring of the Applied Scientists' cairn. This is absolutely not the case. It could not be, for, as I said, the Black Hand is a non-entity.

As this year began, we discovered that Darren McBratney, widely regarded as the chief coordinator of the Black Hand (a preposterous notion of course), was not returning to UBC. Thus, there was a clamour for a new coordinator. None has yet been found, but the Black Hand is going about its non-existent business anyway.

If you are interested in performing pranks and stunts, the Black Hand would be interested in you, if it existed, which, of course, it doesn't. You could leave a message in the SUS office, but no one would read it--no one authorized, anyway. But you could try. We make no guarantees. None whatsoever.

This article will self destruct in ten seconds.

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STAFF

MINUTES

SUS

Submitted by Jean Antoine

SEPTEMBER 17, 1987

PRESENT: Todd Ablett, President; Michael Glenister, Treasurer; Stella Wong, Sports Co-ordinator; Brian Pataky, AMS Rep.; Derek Miller, Publications Co-ordinator; Doni Jacklin, Public Relations; Garry Mark, Science Senator; Jan Weisbrod, 4th year rep.; Shawn McDuff, Sheryl Tewnion, 3rd year rep.; Margaret Fraser, Physsoc President; Alex Pope, cs3 Rep.; Patty Carmichael, Dawson Rep.; Dale Shawchuck, Sales Manager; Grover Wong, Charity Co-ordinator; Vince Jiu, Jean Guay, 432 Editors.

GUESTS: Linda Low, Academics Committee Chairperson; Sara Fisher, Ian Wakeford, Blood Drive Co-ordinators; Cam Dowall, Science student.

The meeting was called to order by todd Ablett at 1:30pm.

POSITIONS: Nominations and elections were opened for council positions.

NOMINATIONS: Cam Dowall was nominated as a 2nd year rep.

AMS: The AMS is trying to set up an electronic mailing system to keep UBC informed of jobs available in the East. Job opportunities available. Apply at AMS business office.

AIRBAND: It will take place on Friday, Nov. 13 from 7:30 to 12:00. Ticket price will be $3 in advance and $4 at the door. The entry is limited to 20 bands. Sound system rental will cost $500. All faculties are invited.

BLOOD DRIVE: It will take place during Science Week and daily prizes will be given. Emphasis will be to placed on competitions between faculties and departments who give the most blood.

ACADEMICS COMMITTEE: This is a channel for students to voice their concerns. A box will be set up in SUB to receive input and office hours will be assigned in Scarfe to receive concerns. An Excellence Award will be inaugurated and nominations can be submitted twice a year.

SPORTS: Science turnout for the Terry Fox Run was very low. However, $400 was donated! Stella needs help for some events. Anyone interested will be appreciated. More women are needed to compete in sports.

CS3: The club had their first general meeting and turnout was great! A new department head was installed.

SENATE: 3 student senate positions are vacant. Anyone interested should submit an application for the Science Senate position before Sept. 24, 1987.

The meeting was adjorned at 2:30pm.

FROM THE PREZ

This article will deal with something that is as hard to figure out as it is to write about. I'm referring to those magical and mysterious qualities of Spirit and Drive.

My first attempt to write this article started with a bitter and slashing attack of those of you who never participate. I especially condemned those of you claiming to be interested in helping your fellow man (eg. medicine, dentistry, pharmacy, rehab, etc.) that have yet to come to a charity event or lend a hand to the charity committee. But then a simple realization came to me. There are people in this world who get involved and those that don't. This is the me generation isn't it?

Some of you I feel sorry for. You cannot participate because you don't have the time. In other words you lead a life of constant confusion, running from one deadline to the next. Perhaps you are really not all that smart and have to spend ever waking minute studying. Maybe you are a deadbeat and all you ever do is watch TV or sit in your room and daydream. You will graduate from here, as you probably did from highschool, wishing you had done more, had become more involved, or had a few more friends than the ones you share rooms, lectures or labs with.

Some of you have your act together. You do your academic work, you maintain both social and recreational interests and you do this while maintaining your marks. You will graduate from here a complete person. There are other perks that go with this. Whether you remain in Science at university or head on to the broad spectrum of professional careers the people you meet here will be a definite asset in your future.

I do not wish any harm to those of you not involved. You are doing that yourself. To those of you who do not believe in life passing you by, you know the others are jealous of you.

In closing I realize some of you will scoff at this article, some will be made uncomfortable and some will not have the stamina to finish reading this. I'm not overly concerned about you. Those that feel a bit of pride and know they are involved (even if in some small way) I hope I've helped your day along. And as a final shot I will remind you that you can always get involved-it's never too late. Try it - just start with a half hour per week.

Todd Ablett
SUS Pres. 87 /88

AMS

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TREASURER

Good evening comrades. I bring you an up to date bulletin regarding my current activities within the SUS. I am once again in control of the SUS money supply. (Heh, Heh). In order for me to serve you better, I can be found in Scarfe #9 at the following times:

	Monday	2:30 - 3:30
	Tuesday	1:30 - 2:30
*	Friday	3:30 - 4:30

*Friday is primarily my pink slip day. Money requests received during the week will definitely (almost) have a cash disbursement completed for Friday. Therefore it is only necessary to drop by on a Friday when looking for reimbursements! For EMERGENCY cases, money requests can be processed earlier, but Intramural rebates rarely classify as EMERGENCY.

I look forward to seeing you.

Michael Glenister
SUS Treasurer

Well, here we are back for another year. The summer seemed to zip by so fast it all seems like a "blip" to me now. However, during this "blip", the AMS did meet every two weeks. Here are the highlights:

-UBC was pressured to divest any money that was invested in any company that may have an African interest.

-The Disabled Student's Association and the Coalition Against Aids Association became constituted as AMS clubs.

-An ad-hoc committee was formed to study all aspects of the UBYSSEY, including such issues as to whether we should pay the editors, and how content should be managed.

-Ron Patton was appointed as the new Ombudsman.

-An Alumni associate fee has been set at $70. This fee provides Alumni with an AMS card allowing them the same sort of benefits as students receive.

-Intramurals has promised to publish a copy of their budget in the Ubyssey, but so far I have not seen anything. Keep those peepers peeled. (How's that for alliteration)

-Approximately $70,000 worth of typesetting and camera equipment has been bought by the AMS to aid in the layout etc. of the UBYSSEY. In the long run, this will save us money, as we no longer have to contract out the work.

-A computer network will be set up for students who are interested in what jobs are available in the East. You will no longer have to correspond or travel to the East to find out about employment opportunities. Watch for details.

-Sac applications are now being accepted until Sept. 25th, 1987. Apply at the AMS business office. There is also one vacancy on the Aquatic Center management board.

-AMS budget has been drawn up and approved. If you have any interest in seeing the figures for Tortellini's, The Pit, Copy Center, etc.., see me in Scarfe 9.

-"Meet the Brass", come into the Pit, October 5, 1987, at 7:00 PM. This is where you can meet Dr. Strangway, various members of the Board of Governors, members of Senate...

-Great Trecker Dinner is on October 8, 1987. This is a formal dinner where someone who has contributed a great deal to UBC and the community is honoured. This year, the Pereault brothers will be the recepients.

BRIAN PATAKY, AMS REP.

Head of Physics

The department of Physics has an enviable reputation for "technology transfer". With such developments as the MOLI CELL, Vortek Lamps and the TIR System, the department's capability to transfer ideas into viable companies outside the university has brought much esteem to this department.

Funded by government grants, agencies, contracts from companies and NSERC (National Sciences and Engineering Research Council), the department draws on these resources to perform research in magnetism, Superconductivity and Low Temperature Research, just to name a few....

Under the direction of Dr. Turrell who replaced Dr. Williams this year, he has the task to further the department's reputable stance.

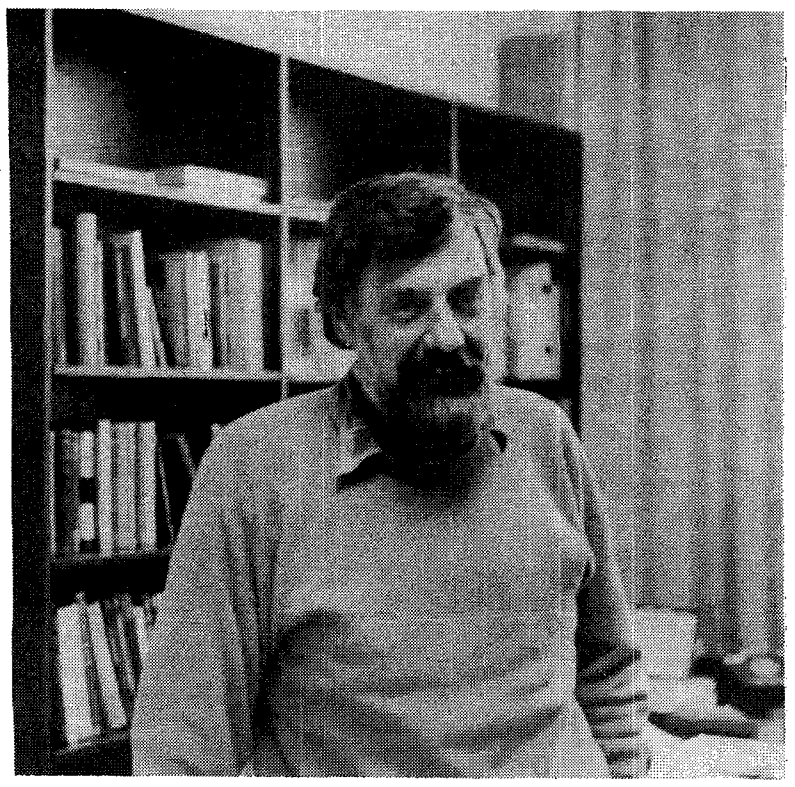
When interviewed, Dr. Turrell said that job prospects at universities are very bright. He said that many professors in the near future will be retiring and the door is open to younger individuals.

This year, two of the world's top scientists were drawn back to UBC. Ian Affleck, physicist, and David Lowe, a top-notch computer designer. Through electronic communications and face-to-face conferences, the CIAR (Canadian Institue of Advance Research) was able to attract back scientists engaged in the leading edge of research.

With the insertion of a Co-Op program last year, the Physics department is well on its way in providing students with the opportunity to integrate into the professional world.

For any interested, Dr. Turrell will be discussing what the Physics department is doing in research on October 1, 12:30 at Hebb 10. Everyone is invited.

Dr. Turrell



By Morgan Burke

TRIUMF. Most UBC students are aware of its unobtrusive existence at the south end of campus, but how many are really aware of what's going on back there in the bushes? As it turns out, TRIUMF is far more than just an enclave of esoteric research, being not only a world force in subatomic physics, but a source of diverse practical applications of particle science.

TRIUMF (the TRI-University Meson Facility) is Canada's premiere particle physics laboratory, and houses the world's largest cyclotron: a 4000 ton, pinwheel shaped array of electomagnets which accelerates negatively charged hydrogen ions to energies as high as 520 million electron volts. This is enough to get those little guys clipping along at 75% the speed of light, where, due to relativistic effects, they are 50% more massive than when they began. The particles take a fleeting 326 microseconds to reach full speed, by which time they have travelled up to 45 kilometres. Though there are other accelerators in the world that accelerate particles to higher energies, TRIUMF has one the three most intense proton beams in the world (it accelerates about 600 trillion particles per second), thus assuring its place at the forefront of modern fundamental science.

The accelerated hydrogen ions are then shot through stripping foils, which remove their electrons, leaving only the nuclei -- bare protons. These make their way along beam lines to either the Meson Hall, where they bombard carbon targets, producing pi-mesons (or pions) to be used in further research, or off to the Proton Hall to be used in the study of heavier nuclei. TRIUMF has been a boon not only to Canadian science, but to the world.

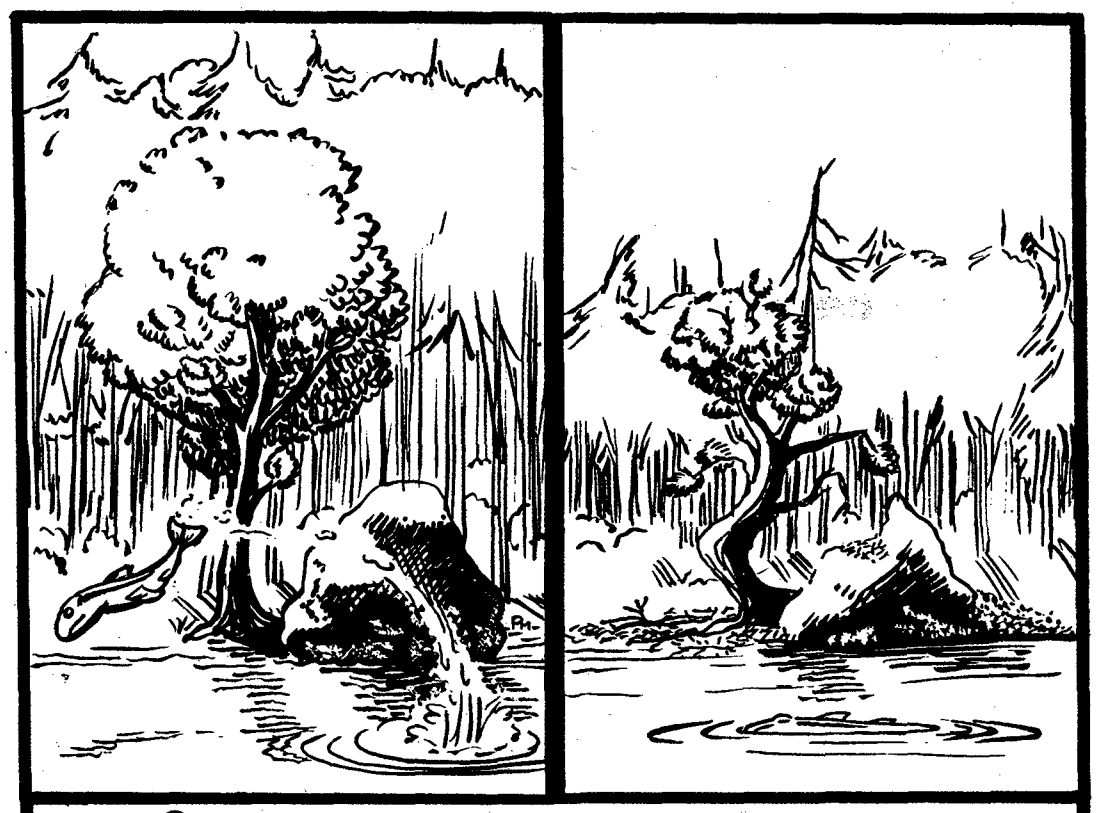
TRIUMF

Bec
in

With the start of a NEW school year and a NEW location for the Science Undergraduate Society office, what could be a better time than to start a NEW committee - the ACADEMICS COMMITTEE. Our main objective is to establish a channel through which students can voice out their concerns, be it unfair marking schemes, or unreasonable exam schedules. Moreover, we will be in charge of setting up a Teaching Excellence Award, and the famous 'Black & Blue Review'. If you are interested in representing your department in our Academics Committee, there will be a sign-up sheet posted in Scarf 9. I want to have all departments well represented.

Academics coordinator: Linda Lo

The Science Undergraduate Newspaper wishes to thank Dr. Turrell for taking time to meet with the editor. Our sincere thanks goes to the department of Microbiology and Statistics for having accepted our invitation. In the next issue, we will feature the Department of Microbiology. We would like to reassert our invitation to the other departments in the Faculty of Science to open up their doors to our Science Undergraduate readers.



BEFORE AFTER

acid rain

"Do you know something about acid rain?"

"Do you have an opinion on acid rain?"

SEND US YOUR THOUGHTS (preferably in writing) to THE 432- in Scarfe 9.

ause the SUS has had 432 different offices the past five years.

Because 432 cases of amber nectar are consumed during the paper's production.

Having completed the first issue of the newspaper without a name, the editors brainstormed fervertly. They looked at their watches and it was 4:32, thus the paper was born.

Editor's I.Q. is four hundred and thirty-two (432)

4-3-2. These are the years where most students are concentrating on their chosen field.

WINNERS !

The 432 would like the people who have already entered the contest. To all the other people who did think about it but never got around to doing so there is still time to enter! This biweekly draw was won by Jeff Leroux (the poor soul really wanted to win, he submitted half the entries!). By the way, if you haven't entered because you don't have anybody the go to dinner with you can always take out one of the editor or one of the lovely staff.

the 432 WHY? CONTEST

Can you guess as to why we've called the paper THE 432? Get those pens and pencils rolling because we have prizes galore to give away. Let's hear from you. Whether it be totally absurd or totally true, you have a shot at the grand prize and much, much more.

GRAND PRIZE: Dinner for two at 'Foggs and Suds'

Bi-Weekly Prize: A Science Wind-Breaker for the best entry.

Entry Prize: Four 'suds' t-shirts will be awarded to entrants meeting the bi-weekly entry deadlines.

CONTEST RULES

1. The contest is open to Science students only. SUS executives are not eligible to enter.
2. Each entry must be accompanied by a fully completed ORIGINAL entry form. Copies of the entry form will not be accepted.
3. All entries will be considered for the Bi-weekly Prize and the Entry Prize meeting the bi-weekly entry deadline.
4. All entries become the property of the SUS and will not be returned.
5. The contest closes OCTOBER 16, 1987.
6. The decision of the judges is final.

The second bi-weekly entry deadline is Friday, Oct. 2, 1987. entries received on or before this date are eligible for the Bi-weekly prize and the Entry prize. Drop off your entry in the SUS Contest Box, Scarge Building , Room 9

THE 432 *contest*

Name:

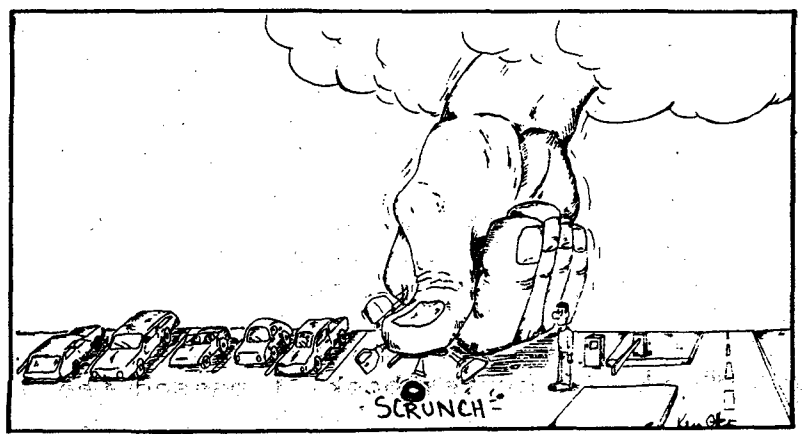
Phone:

Good Luck !

EDITORIAL

- Jean Guay

Have you ever parked in B-Lot? If you have, you must surely realize that the system doesn't work. Not only do students have to put up with the gate coming down on their car the minute the Lot is full but also many students who have legitimately entered the Lot cannot find a parking spot. The problem arises from the fact that some students have figured a way to enter the Lot even when it is full. It's not surprising, but what is comes from the fact that the Traffic Department hasn't made previsions to avoid the situation. If the pinheads in that department want to know how they can correct the problem they can contact me. Meanwhile, what happens to honest people who enter the lot in good faith only to find out that there is no more parking spots. The problem continues when the lot is cracking full and a car exits, the system lets another car in even when the Lot is still overflowing. The net result? The car, that has entered legally and in good faith, will be stuck parking in an illegal place after having looked for an empty spot for fifteen minutes. But then, a Pinhead Cowboy comes along ticketing any cars which are not parked in their neat little spots. The alternative, paying 25 cents to get out without a parking spot and late for class! So lets just hope that the Traffic Department uses the fine money to improve the system so innocent students don't have to pay even more fines.



CLUBS

NOTICE TO ALL MEMBERS OF THE
UBC PHYSICS SOCIETY

We will be holding our General Meeting on Thursday, September 24 in Hennings 301 at 12:30pm. The purpose of the meeting is to elect year representatives and to plan events for the coming year.

PHYSSOC LECTURE SERIES

Dr. Brian Turrell (Dept. Head) will speak on the Physics department and its goals.
Time: 12:30pm, Thursday Oct. 1
Place: Hebb 10

Doughnuts Afterwards!

CUPC CONFERENCE

University of Calgary
Presentations in 3 catagories:
-poster, short paper, major paper
-subjects are of your choosing

Meet and hear presenters from around the country. For more info, contact the Physics Society in Hennings 307 before Sept. 25/87.

Chemistry, Pre-Med, Math, Microbiology, Computer Science, Geological Sciences, Astronomy/Aerospace and Physsoc.

These are the clubs that Science has to offer to students. So, get involved and join a club!

Clubs, let's hear from you. We have space devoted to your audience.

THE MAN WHO MOVED AT THE SPEED OF LIGHT

PETER MacDOUGALL

He reasoned it this way: "I see two birds flying very fast beside each other, winging across the countryside without anything but the air itself to slow their speed. To me they move very fast. Yet, if I were one of the birds, my friend, the other bird would not seem to be moving at all to me; he would get neither closer nor farther. So it would seem that we are standing still while the countryside whizzes under us. Is the reality the way I see it from the ground, or the way I see it through the bird's eyes? Could it actually be that, though I seem to be standing still, actually me, the Earth, and the birds are moving. Perhaps at some phenomenal speed?"

He reeled for a moment. "Then being stationary is an illusion and only speed exists." He sat down quietly on the shaded grass leaning his back against the fence. It was a warm summer day, ideal for philosophical thought and idle meanderings of the mind. He asked himself, "I wonder how fast I'm moving? Could I ever really tell?"

He smiled, "Maybe I am moving very slow..." He looked about with a bemused smile on his face at the blue skies, the cool shadows, green grasses, and the birds and clouds hanging in the air. "No I feel too giddy to be moving slow. I must be moving fast, very fast!" The birds continued flying oblivious to him.

From his sitting vantage point he watched the sun mount the sky then crash into the western horizon. The stars whirred in arcs through the short night and the sun exploded out of the east in mere moments. "Maybe I could be moving faster than I think..." his thoughts continued. The sun, moon, and stars strobed through the sky a thousand times a minute while he pondered his speed.

He sat in the writhing grass, against the fence that quickly aged and crumbled into dust. "I can see all of history from here!" he was quite pleased to find. In boggling rapidity, scene after scene enacted itself before him while he sat enrapt watching the progression. "What a most marvelous discovery! It's a pity I cannot share it with anyone." As soon as anyone appeared before him they disappeared, their curiosity unequal to his velocity.

"What discussions we could have. Perhaps I could be going faster..." Everything flashed past his sitting vantage point with such rapidity now that it was getting difficult to follow. "I wonder how fast God travels? What velocity is his? Perhaps he is faster...I should like to meet him."

Suddenly something whirred past his view that caught his eye but he could not make it out. "What was that? Damn. I would have liked to have seen it." Centuries unfolded in a breath. The sun strobed and exploded as a nova into dying embers. And then there was nothing.

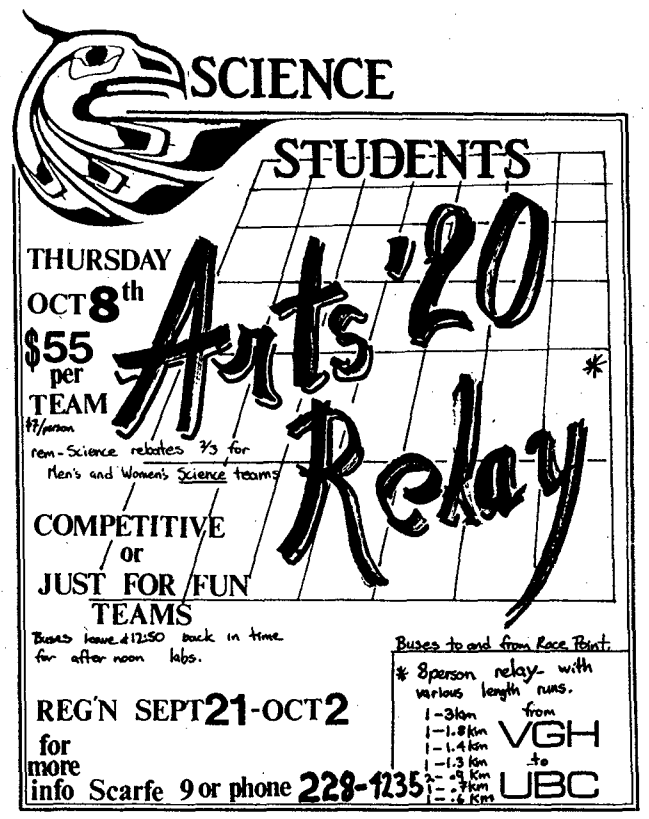
"...I seemed to have reached a limit." All of history had ended, the grassy hill was gone, the birds, clouds, sun and stars, too.

"But is there truly a limit? How can there be a limit to speed when there is no beginning, no zero speed?" he reasoned and then started thinking on a different track. "Perhaps this limit is the zero point, an arbitrary starting and finishing point, and speed is but a circle." He pondered that for the rest of eternity, which was a minute.

"Circles go end on end, and the end is but the beginning."

He smiled, "maybe I can catch that bit I missed!" he rubbed his chin and leaned back against the ether, waiting for the show to start again.

SALE: Prices are listed on the back page.



For those new to UBC, this is the major Intramural event in Canada. It is a race with 8 people running from VGH to UBC.
Registration: Sept. 21-Oct. 2
Race Date: Oct. 8 at 12:30pm (Sub Plaza)
Cost: $55.00/team ($7.00 per person)
If you register under Science, you will be rebated of 66% and you will receive a T-Shirt when you register. Sign up at Scarfe 9 and everyone is welcome.
The run will be held from 12:30 to 2:30pm and will not interfere with your classes.
Free transportation is provided. The run is easy and anyone is capable. For more info, call Science Undergraduate Society at 228-4235.

DATE: Friday, Nov. 13, 7:30-12:00 AM
LOCATION: Sub Ballroom
PRIZES: 1st----------$400
2nd----------$300
3rd----------$200
SPECTATOR COST: $3/person in advance
$4/person at the door

ENTRIES: Deadline: Friday, October 30
Group Size: 7 people maximum
Cost: $60 per group
(you get 20 Tickets!)
Sell them to friends!
$40/ single entry
(you get 10 tickets!)
Sell the tickets and keep the money!

-We provide sound and lights, the rest is up to you (please list special equipment for act)
-You must hand in your tape with the songs (2) by September 30, 12:00 noon.
-Songs are MAX 3:00 minutes (ie. 180 sec)
-B75R. Guess what is 75 CENTS??!! (Sorry, no minors)

BRIEF

The Science Undergraduate Society on behalf of all Science students at UBC donated $400 to the Terry Fox Run on September 13,1987. The money was raised by holding a loose leaf paper sale with all proceeds going to the cause. Well done!

The Scavenger Hunt on September 16, 1987 drew up odd items such as "nude" playing cards, rocks and insects... The participants had an unforgettable time! Winners walked away with $30 and the runner-up with $20.

The position of Science Senator is vacant. Previously occupied by Gary Mark, he is now pursuing his educational endeavours.

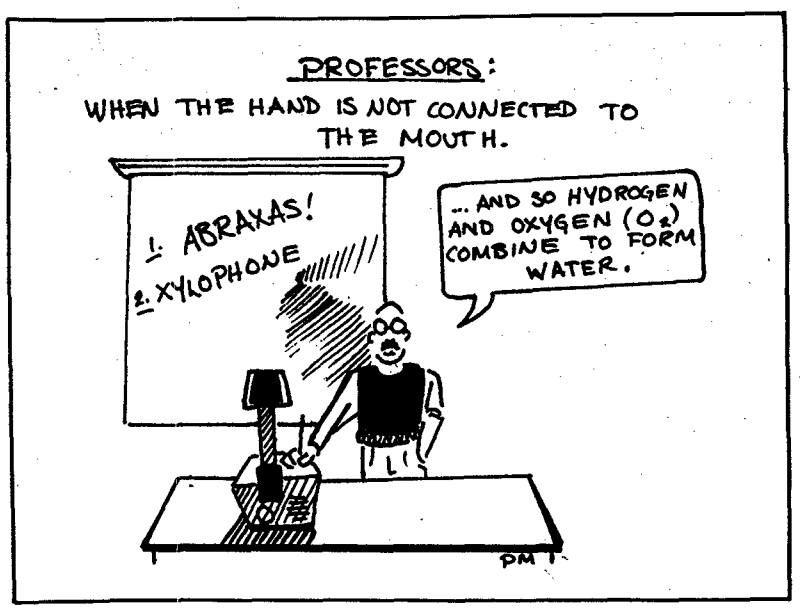
The UBC Health Science Center Hospital is looking for Volunteers. Registration is being accepted on Sept. 24., 12:30pm at the Psychiatric Unit Lecture Theatre. All interested are invited to the orientation. You can make a difference!

Today is CLUBS DAY, it continues until Friday. Be inquisitive and open to a world of opportunities at your choosing. Join!

The Science Undergraduate Society is looking for individuals to fill the position of:
1) 2nd Vice
2) Social Co-Ordinator
3) 1st year Reps.
Anyone interested should see Todd Ablett at once.

Expo Center will soon become the new "Science World" complex. The federal, provincial and the city of Vancouver will each cover the cost of the conversion. Not only will it attract tourists but it will extend to communities from Ft. St. John to Victoria and from Prince Rupert to Cranbrook in the Science forum.

The Computer Science Club invites all Comp. Sc. students to the Welcome Back Night on Friday, September 25 at 4:30 in Room 203A (Club Office). Meet your profs and enjoy liquid refreshment. See you there!



Professors are given a captive audience. This, in my experience, has been exploited. One extreme example comes to mind. I will call him Dr. H. Byrd to protect his identity. The first lecture with this professor was fine-quite often it is nice to hear a little bit about the life of a professor to create a familiarity with him and an understanding about who he is. However, the rest of the year was a basic survey course of the private life, hobbies and research of professor Byrd (interspersed with the odd piece of info relating to our course). The lecture, as I mentioned, contained at least the odd piece of course related material--I could live with that. Then I was pushed beyond my boundary of tolerance: one day, he devoted the entire hour to a slide show presentation of his artwork. What does this have to do with Science?! If I was interested, I would have been in Fine Arts. Thanks to my textbook, I passed the course. I am sure that most of the other students passed for the same reason. The fact that we had passed left no indication of what a terrible lecturer he was and so he is out there somewhere this year...BEWARE!

INSIGHT

If you have a gripe about a certain professor and the methods he uses in teaching, THE 432 would like to hear from you.

THE 432 takes no responsibility whatsoever for the opinions expressed by the student populace.

The 432 is looking for dedicated individuals to join our staff. If you have the capability for writing, researching, and looking for THE STORY, join us! We are also searching for an Advertising Manager(commission basis) and able bodies to distribute our newspaper, THE 432. The experience will be worthwhile. Come join our TEAM!

Our sincere thanks to Dr. McGregor for allowing us the use of the facilities in the Scarfe Building for our Newspaper production.

SPORTS

If you haven't been phoned yet, come down to Scarfe 9 and leave a message for one of our Sports Rep. or call 228-4235.

Sports Rep. Bernard (Chemistry)- Men's Soccer
Linda (Chemistry)- Women's Soccer
Gautam (Comp. Sc.)- Basketball
Henry (Oceanography)- Arts 20
Scott (Biology)- Volleyball

Sports Co-ordinator: Stella- other sports.....

SOCCER

Registration ends Sept. 25
Guys/Girls sign up now for THE EVENT of the year under BC Place.

Registration ends on Oct. 2 for the 3 on 3 Basketball Tournament and the Basketball League. Sign up fast! Guys and Girls wanted.

BASKETBALL

VOLLEYBALL

ICE HOCKEY

Registration ends Sept. 25!
Sharpen your skate for action!
Girls, where are you?

SOFTBALL

Science has 3 teams entered.
The event takes place on Sept. 26, (9:00-4:00pm) at McInnes/Osborn Field.
Come out and cheer them on!

Registratin ends Oct. 2. It's open to men, women and also co-rec.
A great sport to compete, socialize and exercise! Come down to Scarfe 9 immediately.

TOUCH FOOTBALL

We have 7 teams entered! 6 Men's and 1 women team. Be at the McInnes or at the Osborn Field to see Science win the tounament! Everyone invited.

Edge of Rainforest Run(12.9km)-Sept. 27
Greek Colour Day (3/5.5km)-Sept. 25
University Gates Road Run(3/5.3km)-Oct. 2
Halley's 1/2 Marathon(22.0km)-Oct. 4

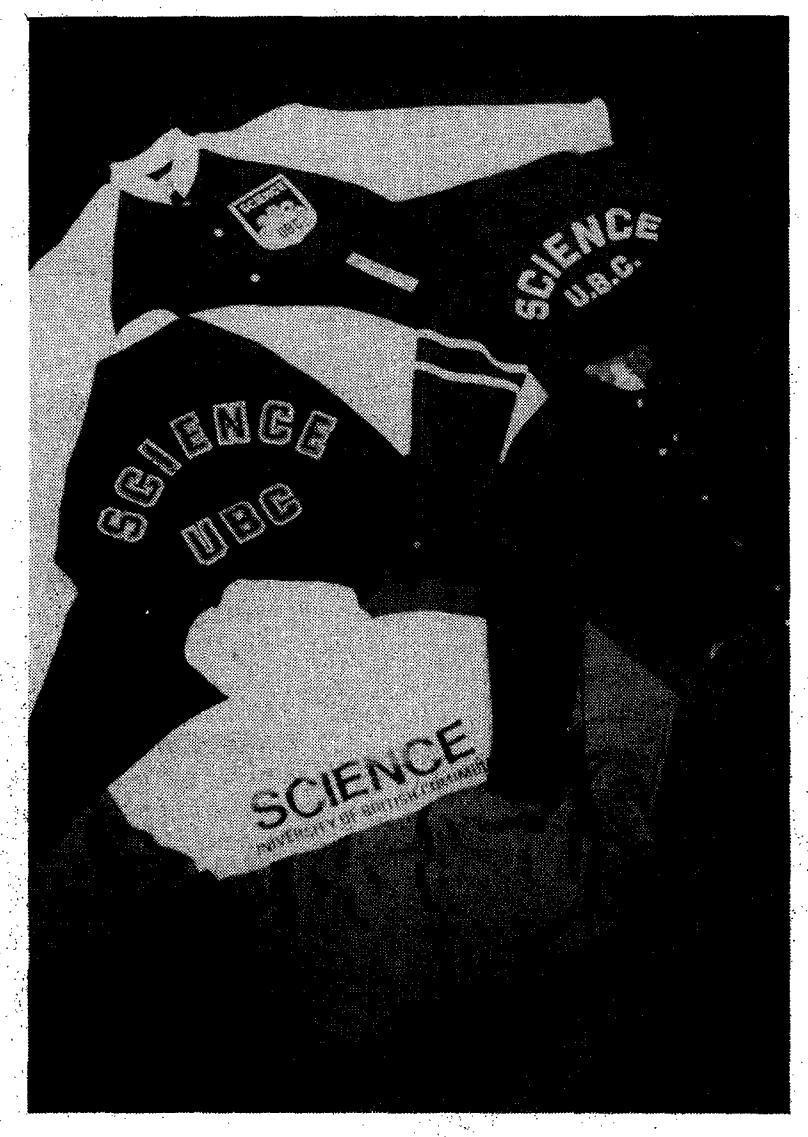
RUNS

Registration ends on Oct. 1
See you at the green.

GOLF

Vollevball in a racquet court. Sounds odd? Give it a shot. You might like it.
Registration ends Oct. 9, come quick!

WALLYBALL



SALE

If you are interested in becoming a sports organizer, please come and visit Stella, Scarfe 9.

SALES OFFICE HOURS

Tues. 12:30-1:30
Thurs. 12:30-2:30
Fri. 1:30-2:30

Sales Manager: Dale Shewchuk

Einstein/Faculty Woven Shirts	$19.95
Einstein/Faculty T-Shirts	$12.95
'SUDS' T-Shirt	$ 5.00
Science Sweatpants	$19.95
Stripped Rugby Shirt	$19.95
Kangaroo Sweatshirt	$15.00

Science UBC Jacket -$120
(White leather sleeves, blue melton body)

Science UBC Jacket
(blue melton body) -$40

Science Windbreaker -$30