

**Draft Minutes of the CHEMRAWN Committee Meeting  
Queensland University of Technology, Brisbane, Australia  
Tuesday, July 3, 2001**

Agenda:

1. Introductions and welcome to observers and guests.
2. Review and approval of Minutes from the Paris meeting – Dr. Malin
3. Approval/modifications of the agenda
4. Overview, discussion of CHEMRAWN programs and plans:
  - a) XII – Chemistry, Sustainable Agriculture and Human Welfare – Prof. Buncel/Prof. Onyido
  - b) XIV – Toward Environmentally Benign Products and Processes - Dr. Hjeresen
  - c) XIII – Chemistry for Cleaner Energy – Dr. Sivaram, Prof. Kuznesov
  - d) XV - Chemistry and Water – Prof. Hamelin
  - e) XVI(?) Innovation and the Chemical Industry – Prof. Kopytowski
5. Assessment of Previous CHEMRAWN Conferences – Prof. Kopytowski
6. Publications from CHEMRAWN conferences – Prof. James Bull
7. Other proposed conferences
  - a) Proposal from IUPAC Commission 1.2 – (Thermodynamics – Fate of halogenated hydrocarbons and mixtures). John Dymond, the Commission Secretary, was invited to discuss this proposal.
  - b) Biodiversity, food purity, other topics.
8. Committee composition/reformation for 2002 – Dr. Norling
9. Plans for Committee Meeting in 2002
10. Other items
11. Discussion on where we are with CHEMRAWN X; Plans for next day; organization of Future Actions Committee – Dr. Norling
12. Evening Committee Dinner

**Meeting Minutes**

- 1) **Introductions and welcome to observers and guests.** Dr. Norling welcomed all present, invited each person to introduce themselves and circulated a list for correction of addresses. **Members Present:** Erwin Buncel, Min Che Chon, Michael J. Droescher, Raymond Hamelin, Makoto Imanari, Jerzy Kopytowski, Fedor Kuznetsov, John M. Malin, Patrick Moyna, Parry Norling (chair), Ikenna Onyido, Swaminathan Sivaram, Alan Smith. Observers and friends of the Committee: Christof Buxtorf, Alan Hayes, Dennis Hjeresen.
- 2) **Minutes:** The minutes of the previous meeting approved unanimously with the following change: Dr. Hamelin noted that the POLLUTEC annual conference, referred to on p. 7, alternates between Lyon and Paris. It will be held in Lyon in 2002.

3) **Agenda.** The agenda was modified so that discussions of CHEMRAWN X could take place during the joint COCI/CHEMRAWN meeting on July 4.

4) **Ongoing CHEMRAWN plans and programs.**

a) **CHEMRAWN XII.** Dr. Buncel noted that the 1999 attempt by an international organizing committee to organize a conference failed. A subsequent try at “piggybacking” CHEMRAWN XII on a 2003 soils science conference in South Africa also seems disfavored because the organizers of the soils meeting don’t want to expand the scope of their conference. Dr. Buncel reported that he had met July 2, 2001 with Piet Steyn and Parry Norling. Steyn suggested the budget for a ‘stand alone’ conference was too large, and agreed to look into funding by South African sources. He feels it would still be better to piggyback on other conferences. CHEMRAWN committee members raised the following points:

- If money is hard to find, maybe the organizing committee needs to include more people with fundraising experience.
- The current projected year of this conference is 2005. Perhaps the CHEMRAWN committee should consider changing the CHEMRAWN XII number to a higher one, to keep the presentation dates of the CHEMRAWN conference series approximately in chronological order.

b) **CHEMRAWN XIV.** Dr. Hjeresen, Director, ACS Green Chemistry Institute and Chair of the CHEMRAWN XIV Organizing Committee, reported that CHEMRAWN XIV was highly successful. It included younger scientists, establish researchers, government policymakers and a Nobel prize winner. The meeting took place in June 2001 in Boulder, CO., an excellent venue to discuss environmental chemistry. Dr. Hjeresen noted that he would speak on the topic in a plenary session on July 4 in Brisbane. Immediately before the conference, 25 young scientists spent 3 days with 3-4 instructors at a workshop in Green Chemistry. This proved to be an especially uplifting activity and has resulted in a communications network developed among the students who participated. Dr. Hjeresen also noted the following:

- Key people at CHEMRAWN XIV included several members of CHEMRAWN committee (Norling, Moyna, Malin); Mike Fitzpatrick (General Chair of the conference and COO of the Rohm and Haas Company); Rosina Bierbaum (Acting Presidential Science Adviser); Attila Pavlath, Mary Good; Daryle Busch; Joe Thornton (author of *Pandora’s Poison*).
- The conference encouraged controversy, debate and diverse points of view. Green Chemistry depends for success on interactions among gov’t, industry, academia, and NGO’s.
- The conference budget was \$420k, of which some \$140k is left for future actions activity. The largest single source of funds was the ACS Matching Funds program. Other than UNESCO, there was no government support.
- A CHEMRAWN XIV Proceedings volume is under development and will be published in *Pure & Applied Chemistry*.
- The Future Actions Committee (FAC) noted that there this is one of the very few venues in which gov’t and industry can sit down together without being accused of collusion.

- The Green Chemistry Institute will have a separate international page.
- Routes discussed for further development of Green Chemistry were (1) industrial implementation, (2) education, (3) Research & Development including formation of national centers and encouragement of research funding by industry and government, (4) wide international participation.
- One issue recognized by the Future Actions Committee is that Green Chemistry is a “borderline science”, i.e., it includes environmental, atmospheric, water, etc. Normally the top people work in the center of their disciplines. Arguably, it is hard to attract the best people to Green Chemistry because the field principally involves interactions at disciplinary boundaries.
- Timetable: Planning for CHEMRAWN XIV began some 3.5 years ago.
- Lesson: Good to have a highly visible, engaged chief executive.
- FAC Report is ready but had not arrived in Brisbane as of the meeting day and therefore could not be distributed at the meeting.
- A useful follow-up activity would be to repeat of the student conference in locations around the world.
- Question: What about a breakout session on water quality? Ans: Green Chemistry a more general idea, but water quality is a number one priority.
- Jerry Kopytowski has developed a template for assessing CHEMRAWN conferences. Denny was invited to complete this so it can get on CHEMRAWN website. Also, the website should include the FAC report and recommendations.. Many folks found the conference to be a “life-changing experience”.
- Alan Hayes: This conference is expected to get lots of publicity, including coverage in C&EN, and from RSC. The training sessions were an important component.
- Moyna: Worried by relatively small number of participants. He noted that CHEMRAWNs are becoming more regional, less spectacular. Denny: Made a conscious decision on whether to advertise more and be open to more students. Organizers decided the value of CHEMRAWN was in quality, not quantity.
- Jerry: Some previous CHEMRAWNs included mostly concentrated, high-level plenary sessions that allowed little discussion. Other CHEMRAWN meetings featured panel discussions. The latter form is better. One should not be concerned if only 90 people show up. The practical applications are the important part. In this context, change is progress.
- Denny: Implementation of recommendations is important. How best to address to government? Output is not limited to the participants of the conference.

c) **CHEMRAWN XIII – Chemistry for Cleaner Energy.** Dr Sivaram reported that he has talked with various people in the scientific community in India. Many scientific institutions would lend their name to the conference, but a dominant stakeholder is needed who would also provide funds. Most people believe lead time should be two years, which would place the date of the conference sometime in 2003. Dr. Sivaram attended a large hydrocarbon conference in India – sponsored by industry – and would consider piggybacking on that one. This meeting is held in January every year, in Delhi. Sivaram would seek sponsorship from major oil companies and the Indian government. He is looking for options for clean energy for developing world, and would hope that the Future Actions Committee will come up with useful recommendations. Discussion:

- Hayes: The organizers should invite Prof. John M. Thomas, who is an excellent speaker.
- Kuznesov: An organizing committee and FAC should be established right now.
- Kuznesov: The geographical aspect of the problem is important. Transportation of energy has regional differences but many things also in common.
- One committee member suggested that chemistry is not directly related to energy problems, but the majority agreed that chemistry and energy issues are closely intertwined.

d) **CHEMRAWN XV – Chemistry and Water.** Dr. Hamelin distributed an outline of the conference, proposed for Nov. 11-12, 2002 at UNESCO headquarters in Paris, Nov. 13-14 at Maison de la Chemie and Nov. 15, again at UNESCO. The purpose of the 1<sup>st</sup> day of the conference would be to look at the dimensions of the crisis. The 2<sup>nd</sup> and 3<sup>rd</sup> days' programs will discuss what chemists can do. The afternoon of the 3<sup>rd</sup> day will summarize all 9 preceding segments. The organizing committee consists of: Pierre Potier (chair), Patrick Arpino (secretary), Jean-Baptiste Donnet (Finance), also Jean-Claude Brunie, Raymond Hamelin, Mr. Hui, Yves Levi, and Pierre F. Teniere-Buchot. A scientific committee has also been nominated. The title of the conference will be "Chemistry and Water". Currently the proposed program involves mostly French scientists but the organizers are seeking nominees from other countries. A Chair is needed for the scientific committee. There will be a call for papers in September, 2001. Comments:

- Denny: From CHEMRAWN XIV, it was found crucial to include a well-known figure as leader of organizing committee.
- Droescher: Would be willing to help identify German participants, particularly industrial.
- Denny: There exist some four or five major industrial sectors that are listed as major sources of pollution.
- Hamelin: U.S. involvement is needed.
- Malin: Can offer names of persons involved in water quality workshop in Senegal scheduled for the end of July, 2001.
- Buncel: Organizers should invite persons knowledgeable about pollution in North American Great Lakes.
- Hamelin: There will be involvement of scientists from Moldova and Mozambique.
- Hamelin: Needs a letter from the President of IUPAC asking UNESCO to collaborate on CHEMRAWN XV.

e) **Proposed CHEMRAWN XVI (?)** (Kopytowski) on Innovation in the Chemical Industry. Dr. Kopytowski referred to a CEFIC report, promulgated in November 2000 related to innovation. Most statements were negative. Not many new products are being introduced, largely because of regulatory issues. Economists are discussing the relation between creativity and development. He has prepared a proposal for a program that he would take to CEFIC or ACC. Comments:

- Question: With whom would CHEMRAWN partner and is this being done by somebody else? Norling: The Council on Competitiveness has been addressing this matter.

- Droescher: The Council on Chemical Research has looked at this recently and produced a report on innovation. One expert is Michael Porter.
- Buxtorf: CEFIC is sandbagging a little - waiting to see what government will do. CEFIC may not be the right platform. Their organization is static.
- Kuznesov: Government planners sometimes forget that everything starts with new ideas. Japanese case studies exist on innovation, even in Chemistry, definitely in electronics. Maybe it would be best to have a short workshop to begin with, on regulatory matters.
- Kopytowski: There's a full program of CHEMRAWNs coming up. No rush on this one, but it's useful to know what the major factors are. For example, what is the percent of GDP that is ideal for innovative research?
- Norling: Whole issue of chemical sciences in economic development is a very important one.
- Smith: The organizers could include the "20/20" exercises that UK government has gone through.
- Norling: Perhaps a small workshop in conjunction with the EIRMA meetings would be useful.
- Hayes: It's important to include high tech industries such as electronics. The issue should also be raised with COCI. They are getting a member from CEFIC and maybe someone from ACC.
- Norling: IRI has gone international. - It accepts members from around the world. The meetings of local Chief Technology Officers will be in Beijing and in India.
- Hayes: It would be good to build on the connection of industry and IUPAC.
- Droescher: It could be useful to find out what CHEMRAWN itself could do. We should bring in stakeholders (industry, universities). Show where the process is working fine, find out where it isn't. Many new connections are being made worldwide.
- Kopytowski: CHEMRAWN should contact someone from IRI to find out what they're doing. Establish what the goals and strategy of such a conference would be.
- Hamelin: He has been reluctant to see CHEMRAWN involved in a conference in education, but very much favors a conference on innovation.

Conclusion: Consider this for a few years hence. Maybe the committee can come up with something for 2003 or later.

5. **Assessments of previous CHEMRAWNs** . Dr. Kopytowski reported that he has completed several assessments. They have been placed on the committee Webpage. Unfortunately, data are missing for several CHEMRAWNs including CHEMRAWN IX and XI. He expects it should be possible to find Perspectives and Recommendations volumes in the national libraries of the countries in which they were published. Dr Kopytowski requested the help of committee members in finding such volumes.
6. **Publications of Proceedings**. Professor James Bull, who was to have discussed this topic, was not able to attend the meeting.
7. **Other Proposed conferences**.
  - a) Dr. Norling noted the John Dymond proposal on fate of halogenated hydrocarbons. – He indicated this is not yet ready as a candidate for CHEMRAWN.

- b) Dr. Norling noted that conferences on biodiversity and on food purity have been suggested, but no proposals have been received.
8. **Committee composition/reformation for 2002.** Dr. Norling informed the committee as follows:
- The budget is \$29,300 for 2002-2003. These funds will help with the expenses of whoever is doing the work of the committee. Persons who have finished 8-year appointments cannot remain on the committee, but they can receive help with their expenses if active on CHEMRAWN conferences or workshops.
  - Models of CHEMRAWN conferences: (1) *Classic model (e.g., XV)*. Because of funding and personnel limitations, CHEMRAWN can do a “classic conference” every two or three years. (2) *Partnership (piggyback) model*. This has worked well with CHEMRAWN X, as will be discussed on July 4, 2001. (3) *New model*: Work with other IUPAC conferences and graft on a Future Actions Committee. This has the advantage of requiring even less organizational work than (1) or (2).
  - Membership: Erwin’s and Michael’s terms are ending. They will become “friends” of CHEMRAWN. Under the new IUPAC procedures the number of titular members will decrease, while we will create more “friends”.
9. **Plans for Committee Meeting in 2002.** The meeting could probably be held in Paris, in connection with the Water Chemistry meeting there. It could be scheduled for November 11, 2002, but this is a national holiday in France (Armistice Day). Most venues are closed. However, the Maison de Chemie (near Invalides) or French Chemical Society headquarters might be made available. Dr. Hamelin will investigate.
10. **Other Items.** There were no other items.
11. **CHEMRAWN X Discussion.** CHEMRAWN X has served as a prototype for incorporating a small CHEMRAWN conference into a major meeting. The CHEMRAWN committee itself will serve as Future Actions Committee. In joint discussions on July 4, 2001 with COCI, several speakers outlined their perspectives on chemical education. The speakers included Jim Boggs, Parry Norling, Joe Lagowski, Michael Droescher, Jinliang Quiao, Makoto Imanari, Patrick Moyna, Norma Nudelman, S. Sivaram and Nelson Wright. A copy of the Future Actions draft document will be distributed separately.

**Dr. Norling adjourned the meeting at 2:15 P.M.**

Respectfully submitted,  
J. Malin, Secretary 11/7/2001

Note added 2/7/02: CHEMRAWN XIV has now been postponed until November 2003 as desired by UNESCO; The 2002 CHEMRAWN committee meeting is now being planned for September just before or just after the IUPAC Bureau meeting in Paris (Sept.12-14) with Sept. 15-16 the most probable. PMN