STC NEWS/NOUVELLES

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Would you like to help the STC?
There is an opportunity to serve on the STC Board.
Find out more about this opportunity.

*The latest information about the **STC 33rd Annual Symposium** on December 7 and 8, 2000, is **here**.*

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FROM THE EDITOR'S DESK

Michael Prior

WHEN IS A ROSE NOT A ROSE?

My wife is dyeing today, so we must be careful not to put toxic chemicals down the drain into the septic tank, and thus poison the bacterial processes which reduce everything to a odourless porridge. Of course, if we really wanted an odoriferous porridge, we could try iSmell who advertise a hardware peripheral that selectively heats scented oil cartridges in exact combinations to produce specific odours. Rather like the principle of my ink jet colour printer. Apparently one will be able to download smells from the Internet, then "play" them with your iSmell device. Will have to watch what aromas we "make", since gardenias and orange blossoms both have attractive aromas, but when placed together in the same bouquet, neutralize each other's odour with the result that there is no smell at all.

The reference to ink jet printers reminds me of patent #5970300 by Xerox. Xerox has developed an apparatus that applies scents to paper in a printer or copier. In addition to printing images onto sheets, this new printer has a conditioner that adds odour to selected images of a job [1]. For example, you could add your own scratch and sniff to any document. In theory, you could insert a picture of a rose in your presentation to the Board, Grant Committee or whomever, and, using this technology, your document will make your presentation come out smelling of roses. Two researchers at the Weizmann Institute have built a prototype which encodes and transmits information about smell through existing electronic media. Their strategy was to use an olfactory sensor to mathematically measure every odour and transmit it as an algorithm to the emitting device, called the SenseIt. This triggers the release of the right mix of chemicals which imitate the real smell. The chemicals are held in cartridges like those found in inkjet printers [2].

Talking of red roses, for love of course, one study found that a majority of women unconsciously choose mates with a body odor that differs from their own natural scents, which, as a result, ensures better immune protection for their children. To offer our readers a challenge, sensitivity to androstenone (a boar pheromone) in human females is associated with a stronger brain response to

human male body odour [3]. Might this mean that men really are pigs?

The roses in our garden are very different from their ancestors, thanks to the efforts of many plant breeders. In the eighteenth century, a nurseryman and plant breeder called Thomas Fairchild was troubled that his work tampered with the divine order of a world created by God. His misgivings have an echo in the criticisms of genetically modified foods and crops today. He left money for a sermon to be preached annually at St Leonards Church, Shoreditch, in the East End of London, on one of two topics: "The Wonderful World of God in the Creation" or "The Certainty of the Resurrection of the Dead proved by the Certain Changes of the Animal and Vegetable Plants of the Creation". His bequest was an expiation of his sense of guilt. He would have been relieved to know that the sermons are still preached today [4]. Echoes of concerns expressed by Don Ecobichon in his column in this issue, and of a major topic at the STC 33rd Annual Symposium on December 7th and 8th, 2000.

That caution about toxic chemicals in the septic tank applies also to chlorine, pesticides, herbicides, cadmium and other pigments, silver and other photographic agents, etc. Not only may these kill the bacterial action, but could seep from the septic field onto other people's property, poison wells, etc. Sometimes, when tracking down an environmental toxicant in the field, I used to dream about that little gizmo from Star Trek. The one used when Captain Kirk requests a "sensor reading" and gets information on the chemical makeup of the planet's atmosphere and surface. Researchers at Purude University may be bringing this "Star Trek" technology to Earth by developing a new tool that can be used to chemically analyze a wide variety of materials in real time. They have developed a Near-Infrared Imaging Microscope which uses laser light to analyze composite materials thousands of times faster than current methods. Instead of saying this is a piece of plastic, it says this is a piece of plastic made of high-density polyethylene [1].

We will be changing our Canada Post mailing address very soon, as we are moving from a postal compartment into a real house, just like all you city dwellers! Had a problem with another address system recently, this time an unplanned one. Microsoft (Windows 95) and Corel (WordPerfect v8) decided to fight it out in our Compaq, and we lost our spell checker for a while. Is that how a gene feels when it is switched "off"? Genes are a type of address of where instructions reside, and Glaxo Wellcome is hoping to genetically screen patients to weed out those who cannot benefit from drugs. Within two years they want to market their drug Ziagen™, a newly licensed anti-HIV treatment, in tandem with "DNA chips" - which are small disposable blocks which, when treated with a drop of the patients blood, will show whether he or she is genetically able to respond to Ziagen [5]. One could imagine carrying an intelligent card bearing one's DNA profile, in order that pharmaceuticals can be prescribed to avoid adverse reactions and to improve efficacy.

A neat idea, one that some garment manufacturers might recognize. No, they aren't into DNA profiles, but soon one could have a 3-D body scan with every possible measurement precisely quantified. This is effected by using using a body measurement system developed by TC2. Carry this on an intelligent card, and it becomes very useful when choosing clothes - the fit is guaranteed, provided one hasn't subsequently changed shape or weight of course. According to a recent book, it would transform the apparel and textile industries [6]. So maybe we can look for a similar transformation of the pharmaceutical industry. In the unlikely event of a fatal adverse drug reaction, someone might use that intelligent card to order up a tailor-made shroud...

This week our local MP sent us his newsletter with the results of the opinion poll from the previous issue. A challenging read! It illustrates why we, as toxicologists, can have so much difficulty explaining risk and hazard. For example, 66 per cent of respondents to the opinion poll want to bring

back capital punishment. Yet Canada's homicide rate has declined since this was abolished in 1976 [7, 8]. Will our MP ignore the facts and go with personal opinions? That's why risk communication can be such a challenge, the facts just getting in the way of opinion. Recently, we had a minor local concern about hydrogen sulphide - people didn't like the smell of rotten eggs - and "everyone" knew this was a lethal gas. The fact that if one could smell the gas, one was not likely in serious danger though perhaps wise to move away from the area, was totally ignored. The same problem occurred in a public discussion of depleted uranium, which one "expert" declared to be non-radioactive. Not that we are an opinionated. bunch on the Coast, we just prefer smelling roses to sewage!

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NOMINATION AND ELECTION OF STC COUNCILLOR

Len Lillie, Past President STC, Parke-Davis Research Institute, 2270 Speakman Drive, Mississauga, Ontario L5K 1B4 Canada. E-mail: Len.Lillie@wl.com

Please send nominations for the following position as soon as possible to Len Lille (Past President and Chair of the Nominating Committee).

Councillor : during a three-year term of office, the Councillor participates in meetings of the Board of Directors, providing advice and counsel, acts as liaison with specific committees as directed by the President, updates the STC Orientation Guide and Policy Manual (for one year) and is a member of the Awards Committee (for one year). In addition, the Councillor may be assigned a specific task by the President to assist in the management of the Board. This year we are particularly looking for nominations from the industry sector.

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FROM THE DESK OF THE PRESIDENT

Heather Durham

Happy Spring! I've been on the road so much the last couple of months that I've experienced several springs around the continent - from Tucson to Philadelphia to Medicine Hat. Having spent last weekend in Victoria BC helping friends with their gardening, I'm all enthused to get to the garden centre and do the planting on my terrasse here in Montreal. My farm upbringing requires that I occasionally get back to the earth. This would be an interesting study in gene expression.

The members of the STC Board and Committees have been busy over the last few months. The program committee, chaired by Genevieve Bondy, is just putting the final touches to the program for December's symposium (see the outline in this newsletter). The themes to be covered on December 2nd and 3rd are natural food contaminants, herbal product safety, and genetically modified foods. These topical issues are of concern to everyone, so it is a good chance to update our knowledge. I encourage you all to attend, to participate, and to have a great time in Montreal.

The ICTXI bid committee has been very active to prepare for the presentation of our bid to host the 2007 meeting in Montreal. STC had an exhibit booth at the SOT meeting in Philadelphia. We had fun doing this and found it an excellent learning experience. Although the purpose was to promote our bid, it also was a venue to promote STC. Many attendees who stopped by were very interested in the existence and activities of our Society. Our booth was next to the folks from Australia who were promoting next summer's ICT in Brisbane, where we shall present our bid for ICTXI. My only regret is that I didn't win one of the hats in their draw! Members of the core ICTXI committee also met at le Palais de Congrès before our spring STC Board meeting. Our plans are on track and we'll keep you informed. If you are attending a conference related to toxicology, particularly Eurotox or Asiatox, please let us know so we can engage your help in promoting Montreal to IUTOX voting delegates.

The STC Board met on April 16. ICTXI and the December annual symposium were the big items of discussion. Updating of the expertise list and finding ways to increase participation of students and postdoctoral fellows were identified as new initiatives.

With respect to MRC/CIHR, Bill C-13 passed through the senate on April 6, 2000 and received royal assent on April 13. This paves the way for CIHR to become operational. According to the web site (http://meds.queensu.ca/stcweb/(www.cihr.org), The Interim Governing Council subcommittee on institute design will submit their final report in June. It is anticipated that the IGC's final recommendations on the creation of CIHR institutes will be forwarded to the Minister of Health in the spring in order to provide advice to the future Governing Council on the identification of CIHR Institutes. We shall have to keep pushing for toxicology at both the Institute level and in the composition of peer-review committees, so we'll remain vigilant for appropriate times to add our two cents.

Congratulations Canadian recipients of SOT awards at the meeting in Philadelphia! Jeffrey Card, Queen's University, was awarded the highly competitive Procter & Gamble Graduate Fellowship. Sonja Kasapinovic (University of Toronto), Andrew Tam (Queen's University), and Jon Seubert (UWO) received Graduate Travel Awards. Winnie Jeng was awarded a Burroughs Wellcome Fund Graduate Travel Award. Well done!

STC committees: For your information, the members of the various STC Committees are listed below. If you are interested in participating, please don't stand back - let us know. We are particularly in need of volunteers for the symposium committee to assist the Executive Director with the local

organizing and various activities during the 2 days of the symposium. This could be anything from helping at the registration desk, organizing audiovisuals, poster presentations, whatever. Otherwise, we shall have to clone Gordon. Roger Keefe has volunteered to re-establish an active science policy committee. This is an extremely important area of activity, so please discuss your concerns and get involved. At the present time, there is no representative of the government sector on the committee and volunteers are solicited who would not see their participation to be in conflict of interest.

Standing Committees

Membership Committee

- *Malle Jurima-Romet (Chair) (3 yrs to Dec 2002)*
- *Randy Leeder (3yrs to Dec 2002)*
- *Mark Goldberg (2 yrs to Dec 2001)*
- *Harpal Buttar (1 yr to Dec 2000)*
- *Executive Director - Gordon Krip*
- *Treasurer (ex-officio) Michel Charbonneau*

Scientific Program Committee

- *Genevieve Bondy: government (Chair) (1yr to Dec 2000)*
- *John Clement: industry (2 yrs to Dec 2001)*
- *Gordon Kirby: academia (3 yrs to Dec 2002)*

Nominating Committee

- *Chair (Past President) Len Lillie*
- *2 members selected at AGM: Jeff Kawamoto and Laurie Chan (1 yr to Dec 2000)*

Appointed Committees

Editorial/Newsletter Committee

- *Michael Prior (editor) (3 yrs to Mar 2003)*
- *Gordon Krip (publisher)*
- *David Josephy: Academia (1 yr to Mar 2001)*
- *Rehka Mehta: Government (2 yrs to Mar 2002)*
- *Elizabeth Williams: Industry (3 yrs to Mar 2003)*
- *Dino Manca: French language/industry (3 yrs to Mar 2003)*

Symposium Committee

- *Executive Director (Gordon Krip)*
- *Corporate Fund Raising (Jon Daniels)*

Awards Committee

- *Chair (Past President) Len Lillie*
- *Councillor: Suzanne Desjardins*
- *two non Board members are nominated as required for evaluation of (1) Henderson award and*

Award of Distinction and (2) student poster awards

Science Policy Committee*(Jan - Dec)*

- *Chair: Roger Keefe (3 yrs to Dec 2002)*
- *Geoff Granville: Industry*
- *Stelvio Bandiera: Academia*
- *Board Contact: President - Heather Durham*
- *Government: ?*

Education Committee

- *adhoc according to specific issues identified by the Board.*

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- *Core committee: Len Lillie (Board Liason), Gaston Chevalier, Doug Arnold, Heather Durham, Gordon Krip, Alain Carbonneau (Palais du Congres), Laurier Forget (NRC), Rekha Mehta (Health Canada)*
- *Larger committee also includes: STC board of directors, Gail Bellward, George Cherian, Don Ecobichon, Barbara Hales, Gabriel Plaa, Bill Racz, Bernard Robaire*

I wish you all a great summer and good health.

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VIEW FROM MY CANOE

Don Ecobichon

While the canoe is still high and dry, I took the opportunity to drive down to the SOT meeting in Philadelphia in March, making it a bit of a holiday for Betty (she needs to get de-bushed once in awhile) as well as seeing the sights: Independence Hall, the Liberty Bell, Court House, and the old part of the city with interesting streets and homes. It was a great meeting, with a number of good symposia, workshops, issue sessions, and poster sessions held in a marvelous venue. The Conference Centre was converted from the old Pennsylvania railroad station in downtown Philadelphia. What a magnificent building and what a way to rejuvenate the centre of the city. It was pleasant to meet old friends and colleagues as well as

talking to new people. STC's booth for the 2007 IUTOX bid was busy and well staffed throughout the meeting. We were placed beside our Australian colleagues who are hosting the next IUTOX meeting (2001) in Brisbane, so we learned all about what we are letting ourselves in for. Lost of new books on toxicology and risk assessment (popular topic) from various publishers. Still lots of amalgamations of various exhibitors into larger companies. At the end, being something of a Civil War buff myself, we took the opportunity to visit the Gettysburg Memorial Park and the environs of rural Pennsylvania on the way home.

*A catch-22 situation has developed in the USA, with the National Institutes of Health (NIH) doubling the budget over the past five years for AIDS vaccine research, a concomitant severe shortage of Indian rhesus macaque monkeys, and at a cost, if you can find them, of US$5,000 today (up from $2,000 in 1987). This strain of macaque monkey develops a disease similar to human AIDS when infected by SIV, making it an ideal model to study the success or failure of vaccines being tested. India banned the exportation of this animal in 1978. NIH is phasing out the domestic breeding program for SPF animals. The imbalance between supply and demand has resulted in delays of up to a year or more before suitable animals can be obtained. One specific strain has a genetic marker on white blood cells known as Mamu-A*01, a critical component of the immune system killer cells [1]. The National Center for Research Resources will be soliciting new proposals for breeding monkeys but, since the funds cannot be used for new housing or the necessary infrastructure to support such programs, the supply of acceptable monkeys will not increase significantly.*

What sort of genetic material is patentable? In a recent news report [2], an astonishing graph is shown concerning the number of patents issued on genetic sequences, approximately 100 in 1988 and some 2,700 in 1999. The US Patent and Trademark Office (PTO) has proposed a policy that will raise the bar for patent applications on DNA, possibly rejecting many claims. In contrast to earlier approaches where scientists began with a known protein and worked backward to the encoding gene, the current approach has involved identifying scraps of DNA, called expressed sequence tags (ESTs) with little known about them except that they appear when some gene is switched on in the body. The PTO has decided that patent applications must demonstrate a more "substantial real-world utility (usefulness)". Many of the EST applications may have difficulty meeting the guidelines published December 21 in the Federal Register.

The European Commission has proposed a number of new measures in an attempt to circumvent the existing problems of 15 member states all with the own food agencies, agendas and criteria. Remember the UK beef ban in France, the dioxin-contaminated poultry scare of a few months ago, etc? The Commissions suggests forming:

1. *a European Food Authority, with its own research budget and staff,*
2. *a larger scientific secretariat for the Commission's science panel,*
3. *a strengthened, rapid alert system for food safety problems,*
4. *a system for rapid identification of scientific experts in the EU to help with food safety research, and*
5. *stronger links between the new Food Authority and national agencies.*

The proposals must be approved by the European Parliament and the EU member nations.

Genetically modified (GM) foods have come under scrutiny of biotech watchdogs in the past few years and a new product has come into focus. The Monsanto Corp has applied to the US EPA for approval to field-test and sell a new line of GM corn carrying a bacterial gene from Bacillus thuringiensis that produces a toxin that kills corn rootworms (actually the larvae of three related beetle

species) which infest all of the 30 million hectares of corn planted annually in the USA [3]. Control can be obtained by crop rotation but insecticides are applied to 5.7 million hectares where rotation is not practiced, costing farmers $200 million annually, about one-fifth of the total spent on insecticides for all crops in the USA. The GM corn would markedly reduce chemical pesticide use because the toxin, from B.t. tenebrionis is different from the toxin in the GM corn resistant to European corn borer. Public interest groups are urging EPA to reject the application unless Monsanto proves that

1. *the product is not toxic to species of beneficial beetles (ladybirds, etc),*
2. *the toxin breaks down in soil,*
3. *it does not harm soil organisms, and*
4. *the technology does not lead to the development and spread of Bt-resistant corn rootworms.*

The Experimental Use Permit could be granted soon but decisions to allow marketing would have to await the results of field testing.

Methyl-t-butyl ether (MTBE) has come into prominence again. Having been championed by th US EPA as the additive (oxidant) to insure cleaner burning of gasoline in automobiles, the State of California (Cal EPA) has banned its use because of its appearance in drinking water supplies and in such pristine areas as Lake Tahoe. Not surprisingly, since MTBE is highly water soluble and "escapes" from gasoline, partitioning into water before the appearance of gasoline components. One morning at the SOT meeting I walked over form the hotel with a scientist from EPA and was commiserating with him that they would now have to ban their pet chemical. His claim was that one hand of EPA (Air quality) did not know what the other hand (chemical analysis) was doing. Sounds familiar! Interestingly, MTBE is a "new" pollutant, only a few years old, and its discovery in environmental groundwater in many places in the USA signifies that underground storage tanks have been leaking foe some time, perhaps years, and have gone undetected. While not used in Canada, I encountered this chemical in gasoline-contaminated water in New Brunswick when I was doing some work for the provincial Department of Health, the source being one petrochemical company who was manufacturing gasoline for the east coast US market but distributing some of the product in eastern Canada. The sad part of the EPA story is that, despite the glowing reports of smog reduction in test cities, MTBE in gasoline appears to have had little impact, the improvement in smog levels being attributed now to better combustion engines in new cars.

Casting back to patents and patentable "things or ideas", I received a magazine from my investment company in which they present some interesting data on "what is a patent" and also reviewing a book by Seth Shulman [4]. I have not read this book as yet but have ordered a copy. Did you know that in 1982, manufacturers claimed that 62 per cent of the companies' value consisted of factories, property and equipment, the remaining value lying in proprietary knowledge. By 1992, the opposite was true, physical assets accounting for only 38 per cent of the value, knowledge assets being the rest. Shulman's book describes the battles to control new assets - genes, software, databases, GM foods and technological know-how. I leave you with this thought - Shulman claims that the rush to patent intellectual property threatens to kill research and development. By putting more knowledge into private hands, where it is available only for a price, we severely hamper the free spirit of researchers who would use that discovery as a stepping stone to further revelations and also interfere with the free exchange of knowledge.

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L'UTILISATION DU MMT DANS L'ESSENCE AU CANADA: ENJEUX ENVIRONNEMENTAUX ET DE SANTÉ PUBLIQUE

Fadlallah S, Ph.D et Zayed J, Ph.D TOXHUM (Groupe de Recherche en Toxicologie Humaine) et Département santé environnementale et santé au travail, Université de Montréal, Faculté de médecine, C.P.6128, Succ. Centre-ville, Montréal, Québec, Canada H3C 3J7

Methylcyclopentadienyl manganese tricarbonyl (MMT: $C_9H_7MnO_3$) is an organic derivative of manganese used in Canadian gasoline. Since its introduction in Canada in 1976, the use of MMT increased substantially until it completely replaced tetraethyl lead in 1990. Combustion products of MMT are mainly a mixture of Mn phosphate and Mn sulfate. In 1997, the Canadian federal governement adopted a law (C-29) which banned both the interprovincial trade and the importation for commercial purposes of manganese-based substances, including MMT. Even after several years of intensive use of MMT in Canada, many uncertainties remain. These are discussed in this overview prepared by Sami Fadlallah and Joseph Zayed of the Université de Montréal.

Le méthylcyclopentadiényle manganèse tricarbonyle (MMT: $C_9H_7MnO_3$) est un dérivé organique du Mn utilisé dans l'essence afin d'en augmenter l'indice d'octane. Produit aux États-Unis, il est importé, mélangé et distribué pour la vente aux raffineurs Canadiens. Bien qu'on ne l'utilise pratiquement pas aux É-U, le Canada l'utilise presque exclusivement, en particulier depuis 1990, alors que le plomb était totalement retiré de l'essence. Néanmoins, en mars 1997, le gouvernement Canadien adoptait la loi C-29 qui interdisait le commerce interprovincial du MMT et son importation à des fins commerciales. C'est alors que Ethyl Corp. (entreprise produisant le MMT) et plusieurs gouvernements provinciaux entreprenaient des procédures légales qui ont mené le gouvernement fédéral à lever les interdictions et à conclure un accord avec Ethyl Corp. Aujourd'hui, la communauté scientifique est partagée sur l'interprétation des données relatives aux impacts du MMT sur l'environnement et à ses effets potentiels sur la santé publique.

Le programme de recherches que nous avons entrepris il y a environ une dizaine d'années visait à documenter le niveau de contamination environnementale et à évaluer le risque potentiel sur la santé associé à l'utilisation du MMT dans l'essence. Nous présenterons de façon succincte les principaux résultats que nous avons obtenus en y ajoutant quelques informations additionnelles:

1 Évaluation du niveau de contamination environnementale et de l'exposition humaine au MMT

Très peu d'études ont évalué les concentrations atmosphériques du MMT. À Montréal (Zayed et al. 1999, NeuroToxicology) les concentrations obtenues dans différents micro-environnements variaient de 1,8 ng/m^3 à 25 ng/m^3 (éq. Mn). La valeur la plus élevée a été obtenue dans une station service

(moyenne de 12 ng/m^3). Ces résultats sont 18 à 83 fois supérieures à ceux établis dans des environnements similaires il y a environ une vingtaine d'années. L'évaluation de l'exposition de préposés aux pompes dans une station service a été subséquemment réalisée. Les niveaux variaient de 0,3 à 10,8 ng/m^3 (Keiloum et al., soumis)

2 Évaluation des émissions d'oxydes d'azote (NOx) et de monoxide de carbone (CO) associées à l'utilisation du MMT

La première étude réalisée en cette matière est celle de Lenane et al., 1994 (Sci. Total Environ.). Les résultats indiquent des émissions de CO semblables pour les autos roulant avec ou sans MMT. Quant aux émissions de NOx, les autos roulant avec du MMT dans l'essence rejetteraient environ 20% en moins. Les résultats que nous avons obtenus montrent deux fois plus d'émissions de CO pour les autos roulant avec du MMT dans l'essence et 18% de plus pour les NOx. Les différences obtenues ne sont toutefois pas significatives (Zayed et al. 1999, Water, Air & Soil Pollut.)

3 Caractérisation de la nature chimique des émissions de Mn et appréciation de leur contribution à l'augmentation des concentrations atmosphériques ambiantes

Les premières études sur les produits de combustion du MMT indiquaient que les produits de combustion du MMT étaient des oxydes de Mn, essentiellement du tétraoxyde de Mn ou hausmannite Ter Haar et al., 1975 (JAPCA). Plus récemment, des études révélaient que ces émissions sont plutôt des particules de phosphate et de sulfate de Mn, dont la taille varie de 0,2 à 10 (m (Zayed et al. 1999, Environ. Sc. Technol.).

Quant aux taux d'émissions du Mn utilisé, ils varient 6 à 45 % du Mn ajouté dans l'essence (Ardeleanu et al.1999, Water, Air & Soil Pollut). Par ailleurs, les sols, les plantes et les animaux présentent des concentrations supérieures lorsqu'ils sont prélevés en bordure de routes et les concentrations moyennes de Mn diminuent en fonction de leur distance des routes (Zayed et al. 1999, Int. Arch. Occ. Environ. Health). Cependant, il a été jusqu'à maintenant impossible de distinguer entre le Mn émis par la combustion du MMT et le Mn d'autres sources.

4 Évaluation du niveau de contamination environnementale au Mn, de l'exposition humaine et du risque potentiel sur la santé publique

Plusieurs études ont permis d'évaluer le niveau de contamination environnementale et de l'exposition humaine au Mn. À Toronto, la médiane relative aux concentrations atmosphériques $PM_{2.5}$ est de 0,008 (g/m3 (Lynam et al. 1999, NeuroToxicology), alors qu'à Montréal les valeurs obtenues sont généralement inférieures à la valeur limite recommandée par l'US EPA RfC 0,05 (g/m^3 pour le Mn respirable. Néanmoins, les concentrations atmosphériques sont plus élevées que la RfC dans certains micro-environnements caractérisés par une forte densité de trafic (Zayed et al., 1999 NeuroToxicology). D'ailleurs les estimations par modélisation permettent d'établir que la contribution des émissions de Mn de source MMT au « bruit de fond » sont de 50 % à 25 m de distance d'une route et de moins de 8 % à 250 m de distance (Loranger et al. 1995, Atmos. Environ.).

Plusieurs désordres neurodégénératifs similaires à ceux de la maladie de Parkinson ont été associés à l'exposition à de très fortes concentrations de Mn et de récentes recherches établissent une relation entre l'exposition par inhalation au Mn et les signes et symptômes neurologiques chez la population active. Cependant, nous ne connaissons pas encore les effets potentiels associés à une exposition chronique à faible dose.

Information toxicologique requise

- *Considérant l'absence de valeur de référence pour le MMT et le peu de données toxicologiques, il est difficile d'apprécier les niveaux de MMT obtenus. Des études toxicologiques sont requises à cette fin;*
- *des études complémentaires sont requises pour clarifier l'incertitude relative aux taux d'émissions de CO et de NOx associés avec l'utilisation du MMT dans l'essence;*
- *des travaux additionnels devraient être réalisés pour déterminer le devenir environnemental du Mn utilisé mais non rejeté par l'automobile;*
- *des travaux sont requis pour la quantification in situ de la contribution du Mn de source MMT aux concentrations atmosphériques ambiantes;*
- *l'exposition de certains groupes de la population, comme les personnes résidant à proximité d'autoroutes, mérite d'être évaluée;*
- *Les connaissances scientifiques actuelles sont insuffisantes pour documenter la question spécifique du risque potentiel sur la santé publique associé à une exposition environnementale chronique au Mn et un consensus semble improbable à court terme.*
- *Les études toxicologiques futures devraient être axées vers la voie respiratoire pour la détermination des effets neurotoxiques chez des populations sensibles, notamment les personnes âgées et celles avec des dysfonctions hépatiques.*

Travaux présentement en cours à notre laboratoire

- *Évaluation de la neurotoxicité du phophate de Mn, du sulfate de Mn et du mélange phosphate/sulfate de Mn à la suite d'une exposition subchronique par voie respiratoire. Durée : 3 ans.*
- *Évaluation de la neurotoxicité du phosphate de Mn chez des rats avec anastomose portacave exposés par voie respiratoire. Étude pilote.*
- *Évaluation des niveaux de contamination de l'air par le manganèse et le MMT dans le métro de Montréal. Étude pilote.*
- *Quantification de la contribution du Mn de source MMT aux concentrations atmosphériques ambiantes. Étude préparatoire.*

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SCIENTISTS CAN NOW "SEE" SMELL

There's a great line in Ghostbusters where one of the characters says: "Listen... do you smell something?" Well now, those mixed senses are becoming a reality. Using a high-resolution video technique on laboratory rats, neurobiologists at Duke University have captured the first detailed images of the living brain in the act of recognizing specific odor molecules. The scientists say their achievement will open the way to deciphering the brain's internal "language" of smell. The scientists recorded images of the rats brain as they were exposed to chemical odorants that smelled like bananas, spearmint, and peanut butter. Even more exciting, scientists say they've tested their discovery on other mammals and found the same kind of reaction. They believe in the future this new visualization system can help us understand the machinery of the learning process [1].

Unfortunately, most people by the age of sixty have lost 50 percent of their taste buds and 40

percent of their ability to smell.

Do you remember those stereo systems of yesteryear which had a display on the front in which multi-colour columns of light danced up and down whilst sound was coming out of the speakers? Most distracting when listening to classical music. And now we can do the same thing for smell. Oh well! The wonders of progress!

Reference

Tod Maffin's Future File

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SOCIETY OF TOXICOLOGY OF CANADA (STC)
33rd Annual Symposium

Emerging and Topical Issues in Food and Herbal Product Safety

December 7-8, 2000 Holiday Inn Montreal Midtown, Montreal, Quebec

(Please note: Scheduled times may change before the final version of the program)

THURSDAY, DECEMBER 7, 2000

8:45 AM Introduction/Opening Remarks: Dr. Heather Durham, President STC

Session I - Naturally occurring food contaminants. Chairperson: Dr. Gordon Kirby

8:55 AM Introduction. Chairperson

9:00 AM The perilous prion. - Dr. Neil Cashman (University of Toronto, Toronto, ON)

9:30 AM E.coli and Shiga toxins - in your food and in your kidneys. - Dr. Carlton Gyles (University of Guelph, Guelph, ON)

10:00 AM Refreshment break

10:30 AM Toxic Pfiesteria complex. - Dr. JoAnn Burkholder (North Carolina State University, Raleigh, NC)

11:00 AM Fumonisins - carcinogenic fungal toxins that disrupt sphingolipid signaling pathways. - Dr. Ron Riley (USDA, Athens, GA)

11:30 AM Chairperson's concluding remarks

11:35 AM Poster session and lunch

Session II - Herbal product safety. Chairperson: Dr. John Clement

1:55 PM Introduction. Chairperson

2:00 PM Regulation of herbal products in Canada - An overview. - Dr. Frank Chandler (Chandler Herbal Consulting, Halifax, NS)

2:30 PM Natural health products and drug disposition. - Dr. Brian Foster (Health Protection Branch, Ottawa, ON)

3:00 PM Refreshment break

3:30 PM Immune enhancing herbal medicines: A new wave of clinical therapies? - Dr. Timothy Lee (Dalhousie University, Halifax, NS)

4:00 PM Discussion and Chairperson's Concluding Remarks

4:15 PM STC Annual Business Meeting

6:30 PM President's Reception

8:00 PM Dinner

FRIDAY, DECEMBER 8, 1999

Session III - Genetically modified foods 1. Chairperson: Dr. Genevieve Bondy

8:55 AM Introduction. Chairperson

9:00 AM Fact or fiction in the GMO debate. - Dr. Maurice Moloney (University of Calgary, Calgary, AB)

9:30 AM The mammalian safety assessment of proteins expressed as pest resistance traits in plants. - Dr. John Kough (US EPA, Washington DC)

10:00 AM Refreshment break

10:30 AM Transgenic salmon for culture and consumption. - Dr. Garth Fletcher (Memorial University of Newfoundland and A/F Protein Canada Inc., St.John's, NF)

11:00 AM Introduction to Henderson Award Lecture

11:05 AM Henderson Award Lecture

Speaker TBA

11:50 AM Poster Session and Lunch

Session IV - Genetically modified foods 2. Chairperson: TBA

12:55 PM Introduction. Chairperson

1:00 PM Application of animal models for assessing allergenicity of new foods and food chemicals. - Dr. Denis Hinton (US FDA, Laurel, MD)

1:30 PM Public perception of risks from GMOs. - Speaker TBA (International Food Information Council, Washington DC)

2:00 PM Speaker TBA

2:30 PM Discussion and Chairperson's concluding remarks

3:00 PM Conclusion

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NEWS FROM OTTAWA

Rekha Mehta

The Federal Budget 2000 committed $256 Million to the Health Protection Branch (HPB) over the next four years to strengthen the science capacity in all major program areas such as disease surveillance and emergency response, environmental health issues, biotechnology, food safety and nutrition. The budget was also ear-marked for enhanced funding for the operation of the Office of Natural Health Products, and the Winnipeg Lab which is now fully functional. $46 million of the Biotechnology money announced in the Budget was designated for HPBs Biotechnology Initiative, to enhance surveillance of diseases and regulation of health products arising from advances in molecular technology, as well as biotechnology applications in the environment.

As usual, laboratory scientists in the HPB are pessimistic regarding how much of this funding will actually be allocated to enhance the research capacity which in recent years has seen so many cuts. This is especially the case since the April 2000 announcement of Health Canada restructuring. This exercise, now being termed 'Realignment of Health Canada' will result in the integration of the health protection and health promotion activities into three new branches - ***Health Products and Food****: responsible for the safety and efficacy of drugs, food, nutrition, natural health products, medical devices, biologics and related biotechnology ;* ***Environmental and Product Safety****: responsible for the safety and efficacy of commercial and consumer products in the Canadian marketplace and promotion of healthy living, working and recreational environments ; and* ***Population and Public Health*** *: responsible for surveillance, and prevention and control of a wide range of diseases. The Medical Services Branch will be reorganised to focus exclusively on Aboriginal health issues and the delivery of health services to First Nations and Inuit communities, and hence, its name change to* ***First Nations and Inuit Health.*** *In addition, an* ***Office of the Chief Scientist*** *reporting to the Deputy Minister will be created to 'bring greater leadership, coherence and expertise to the strategic direction of science in the*

Department'. There will now be six (instead of five) ***Regional Offices*** *which will take on a more direct role in managing and coordinating programs in the regions to better meet particular regional needs and improve collaboration with provincial and territorial governments. To use the words of the Deputy Minister, Mr. David Dodge: 'The realignment announcement (today) will allow the department to bring more focused attention to the individual elements of protection, promotion and direct service activities in order to make the most effective use of taxpayers dollars '. Staff consultations are currently under way, and implementation of the new structure is scheduled to begin July 1, 2000.*

Meanwhile, the work in the Central and Regional laboratories to protect the health of Canadians continues to fulfill the mandate of the HPB. In December 1999, the Canadian ban on Belgian foods, suspected of dioxin and PCB contamination, was lifted following co-ordinated analyses of these food products through the Bureau of Chemical Safety, Canadian Food Inspection Agency and other international agencies. An incident in January 1999, when a farmer in Belgium noticed that his chickens were dying in greater numbers than usual and that egg laying had decreased, had resulted in world-wide concerns over the safety of Belgian foods and a Canadian importation ban of these products in May 1999. An investigation by Belgian officials determined that chicken and chicken products had been contaminated with elevated levels of dioxin by a rendering firm which had mixed spent industrial oil with animal fats.

Late last year another contaminant that caused concern to the Canadian Food Inspection Agency (CFIA) was the carcinogen, 3-MPCD (3-monochloropropane-1,2-diol), found in some food products containing protein hydrolysates. The contaminant, probably formed during a reaction between the chlorine in hydrochloric acid and the glycerol from fat in the production process, was found at relatively high levels primarily in Asian-style soy, mushroom and oyster sauces. Currently, such food products are tested for safety based on Health Canada established temporary guideline level of 1 ppm. Work is continuing to lower the levels of 3-MPCD further than the current, temporary guideline.

In late February, Health Canada warned the public not to consume Gecko Lizard Herbal Tea Mix, packaged by South Project Chinese Herbs Factory, Shenzhen, Kwang Tung, China, and commonly used and promoted as an "energizer". The product was the most likely cause of severe injury that led to the hospitalization of two members of an Ottawa family. The Toxicology and Food Research Divisions of the Food Directorate conducted toxicity studies and analyses of the product to determine if there was any adulteration, contamination, cross-reaction with other medications, or other possible cause for the reported incident. No conclusive evidence was found.

In March 2000, a Health Canada study reported that second-hand smoke may increase the risk of breast cancer, and that the longer the exposure, the higher the risk. The study, Passive and Active Smoking and Breast Cancer Risk in Canada,1994-97, was published in Cancer Causes and Control. The data were collected through the National Enhanced Cancer Surveillance System (NECSS), which is a collaborative effort between Health Canada and the provincial cancer registries. The NECSS collects detailed cancer risk factor data from 20,000 Canadians recently diagnosed with any of 18 types of cancer. Together with the national Environmental Quality Database, it allows for the assessment of potential human health effects and of environmental exposures, including environmental tobacco smoke.

On May 5, 2000, Health Canada through Public Works and Government Services Canada (PWGSC), issued a Request for Proposal (RFP) to establish a Canadian source of quality, standardized, affordable, research-grade marijuana. Health Canada aims to have a five-year contract in place by this summer. Domestically produced marijuana will be used for research in clinical trials with eligible recipients, to determine the safety and effectiveness of the drug in patients that are unresponsive to currently available treatments. For any interested marijuana growers, further information and a Request for Proposal is available from 1-800-964-MERX (6379) or their Website

http://www.merx.cebra.com/

The HPB will be holding a Science Forum in conjunction with the upcoming Annual Meeting of CFBS (Canadian Federation of Biological Societies) on June 22, 2000 in Ottawa. The theme for the meeting is: "HPBs Science Base in Promoting and Protecting Public Health in a Changing Technological Environment". The HPB organizing committee is being chaired by Dr. Sarwar Gilani (Bureau of Nutritional Sciences, Food Directorate). Another reason to attend the 2000 CFBS Meeting in Ottawa!

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21st CENTURY CHAIRS FOR RESEARCH EXCELLENCE

David Josephy, Department of Chemistry and Biochemistry, University of Guelph

Following years of cutbacks and retrenchment, Canada's universities now face the opposite challenge: managing the infusion of large amounts of new money. Today's vibrant economic growth, which is generating massive amounts of extra tax revenue, is founded on innovations made in basic research labs. Politicians finally understand that the "knowledge-based economy" has arrived. The Internet and the biotech industry started in academic research labs, and government funding to scientific fields that promise more such spin-offs may be about to take off like the NASDAQ index.

This new support, however, will be very different from the block transfers of the 1960s. Indeed, Ontario Ministry of Education operating grants to the universities are being cut by another 0.5% this year. The new funding is highly targeted and tightly controlled by external agencies, government or corporate. These changes in funding mechanisms will to transform the character of university life over the next few years, challenging our institutional traditions and, many fear, threatening academic freedom of inquiry.

The federal government is keen to put new money into health care and education, social services which are recognized as provincial responsibilities. Ottawa must carefully dance around the provincial jurisdiction in these areas, especially since it is facing an array of politically-hostile provincial governments. The federal government wants to maintain maximum control and take maximum credit. This explains the design of the CIHR (discussed in these pages in 1999), with its sweeping mandate to expand the ambit of medical research into applied studies of cultural and socio-economic determinants of health. Similarly, the federally-sponsored CFI is now flowing large sums of money into university and hospital research equipment. The new facilities are a boon to the successful applicants, but also a burden on the universities, which need to find space for the machines and funds for personnel, maintenance costs, and infrastructure support.

The latest new federal program to support Canadian research was announced in the fall 1999 Throne Speech

"In the last two years, the Government has pursued an ambitious agenda to improve its support for advanced research in Canada. To build on this agenda, the Government will ... increase its support to the Granting Councils, enabling them to forge new partnerships with our universities to attract the best research minds in the world through an innovative program of 21st Century Chairs for Research

Excellence ..."

The Prime Minister gave some more information to the House of Commons House of Commons

" ... to establish, over the next three years, 1,200 new 21st Century Chairs for Research Excellence in universities across Canada. To provide enough financial support for the total costs of research for each new research chair to make them internationally competitive. And to set as an objective reaching a total of 2,000 new Chairs for Research Excellence across Canada as soon as possible thereafter. A plan I welcome. A plan for excellence and international competitiveness which this government endorses enthusiastically ..."

The impact of a program of this magnitude will be dramatic, but, to date, its details have not been released. According to the University of Waterloo Bulletin

"There's no doubt that the government will set precise rules for the new professorships [UW provost Jim] Kalbfleisch noted. "What it comes down to is that governments no longer want to give us money that we control. They want to control the way it's spent, at a fairly detailed level."

The Chairs will be used both to recognize up-and-coming "stars of the future" and to bring back home leading Canadian scientists who left the country during the lean years. As to the specific details, few are available, and rumours abound. The salaries for the chairs will be $100,000 or $150,000 or ... ? They may be accompanied by substantial funding for overhead costs. The Chair-holders may be constrained to do little or no "teaching", again to avoid trespassing into the provincial governments' mandate. University administrators are waiting the detailed announcements with the eager anticipation of children at Christmas. According to a recent commentary in Science, they will "soon be turned loose on a massive shopping spree for scientific talent" (Canadian Universities: Massive Hiring Plan Aimed at 'Brain Gain', Wayne Kondro, Science 286: 651-653, Oct. 22, 1999).

The prospect of supporting internationally-competitive "stars" in the Canadian system, and reversing the nation-wide decline in faculty numbers, is certainly welcome. But there is also great potential for harm if the program is poorly designed. "CV-shopping" by the largest universities could strip the best researchers from smaller campuses. The consecration of a few "stars" in each department could unleash a fury of academic in-fighting and jealousy, undermining the morale of those left in the ranks of the ordinary. I particularly worry about the impact of removing many of the top professorial researchers from the teaching rosters, if the program does severely restrict the freedom of chair-holders to teach (at the undergraduate level? or even to teach and train graduate students?). Many of the best faculty teachers are also outstanding scholars and researchers, and students should be able to interact with them right from their first year of studies. The next decade may very well see a serious shortage in the supply of faculty in Canada. According to Robert J. Giroux, president of the Association of Universities and Colleges of Canada Association of Universities and Colleges of Canada

"Universities will need to hire 1,200 to 1,400 faculty per year over the next six years in order to meet enrolment growth. The need to replace those leaving the system should rise from about 1,300 a year to 1,600 a year over the same period, resulting in combined hiring needs of 2,500 to 3,000 new faculty per year. ... The demand will be difficult to meet given that we produce only 4,000 PhD graduates a year and given the fact that only 30% to 40% of those graduates traditionally enter academic positions."

If more of the top research faculty are moved into dedicated research positions, who will teach the wave of additional students we expect in the coming years, as the "baby-boom-echo" generation enters post-secondary education, and as we encourage an even higher percentage of high-school leavers to

attend university?

There is further information at the Social Sciences and Humanities Research Council of Canada web site in english and french.

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THE HEALTH PROTECTION BRANCH EXCELLENCE IN SCIENCE AWARDS 1999

Rekha Mehta

The Excellence in Science Awards are presented annually by the Assistant Deputy Minister, Health Protection Branch (HPB), Health Canada to an employee or employees who achieve peer recognition for outstanding contributions to knowledge in the sciences relevant to health protection. The first awards were presented in 1998. Recipients are nominated by coworkers to receive this honour. The winners are then selected by a Prize Committee comprising the Senior Director General, HPB, the Chairperson of the HPB Awards and Recognition Committee, a representative of the Departmental Committee for Research Scientists, and four scientists nominated by the Directors General of the four HPB Directorates. The 1999 Awards were presented to the following HPB scientists.

***Dr. Hari Mohan Vijay** was recognised for her contributions to the science of mold spore allergenicity and human health. She joined the Health Protection Branch of Health Canada in 1974, and initiated a program for the standardization of mold allergens, the major contributors to respiratory allergic symptoms and asthma She has since developed 14 physico-chemical and immunological techniques to purify and characterize mold allergens. She holds four patents, all related to the detection of allergens and hence the cure of allergy. Her pioneering work has led to the technology of mass production of these allergens for use in improved diagnosis and development of immunotherapeutic reagents for patients with mold allergies. Among her many other achievements are international awards, the publication of more than 180 scientific papers, and membership in numerous organizations. She is a referee for four scientific Journals and three granting agencies as well as a member of an editorial board of the International Journal of Aerobiology. Currently, Dr. Vijay is studying indoor air quality -- children's immunological response to residential fungi and dust mite -- for which she receives a grant from the Program on Energy Research and Development.*

***Dr. Tine Kuiper-Goodman** was recognised for outstanding contribution to the risk assessment of mycotoxins and other toxicants, notably microcystins. When she joined Health Canada's in 1966, she became one of the department's first research scientists and worked as an electron microscopist on ultrastructural changes in cells after exposure to a variety of exogenous substances. One of the highlights was her development of techniques of morphometry to quantitatively assess dose response relationships of ultrastructural changes to the presence of contaminants such as hexachlorobenzene. In 1975, she joined the Toxicological Evaluation Division and began her specialization in the risk assessment of natural toxicants. She has used and developed new approaches to ensure that her risk assessments of natural toxicants are consistent, relevant, balanced and transparent, and that appropriate decisions are made through communication with others in the risk management process. Dr. Kuiper-Goodman is an active member of several professional societies, participates in several national and international committees, and is regularly invited to speak at national and international*

meetings and workshops. She has contributed over 70 scientific publications, including several book chapters. Her published work has been used extensively by other scientists to guide their research efforts, and by regulatory authorities to develop risk management policies. She is routinely called upon by international organizations, such as the World Health Organization, to serve on advisory committees.

***Dr. Peter M. Scott** was recognised for outstanding contribution to the field of mycotoxins and as an international expert, specializing in the development of methods of extraction and detection of mycotoxins in various food commodities and food products. Dr. Scott joined Health Canada as a research scientist in 1965 and began a career in mycotoxin research just five years after the discovery of aflatoxins. He soon expanded the field by developing analytical methods for other mycotoxins and demonstrating the natural occurrence of many of them in foods for the first time. These findings stimulated surveys, including those carried out in the HPB, and work in other areas such as toxicology, risk evaluation, and mycology. Much of Dr. Scott's program, while analytical in nature, has been collaborative and interdisciplinary. Its importance was particularly illustrated by the impact caused by the finding of vomitoxin in Canadian wheat in 1980. As well as developing recognized analytical methodology, he has discovered and elucidated the structures of new fungal metabolites, studied the stability of certain mycotoxins in foods, determined the effects of milling and food processing on certain mycotoxins, and produced mycotoxins from fungal cultures. Currently, Dr. Scott's research interests include: alternariol and other Alternaria toxins in fruit juices, Fusarium moniliforme mycotoxins in corn and rice-based foods and ginkgotoxin in Ginkgo biloba. Dr. Scott has received several international awards in recognition of his work and is the author or co-author of more than 170 scientific publications. He also participates in international and departmental committees. He is the co-editor of the journal Food Additives and Contaminants and is or has been a member of the editorial boards of five other scientific journals.*

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ACTIVITIES OF THE CANADIAN FEDERATION OF BIOLOGICAL SOCIETIES OFFICE

Bruce Sells, Executive Director

This article is to update you on the activities of the CFBS Ottawa office since my arrival as Executive Director on April 15, 1999. During the past year efforts have been made to restructure how we function in order to respond more effectively to the needs of the members of the Biological/Biomedical Sciences Community. What has become obvious since my arrival is that members of the Federation are frequently unclear as to the various roles that the CFBS office performs on behalf of its life scientists. Currently, the CFBS Ottawa office is composed of two individuals Mrs. Wafaa Antonious, our Office Manager, and the Executive Director. Should you have suggestions on what is presently being done we would be happy to hear from you.

I Communication

Communication with the membership and how it can be done more effectively has consumed much of our effort during the past months. In an attempt to deal with this issue we have set up a new CFBS web site. With the assistance of our Web-master, Steve Lau, this vehicle now allows us to place on the

web a summary of events and communications that we believe are of concern to our constituents. At the same time we have established a list-server which permits us to communicate directly with each member when matters of importance arise.

As a further measure to determine how the CFBS Ottawa office can be more responsive, a draft of a strategic plan was developed and distributed to approximately 18 Societies representing most of the Canadian life sciences community. Fourteen of these Societies were present at a strategic planning session that we organized in November 1999. A summary of this meeting is available on our web-site. What was encouraging from this planning session was the unanimous support for CFBS to continue its role as an advocate for Biological/Biomedical Science issues. Strong support was also voiced for CFBS to continue to organize a high quality, but more focused type of scientific meeting each year, This recommendation has been transformed into action for the year 2000 CFBS Meeting in Ottawa (June 22-25) the details of which are on the web-site.

To keep Societies informed of current news related to scientific issues of importance to the life science community we have sent out by e-mail a series of CFBS-Alerts. These were sent initially to Society Executives but now with our new list-server and an updated data bank of members you should receive information more rapidly.

II Science Advocacy

During the past year CFBS participated in meetings with government officials, parliamentarians and members of granting councils. One session took place in May, 1999, and the second series of visits occurred in November in concert with colleagues in the Canadian Consortium for Research. The various issues discussed and the responses of "decision"-makers have been recorded on our web-site and in an article published in the Year 2000 "Call for Abstracts".

To ensure that we deal with issues of greatest concern to each society we have asked each of the Presidents to nominate a representative on whom we might call when we meet with "decision-makers". Our goal is to "tailor-make" our visits such that the "decision-makers" visited match as close as possible the issues under discussion. We have canvassed the various societies for nominations/volunteers who will join with the CFBS ream when it meets to consider the issues to be brought forward. We are at present arranging for our spring meeting with MPs, senior bureaucrats and others. Heather Durham has agreed to act as a representative for your Society and we look forward to working with her. Please contact Heather Durham, STC President when you have issues that need to be addressed. I am also pleased to report that the Canadian Society for Biochemistry and Molecular Cell Biology (CSBMCB) will continue to support our advocacy activities. This year, for the first time, representatives from the Canadian Society for Exercise Physiology will join us in these activities.

III CFBS Annual General Meeting

For a number of years much discussion has occurred concerning the format of the CFBS Annual Meeting. This year we were determined, therefore, to attempt to respond to these concerns. Many federation members indicated that they wished to attend meetings that were not only relevant to their particular interest but contained a program in which the material was presented in sufficient depth for them to justify the travel funds involved. In this way they argue, they would get more value for their travel dollar. The year 2000 meeting in Ottawa is an attempt to deliver this type of conference that focuses on two themes. The downside of this decision is that each year only a segment of the Federation membership will be accommodated. While this is true, we hope that over a 3-4 year period most of the interests of the CFBS members will be satisfied. Since the financial health of the CFBS Ottawa office

depends upon the success of the Annual Scientific Meeting it is important that we organize it in such a way as to meet the needs of our members.

One thing is clear, however, most of us tend to opt for specialized meetings that allow us to keep in touch with the most up-to-date activities in our particular field. There are, nevertheless, many arguments around this issue and the current approach is an "experiment" and we shall see how it works out. To encourage international participation we have, this year, advertised the CFBS Meeting in the calendar of events in various Newsletters of U.S. Scientific Societies whose interests are related to the themes of our conference. Notice of this meeting will appear also on their web-sites and in the FASEB Journal.

We believe that the Year 2000 Meeting is of international caliber and we look forward to your participation. We are pleased to announce that this year our Public Forum Lecture will feature Dr. Robert Herdt, Rockefeller Foundation, who will speak on Genetically Modified Foods. This is our effort to bring to the community major issues of concern. In all these activities, we are attempting to be responsive to our members and to the Biosciences Community. It is vital, therefore, to have your feedback on our current efforts and the evolving concerns of your Society in order for us to provide you with the best possible service.

Finally, efforts are underway to organize the year 2001 Meeting. Two major topics have been identified (1) Genetic Diseases and (2) Environmental Issues. Further information will be provided as it becomes available.

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POSITION WANTED

Dr. Kabil Al-Sabti is a genotoxicologist working on monitoring environmental pollution and workers (in mines, reactors, industry, etc.) exposed to different kinds of pollutants and radiation in their work through chromosomal aberrations, sister chromatid exchanges and micronuclei test systems. He has used the same methods to monitor the animals from suspected areas; and the fish and mussel cells to monitor the water genotoxicity. He is a Canadian and Slovenian Citizen who has lived in Toronto and Vancouver. He had a project using fish and mussels for water genotoxicity monitoring at the Jozef Stefan Institute, monitoring the effect of discharged wastes at different locations including Water Treatment Plants, the Krsko Nuclear Reactor Plant, the Gulf of Trieste, and some other rivers and lakes in Slovenia. He now lives in Edmonton, Alberta.

Dr Al-Sabti is looking for a position in this field. For his resume and a list of publications, please contact Kabil Al-Sabti, Ph.D. at # 103-10249 119 St., Edmonton, Alberta, Canada, T5K 1Z3. Phone: 780-488-8115. Otherwise e-mail him or visit his Web site.

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CONFERENCES, MEETINGS AND WORKSHOPS

June 22-25 Canadian Federation of Biological Societies Meeting, Ottawa. For further details contact Wafaa Antonious via e-mail: WANTONIOUS@CFBS.ORG

June 24-28 15th International Symposium of the Society of Toxicologic Pathologists. Reproductive Biology/Endocrine Disrupters. Phoenix, Arizona, USA. Contact: STP Registration, 19 Mantua Road, Mt. Royal, New Jersey 08061, USA

July 15-20 VII World Conference on Clinical Pharmacology and Therapeutics & 4th Congress of the European Association for Clinical Pharmacology and Therapeutics, Florence, Italy. Contact: CMO S.r.l. - Conventions Meetings Organizations, Via San Donato, 22, 50127 Florence, Italy.

July 30- Aug 3 8th International Congress of the European Association for Veterinary Pharmacology and Toxicology, Jerusalem, Israel. Contact: 8th EAVPT Congress, PO Box 29041, Tel Aviv 61290, Israel. E-mail: trgt@netvision.net.il

Aug 27-Sept 1 26th International Congress on Occupational Health (ICOH2000), Singapore. Contact: Prof. Jerry Jeyaratnam, Fax: 65 779 1489, e-mail: cofjeya@leonis.nus.edu.sg

Sept 17-20 38th Congress of the European Societies of Toxicology. Contact: Alan Boobis, Imperial College, London W12 0NN, England

Nov 12-16 21st Annual Meeting of Society of Environmental Toxicology and Chemistry (SETAC), Nashville, TN, USA. Contact: SETAC Web site

Dec Thirty-Third Annual Symposium, Society of Toxicology of Canada, Montréal, Québec. Contact: Society of Toxicology of Canada, P.O. Box 517, Beaconsfield, Québec H9W 5V1. Tel: 514-428-2676, Fax: 514-428-4946

2001

March 25-29 40th Annual Meeting of the Society of Toxicology. San Francisco USA. Contact: SOT, 1767 Business Centre Drive, Suite 302, Reston, Virginia 22090-5332, USA

June 24-28 20th International Symposium of the Society of Toxicologic Pathologists. Orlando, Florida USA. Contact: STP Registration, 19 Mantua Road, Mt. Royal, New Jersey 08061, USA

July 8 - 13 Ninth International Congress of Toxicology, ICT-IX, Brisbane, Australia. Contact: Congress Secretariat, Intermedia Convention and Event Management, 11/97 Castlemaine Street, P.O. Box 1280, Milton, OLD 4064 Australia. Web site or e-mail: ictix2001@im.com.au

2002

March 18-22 41st Annual Meeting of the Society of Toxicology. Nashville, TN, USA. Contact: SOT, 1767 Business Centre Drive, Suite 302, Reston, Virginia 22090-5332, USA

2003

March 18-22 42nd Annual Meeting of the Society of Toxicology. Salt Lake City, UT, USA. Contact: SOT,

1767 Business Centre Drive, Suite 302, Reston, Virginia 22090-5332, USA

2004

July Tenth International Congress of Toxicology, ICT-X, Tampere, Finland.

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