

C₃ News

Newsletter of  College Chemistry Canada / La Chimie Collégiale au Canada

No News is not necessarily good News

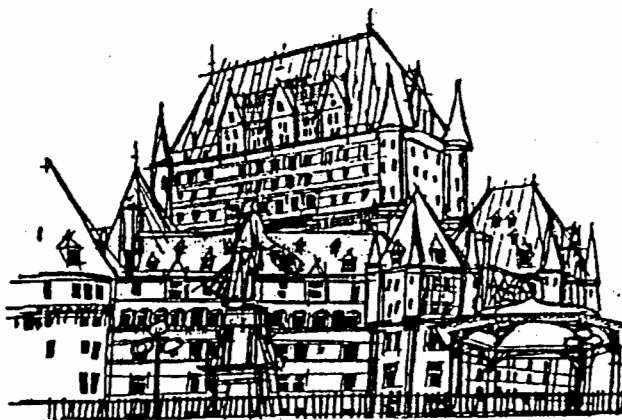
As you have no doubt detected, there has been a slight pause in the production of our newsletter. Let me explain. At the Annual General Meeting in June, it was decided that the responsibility for publishing the *C₃ News* should be divided between the Editor, who would be responsible for soliciting and editing articles from members, and a non-elected Managing Editor who would be responsible for production and mailing. Alan Davis and I agreed to do the latter function, and I gladly handed over the position of Editor to Peter Slade. Unfortunately Peter was forced to resign in early summer so the newsletter has been without a leader since that time.

This issue is a collection of bits and pieces which have been on my desk since the summer, and I apologize if one or two of them are a little dated. Perhaps "Hot from the Presses" should be renamed "Cool from the Presses"? In any case, I thought it was important to let you know that *C₃* is alive and well and that the conference in Québec City is going ahead as planned. I assume that Alan and I will be putting together a Conference Issue in February which will contain more details about the programme and accommodations in Québec. I sure hope my retirement is a little more successful when I reach 65!

Best wishes for the New Year and for the coming semester.

Bob Browne
Editor

18th C₃ Conference, June 13-15, 1991: Champlain College, Québec City



The eighteenth conference of College Chemistry Canada will be held at the St. Lawrence Campus of Champlain Regional College in Québec City. The theme of this conference is "Chemistry and the Environmental Challenge", a topic that concerns us all.

Québec City, historically the oldest French colony in America, was proclaimed a World Treasure Heritage by UNESCO in 1985. Here, not only can you enjoy some of the best restaurants on the continent (at reasonable prices) but also you will appreciate the cafés, delicatessens, and fine épiceries from all over the world. In the evenings, you can enjoy discos, sidewalk cafés and bars where you can have a kir or a café allongé while listening to your favourite music. Sound good? Then plan to join us. Further details in the next *C₃ News*, or write to Pierre Zubrzycki, Champlain Regional College, St. Lawrence Campus, 790 Nérée Tremblay Street, Ste-Foy (Québec) Canada, G1V 4K2, tel (418) 656-6921 or Fax (418) 656-6925.

In this issue...

<i>CP Award</i>	2
<i>C₃ AGM</i>	2
<i>Hot from the Presses!</i>	3
<i>News from the Regions</i>	5
<i>Goodbye Fax, Hello E-Mail</i>	6
<i>College Comment</i>	7
<i>1990/91 C₃ Board and Executive</i>	8

First Canada Packers Award Winner: Ariel Fenster

Ariel Fenster of Vanier College is the recipient of the first Canada Packers Award. This award was established to honour a person who has made substantial contributions to chemical education at the college level, and consists of a scroll and \$600 to assist the winner to attend the annual C3 conference. Ariel received the award at the 17th conference at Capilano College.

Ariel Fenster was praised for his reputation as an excellent teacher at Vanier College as well as for his contribution to public awareness of chemistry. He is the co-developer, with Joe Schwarcz, of the "Magic of Chemistry" show, and has travelled from coast to coast in the past 13 years presenting its unique combination of displays, slides, demonstrations and the story which weaves it all together. His public work also includes over 70 radio and television appearances. In addition, he has co-created a series of lectures entitled "Chemistry for the Public" given for the past 10 years at McGill University. His association with McGill also includes donating his time to participate in a course called "The World of Chemistry". It is the largest non-required course on campus with an enrollment of over 600 students.

Ariel demonstrated his unique ability to communicate and educate on the first evening of the Capilano conference. He and Joe Schwarcz gave a multimedia presentation called "The Chemistry of Wine and Cheese", to accompany the opening wine and cheese party. Participants were found to be giving close scrutiny to the labels on all the bottles of the wine served after the talk.

Criteria governing the awarding of the Canada Packers Award in Chemical Education can be found in the Spring 1990 C3 News (Vol 15, No 1). Nominations for the 1991 award should be sent as soon as possible to the secretary of C3, Dinesh Bhatnagar, Algonquin College, 200 Lees Avenue, Ottawa, Ontario, K1S 0C5. □

Highlights of C3 AGM

An always exciting part of any C3 Conference is the Annual General Meeting, held on the last day of the conference. This year's meeting was held on June 16 and was attended by 27 dedicated members.

Following approval of the minutes of the last AGM, reports from the President, Treasurer, Editor and President Elect were tabled. Gary Wilson, President Elect, reported that offers to host the 1991 and 1992 conferences had been received from Champlain Regional College in Québec City and Vanier College in Montreal. He also hinted at the possibility of major conference sponsorship from a large Canadian company. Dinesh Bhatnagar, Secretary, reported that membership in 1989 was 82 with eleven institutional memberships. He noted the usual change in geographical distribution reflecting the location of the last conference. Phyllis Lake tabled the Treasurer's report showing an excess of receipts over disbursements for the year ending Mar 31 of \$3670 for a balance of \$12,804. The Editor reported that the production of the newsletter in its new format requires considerably more time than the old one, and recommended that the responsibility be shared between an editor and a managing editor who would be responsible for production and mailing. The creation of the non-elected position of managing editor was approved by the meeting.

Membership fees will remain at \$20 for the coming year, and conference fees will be a maximum of \$40, excluding membership.

The location of future conferences was announced:

1991: Champlain Regional College
Quebec City (Ste-Foy)
Conference Coordinator: P. Zubrzycki
Theme: Environmental Chemistry

1992: Vanier College
Montreal
Conference Coordinator: J. Schwarz
Theme: Chemistry and the Public

1993: Joint Meeting with 2YC3
Providence, Rhode Island
(to be negotiated)



C3 News

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Articles of any length will be gladly accepted. Please send typewritten copy to the Editor at the above address or send by fax. Copy can also be sent on a floppy disk, IBM format, using WordPerfect, WordStar, Microsoft Word, or any wordprocessor producing ASCII output.
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Peter Slade was elected Editor by the meeting and the following Regional Directors were confirmed:

Atlantic Provinces: S. Naidu,
M.A. Woodworth

British Columbia: K. Fawcett, R. Perkins

Quebec: S. Jalil, C. Gilbert

Ontario: D. Kroeger, M. Lambden

Prairies/NWT: C. Mutch, W. Blann

Alan Davis was given a vote of thanks for his dedicated work during his term as President, and Ariel Fenster was congratulated for winning the first Canada Packers Award. The meeting adjourned at 5:30. □

Hot from the Presses!

By Bob Perkins
Kwantlen College

Need some data on boiling points for polar versus nonpolar molecules? R. Tykodi presents a useful account of the topic in the December issue of *J. Chem. Ed.* p1007-1011 (1989).

In the same issue, P. Mashava et al present the results of the fractional distillation of used engine oil. Test tube tests on the various fractions indicated the presence of carbon-carbon double bonds as well as OH groups.

H. Aldersey-Williams reviews the area of "smart fluids" in issue #1708 of *New Scientist* (March 17, 1990). These fluids solidify when

exposed to an electric current, and engineers predict that they may be responsible for the dawning of a third machine age.

The activation of carbon-carbon single bonds by organometallic complexes is a rich research area for many petroleum companies. R. Bergman describes some of the recent results in issue #1705 of *New Scientist* (February 24, 1990).

Microscale experiments have become more commonplace with the growing concerns over safety, disposal etc... Three papers (p265, 266, 274-275) in the March 1990 issue of *J. Chem. Ed.* describe the microscale synthesis of 4 heterocyclic compounds, the

acid/base extraction of a 4 component mixture, and the isolation of trimyristin and cholesterol. Z. Szafran et al describe the safety, economy, and versatility of the microscale lab in the November 1989 issue of the same journal (pA263-A267).

A. Haim reminds us that the use of a catalyst provides a new reaction pathway for a reaction, not just a lowering of the activation energy (*J. Chem. Ed.* p935-937 1989).

How can you find a academic position in chemistry? E. Gould takes you through the steps in the February 1990 issue of *J. Chem. Ed.* (p123-126).

If you use flow charts to develop organizational thinking in your students, you may be interested in K. Black's isomer chart in *J. Chem. Ed.* p141-142 (February 1990).

New radioactivities is the topic of an excellent review article in the March 1990 issue of *Scientific American* (p58-67) by W. Greiner et al.

The December/January issue of the *Journal of College Science Teaching* (p134-139, 146-147) contains the report of the NSF Workshop on undergraduate chemistry education. We should all have a look at the recommendations. In the same issue, M. Pickering points out that student failure is no fun for the faculty either (p142-143).

Not just for nerds! Science education is discussed in the April 9 1990 issue of *Newsweek* (p52-64).

A. Johnson presents the results of a survey of organic instruction at 33 US colleges and universities in the April 1990 issue of *J. Chem. Ed.* (p299-303). The same issue also contains a description of an integrated computer workstation for the laboratory (*J. Amend et al* p333-336) as well as an article warning us of the pitfalls of precipitation reactions (*P. Slade and G. Rayner-Canham* p316-317).

K. Laidler continues his excellent coverage of historical chemistry with a three part discussion of quantum chemistry in *Chem 13 News* (p7-9 January 1990; p7-9 February 1990; p9-12 March 1990). □

President's Notebook

From C to C

The "President's Notebook" has been a regular feature of the *C₃ News* in its new format. In the past, on first receipt of an issue, I would seek it out on page three for words of Alan's musings, congratulations, or exhortations for us to attend the next conference. He set a president's precedent which I will attempt to follow, at my peril and your potential perturbation.

I have taken the liberty of re-captioning the piece according to my own perverse predilections. It may be appropriate to the times. It has a number of translations. While the phonetic interpretation may be rather trite, there is an advantage to having a corporate name such as College Chemistry Canada. This presents the reader with nine variations. I leave it to you to select your favourite. Colour it with phonetics if you prefer.

I trust that you will also find "College Commentary" of provocative interest. I have purposely omitted inclusion of the middle C in this caption. I hope you will find, that while my "comments" are at least an octave away from the median they will strike a chord from time to time. If you wish to reply, I know that the editor would greatly appreciate your response.

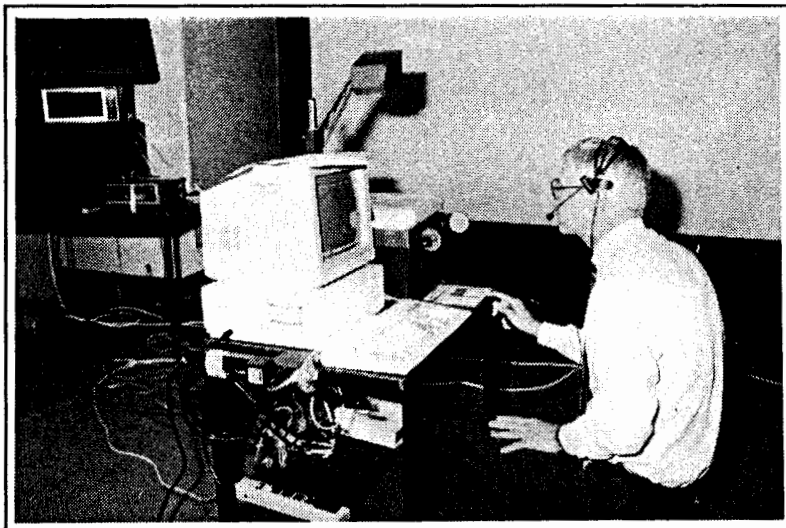
With regard to the editor, I regret to inform you that we are currently without an elected editor; Peter Slade unfortunately has resigned. His schedule and other personal commitments have forced him to yield the post. You will have noticed that the Fall issue of *C₃ News* is late (a forced bit of humour there). Alan Davis and Bob Browne have stepped in (Ed. note: we have?) to the rescue. If I can persuade them to continue to the conference date, you will continue to enjoy the *C₃ News* back in publication. Please send your contributions to Bob Browne, Douglas College, P.O. Box 2503, New Westminster, B.C. V3L 5B2.

I leave you with my first "exhortation". Come to Québec City. The conference planning is well under way. You will learn something, and you will enjoy the visit. Let us show you an enthusiastic C to C welcome.

Gary Wilson
President, C₃

17th Conference Revisited...

Chemistry and Open Learning was the title of one of the sessions at the C3 conference last June at Capilano College. Papers were presented by educators from as far away as the Thames Polytechnic, London, England. Peter Biddle (shown at right) presented a unique computer graphics satellite link with his colleague Joe Spadaro in North Country Community College, Saranac Lake, New York to show how their distance learning tutorial sessions are conducted. ...



...and of course his audience listened attentively.

College Chemistry Canada, 18th Conference First Announcement and Call for Papers

"Chemistry and the Environmental Challenge" is the theme of the 18th College Chemistry Canada (C3) Conference, to be held June 13-15, 1991, at the St. Lawrence Campus of Champlain Regional College in historic Québec City, Québec.

Papers or workshops for presentation at the conference are welcome. They should deal with some aspect of the relationship between chemistry and the environment. Possible topics could include the environment and the college curriculum, the environment and risk: perception and analysis, the environment and the law, wastewater treatment, toxic waste disposal, etc. Presentations may be made either in English or French. Poster presentations are also welcome.

Please send an outline or abstract of the proposed paper or workshop by March 15, 1991 to: Pierre Zubrzycki, Chemistry Department, St. Lawrence Campus, Champlain Regional College, 790 Nérée Tremblay, Ste-Foy, Québec, G1V 4K2. Fax (418) 656-6925.

To be placed on the mailing list for further information and/or to receive application forms, please write to Constance Crossland at the same address.



News From the Regions

I.C Region

by Peter Slade
Fraser Valley College

I have at last been shamed into writing about happenings in British Columbia - at least in my half of the Province: postal codes V1 to V4, so here is the news that some of our colleagues sent in.

Kwantlen College

One of the more prolific writers to C3 News is Bob Perkins, who has now found a permanent home at Kwantlen College in more ways than one. Bob at last found a well deserved full-time job at the Richmond Campus. Meetings have taken place with the planners for the new building, and site preparation was slated for July. The doors should open for students in September, 1992. Meanwhile, the move to the new Surrey campus was completed in the summer and the building was opened this past September.

Okanagan College

The big news from Okanagan College is the expansion to offer third and fourth year courses in conjunction with the University of British Columbia. Graham Bruce reports from the Kelowna Campus on the drive to introduce upper level courses: "This has required hiring of new faculty, spending lots of money on new equipment (unlike Ogoopogo an n.m.r. has definitely been sighted) and now we are at the design stage of a new campus. With all the changes and challenges being experienced the "old" faculty are definitely exhibiting a more spritely spring in their steps. Work is exciting again!"

Graham adds that he hopes that this "Access" initiative is not a political ploy and they will be favoured with both continued growth and support. (We tend to mistrust the B.C. Government after years of squeezing the college system). Graham applauds the Faculty of U.B.C. in being "extremely supportive of our developments, we could not have asked for better co-operation".

Ruth St. John writes from the Penticton Campus with overlapping news of this new

initiative in which Okanagan College will be giving third and fourth year inorganic, organic, physical and biochemistry in 1990/91 leading to a B.Sc. degree which will be granted by U.B.C. Ruth states, "Our numbers are growing (both student and staff) and Graham Bruce, our Department Chair, is doing an excellent job co-ordinating the chemical aspects..."

Other Okanagan people include Peter Knoess, who is getting ready for a leave next year at Ann Arbor, Michigan, Don Furman and Rosemary Capell, who plan to attend the Capiliano College conference. Our long-time C3 member David Woodcock, from the Vernon Campus related some sad news at the recent B.C. Articulation Meeting: he finally had to retire his old Volvo (not because of a lack of tread - what a pun!) but because the bodywork had rusted out around the headlight and was irreparable. Now Dave has to run around in an underpowered Japanese import!

Selkirk College

With the current high awareness on safety and hazardous materials, an amusing report comes from Gordon Gray:

"Now that the semester is over and the faculty has a nice new working contract, the major activity in Selkirk's chemistry department is that of cleaning up our act - that is our labs. About four weeks ago a report was sent to the Workers Compensation Board by one of our maintenance staff concerning the storage of picric acid, along with other chemicals, in an out-building that they also use to store gas and oil for their tractors, etc. Shortly thereafter, the College was swamped by WCB persons, the RCMP bomb squad, the local and airport fire departments, and I'm not sure who else. The nearby parking lot was cleared for about 100 metres around the building and the offending chemical was removed - carefully!

"That event lead to further suggestions (threats) by the WCB that we remove all "dangerous" chemicals from our storage areas. That lead to the College hiring a "man from WHMIS" to provide advice and to give workshops on the new Workplace Hazardous Materials Information System legislation. He surveyed every region of the College that uses chemicals - from chemistry and biology to

hairdressing and fine arts as well as the support areas including maintenance, the secretarial pool and the cafeteria.

"Our chemistry labs have, over the years, "inherited" many chemicals from outside sources, mainly the defunct Notre Dame University and David Thompson University Centre campuses as well as some old mineral analysis labs. After three hectic weeks right at final exam time, the chemistry area has disposed of all of its really hazardous materials (e.g. several old bottles of isopropyl ether that could explode from peroxide formation) and reviewed the complete inventory, discarding materials that haven't been used in years and have no foreseeable use. Consequently, we have reduced our inventory by over 60%, we no longer have a storage problem and there are a lot fewer bottles to relabel with proper WHMIS labels. The discarded chemicals are to be removed from the College by some Vancouver company that will, I think, ship them to a disposal facility in Ontario.

"We now plan to create a new computer based inventory that will also contain the Material Safety Data Sheets (MSDS) on each chemical. With that in mind, I would like to ask if anyone out there knows of such a program - preferably for an IBM-PC and one that uses the IUPAC naming system? I'm sure that other colleges across the country have, by now, come up against WHMIS. A couple of years ago Jean Allan from Douglas College wrote an article for C3 News about their WHMIS related problems. Perhaps C3 News could become a source of solution ideas and/or references to information dealing with this legislation. The safety workshop at the C3/2YC3 Conference should be interesting."

An interesting story...one is tempted to play the Devil's advocate and pass the comment that here is another case of public paranoia, but of course, anything that might produce peroxides is well worth getting rid of. Why not take Gordon up and submit problems/concerns/solutions about WHMIS related aspects? Not only will this information be gratefully appreciated by Gordon and lots of others, but it will also provide our Editor with more copy!! ☐

Goodbye Fax, Hello E-Mail

By Bob Browne
Douglas College

One of the problems facing a small organization such as ours which is stretched over a large geographic area, is communications. Technological changes over the past few years are making major changes in the way we communicate. Alan Davis tells me that he couldn't live without his fax machine and we have both found that people tend to respond more quickly to fax messages than to traditional mail. (right Gary Wilson?).

It is my contention, however, that fax is a transition technology; that is, it is bridging the gap between the traditional mail and true electronic mail. Just think of what is involved in sending a fax message: the message is typed on a word processor, printed, and the hard copy fed into a fax machine which scans the page and converts it to a stream of electronic beeps which are sent over a phone line. The receiving fax machine converts the incoming signal back into the page image and prints it out on a thermal printer. How much simpler to just address the message from the original computer to another computer and send the message directly. The problem of course is that not everyone has a computer to receive the message...yet.

There has even been a marriage of sorts between the fax and the computer, as a kind of intermediate solution. Many companies make fax boards which plug into a slot inside a computer and will dial the number at any preset time (usually in the middle of the night when phone rates are cheaper) and send your message to a remote fax machine. Receiving a fax message on a computer is not quite so straightforward and at present is best left to the fax machine. Many manufacturers of modems, the hardware which permits computers to communicate over phone lines, are now bundling fax software along with their hardware. So the fax machine and the computer are coexisting at the present time, more as a matter of convenience.

I'm predicting that the days of the fax machine are numbered (sorry Alan). Declining prices may allow it to find its way into the home market, but larger institutions will be

using true E-mail within five years. What has slowed its acceptance has been the lack of a standard protocol, the rules by which data is received and sent, and mail is addressed and routed. There seems to be one emerging, the international CCITT X.400 standard, but its acceptance has been slow in coming.

In Canada, we are especially lucky because Canadian universities have been leaders in the development of this technology, and as a result there are already a number of existing networks for electronic mail, including CDNNET (the CandDian university mail NETwork) and BITNET, an international university network linking well over 2000 host computers in North America, Europe and Japan. B.C. Colleges even have their own network (.bc) which is a branch of CDNNET.

How can you gain access an E-Mail network? The best place to start is with your college's computer manager. You might be surprised at what you can do with hardware and software already in your college. I found that at Douglas, the administration had been using external e-mail for some time, but lack of demand from faculty (because we didn't know it existed) meant that information about it never filtered down to the faculty level. All that was needed was a link to our mainframe computer, and I was connected to the outside world. An alternative to using your college's mainframe, if you are near a university and have a modem, is to get an account on the university computer and access it by phone.

You (or your college) may have to pay a nominal charge for terminal time, but it doesn't amount to much if you only use the message system. And here is the best part...you can send messages anywhere in the world for no charge (to you).

So what would I like to see in the future for C3? I would like to see more of us (especially executive members) linked by E-Mail. I would like to be able to send a notice of an upcoming conference to every member of C3 simply by addressing E-Mail to our distribution list; I would like to see a conferencing system (electronic bulletin board) which could be used by members to discuss topics of interest to chemical educators, and most of all, I'd like to get articles for the *C3 News* electronically. An on-line version of the newsletter could even be published to eliminate mailing altogether. Does all this sound too futuristic? I belong to an organization within the college system in BC which does all of this right now. The technology is all there, and has been for some time. If we are truly an organization which purports to link college chemistry educators "from C to C" as Gary Wilson puts it, we really should get into the modern world.

By the way, if any of you would care to try this out, I can be reached on BITNET at Bob_Browne@ubcmstg or on CDNNET at browne@douglas.bc.ca. Try it, you'll like it!
□

1991 CSC Conference

74th Canadian Chemical Conference and Exhibition, sponsored by the Canadian Society for Chemistry, will be held at the Hamilton Convention Centre, **June 2-6, 1991**, in Hamilton, Ontario. For general information about the conference contact Mrs. Thérèse Fearon, Program Manager, Canadian Society for Chemistry, 130 Slater Street, Suit 550, Ottawa, Ontario, K1P 6E2, Canada.

tel: 613-232-6252

fax: 613-232-5862

e-mail: cscxt@uottawa

College Commentary

Not Enough Attention Paid to Science and Technology

By Gary Wilson
John Abbott College

That's what Quebecois think, according to the University of Québec and Montreal¹. The researchers sampled the perceptions of the people from across the province and made some interesting discoveries, some predictable from a teacher's perspective, some not.

Fewer than one in ten respondents felt that they kept themselves regularly informed concerning scientific issues.

More than 50% of Quebecois consider that there is too little scientific information in the media.

More than two thirds think that the provincial government spends too little on scientific and technological research.

Francophone Quebecois believe that more must be spent on research into health and environment issues while anglophone Quebecois support more technology research.

About 60% of the respondents would favour an increase in the number of hours spent in the teaching of the sciences, *even if this resulted in spending less time teaching other subjects.*

Regarding the first conclusion, television appears to be the prime source of scientific information (surprised?) with 44% of the respondents regularly or occasionally following series such as *Nova*. Our teachers must

therefore be aware of what is being broadcast. Can you use it in your classrooms? A real surprise is that the second main source of information (40% of respondents) is through discussion with family and friends. This is frightening! Draw your own conclusions about how science "rumours" begin. The newspapers provide the next largest audience (38%) highlighting the critical need to increase the scientific literacy of our writers. Only 29% read publications such as *Scientific American* regularly or occasionally (seems high to me) and radio draws a 10% bottom. Thus, if you wish to get your educational material across, radio is not the medium of choice.

Given this data, recognise that respondents had definite opinions about a number of scientific issues. 47% believe that science and technology have caused either many or most of our modern day problems and only 51% believe that science has done more good than bad. At the same time, 90% believe that science and technology has added to our material comfort and 86% believe it has improved our quality of life. Does this seem an internal contradiction? Watch David Suzuki!

Opinion is evenly divided on the contribution of science to world peace:

86% believe that pollution is a bigger problem than it was ten years ago.

77% don't want nuclear power.

89% consider reductions in acid rainfall to be important.

79% think that we must stop use of chemical fertilisers, even if it means a reduction in food production. Pay attention to this one folks! Where did we go off the rails?

60% want more of our educational hours spent on science. It is obviously needed. It also highlights the absolutely critical work that our science teachers are doing. Give our students a good science education, and insist that they learn it.

The report, a 180 page document was sent to me by the Société pour la Promotion de la Science et de la Technologie. It is published in French. If you wish a copy I'm sure they would send you one if you write to them at 4545, Avenue Pierre-de-Coubertin, C.P. 1000, Succ. M., Montreal, Quebec, H1V 3R2. I have included only a few of the results. There are a number of other interesting data available as well.

We have a lot of work to do folks! Be careful out there.

¹ Fillatrault, Pierre and Ducharme, Jean. *Le développement des sciences et de la technologie au Québec: Perceptions de la Population (Québec: Association canadienne-française pour l'avancement des sciences, 1990).* □



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