

**COMMISSION ON ATOMIC WEIGHTS AND ISOTOPIC ABUNDANCES  
(CAWIA)**

**MINUTES OF MEETING: 8 - 10 AUGUST 1999  
BERLIN, GERMANY (Revision of 9/18/99)**

**1. OPENING AND WELCOME**

The Chairman, Professor Ludolf Schultz, welcomed all members, national representatives, and observers, with a special acknowledgement to those that had travelled especially long distances. The following members were present at the meeting:

Titular Members:	Prof. L. Schultz (Chairman) Dr. J.K. Böhlke Prof. M. Ebihara Prof. R. D. Loss Prof. G. Ramendik Dr. P. D. P. Taylor
Associate Members:	Prof. T. Ding Dr. D. J. Rokop Dr. S. Yoneda
National Representatives:	Prof. Paul De Bièvre (Belgium) Prof. J. R. De Laeter (Australia) Dr. M. Shima (Japan)
Observers: (Some present only at times)	Dr. M. Berglund Dr. C. A. M. Brenninkmeijer Dr. Christiane Buèss Dr. T. B. Coplen (Acting Secretary) Prof. Dr. K. G. Heumann Dr. N. E. Holden Dr. H. S. Peiser Prof. E. Roth Dr. T. Walczyk
Unable to attend:	Dr. R. D. Vocke, Jr. (Secretary) Prof. H. J. Dietze Prof. N. N. Greenwood Prof. A. N. Halliday Dr. H. Hidaka Prof. H.-J. Kluge Prof. H. R. Krouse Prof. Y. Xiao

## **2. ADOPTION OF AGENDA**

The Chairman provided the provisional agenda (Appendix 1), and it was adopted.

## **3. SECRETARY OF CAWIA**

Apologies were received from Dr. R. D. Vocke, Jr., CAWIA's Secretary, for his inability to attend the meeting because he did not receive permission from NIST and for his inability to get the 1997 Atomic Weights Report published. The Chairman indicated that the Secretary attempted to follow the NIST review process but that this process would be very lengthy and was not completed by the time of the Berlin meeting.

The Chairman pointed out that the Secretary's lack of attendance was not due to any lack of cooperation between the Secretary and the Chairman.

Dr. Peiser indicated that this was a real shock. Prof. Heumann suggested that if this is a general problem for participants from NIST, then perhaps a letter to the Director of NIST is in order. Prof. Roth supported this letter. The Chairman said that it is important that the Reports' Advisor at NIST not have any authority to change the technical content (or format) of Commission reports. Drs. Böhlke, Peiser, and Coplen agreed that format and content not be changed, but disagreed indicating that government agencies have no control. Generally, they indicated that the reports process could be timely and that it is formally required for U.S. government employees.

Dr. Peiser was directed by the Chairman to contact NIST and discuss all of the above issues. (In section 17, the Chairman also directs Dr. Peiser to take up the issue of the unpublished manuscript about reporting of  $\delta^7\text{Li}$  values with NIST personnel. However, Dr. Coplen will contact Dr. Vocke about this under Action Item 8—see Appendix 2.)

## **4. MINUTES OF THE GENEVA MEETING**

The Minutes of the 1997 meeting in Geneva, Switzerland were adopted with minor changes. One change on page 9 was to revise the quotation of Werner von Braun on rate limiting steps, “The American government appears to think that if you make 3 women pregnant, you can speed up delivery to 3 months” to “The American government appears to think that if you make 3 women pregnant simultaneously, you can speed up delivery to 3 months.”

Dr. Vocke was thanked for work preparing the Minutes of the 1997 meeting.

## **5. REVIEW OF THE 1997 ACTION ITEMS**

The Action Items of the 1997 meeting in Geneva are appended (see Appendix 3). All of the Action Items were completed except for the following:

- Item 5. Coplen and others will send this report to PAC within 60 days.
- Item 6. The item placed on Prof. Krouse, Dr. Böhlke, Dr. Coplen, and Dr. Vocke to update the mission statement of Subcommittee on Natural Isotopic

Fractionation (SNIF) to accurately reflect its changing functions has not yet been completed.

- Item 15. Same as Item 5 above.
- Item 16. As far as we can determine the manuscript on  $\delta^7\text{Li}$  reporting has not been submitted to PAC by Dr. Vocke and Prof. Krouse.
- Item 17. A short not on  $\delta^7\text{Li}$  reporting has not been submitted to Nature by Prof. Krouse and Dr. Vocke.
- Item 34. The review paper on non-terrestrial isotopic abundance data originally planned for submission by Prof. Ebihara has been delayed until 2001 or perhaps even a little later.

Although not specifically identified as an Action Item, submission of the 1997 Commission report to PAC should have occurred by early 1999. This will be completed by the Chairman (see section 3 above).

## 6. BUSINESS ARISING

The Secretary normally distributes the biennial Commission reports to the distribution list below. It was decided that the 1997 Atomic Weights report would not be distributed because the 1999 report would be published shortly thereafter. The 1999 report will be distributed by Dr. Coplen.

American Chemical Society  
1155 16th Street, N.W.  
Washington, DC 20036  
USA

American Society for Mass  
Spectrometry  
815 Don Gaspar Ave.  
Santa Fe, NM 87501-4431  
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Federal Republic of Germany

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Dr. Brian E. Stafford  
1955 West Texas St, Suite 7-288  
Fairfield, CA 94533-4462  
USA

Dr. J.R. Zdysiewicz  
Managing Editor  
Australian Journal of Chemistry  
314 Albert Street  
East Melbourne, Victoria 3002  
Australia

Dr. Christiane Buès presented a short, interesting talk titled “A History of the Mole Concept (1869-1969) Between Physics and Chemistry.”

Dr. P. De Bièvre discussed the issue of calibration and what its role is in atomic-weight measurements and in isotopic abundance measurements. He distributed a document on calibration in isotopic measurements prepared by H. Kipphardt, S. Valkiers, P. D. P. Taylor, and P. De Bièvre (Appendix 4).

Although Dr. Manfred Groening from the IAEA could not attend the Berlin meeting, it was agreed that we should invite him to the next meeting.

## **7. BUDGET**

The budget for Commission II.1 previously was USD 10,500. It will be reduced to USD 8,300 for 2001, primarily due to the Division increasing its Titular membership from five to eight members.

## **8. REPORT OF THE DIVISION COMMITTEE MEETING**

The Chairman reported that for the next two years CAWIA will proceed as usual. But after that the Commissions would be eliminated. The Division President wanted to be ahead of schedule on making arrangements for the elimination of Commissions and was working towards that end. However, the Chairman of Commission II.1 (Dr. L. Schultz) reported that the work of Commission II.1 cannot continue if commissions are eliminated. The Chairman of Commission II.2 indicated that if Commissions are eliminated, he would retire immediately and would seek another umbrella organization. The Chairman of II.3 immediately retired because he did not want to be involved with all the politics.

President John Corish recently changed his view and believes that Commissions are necessary for the continuation of the work of the Division. One compromise is to write 92 projects, one for each of the 92 elements. This is not acceptable according to the Secretary General, Dr. Edwin Becker. Another idea was to make Commission II.1 and nomenclature committees Standing Committees. This was also not acceptable to the Secretariat.

Because the number of Titular Members in Division II (Inorganic Division) is relatively low (5) compared to the number in other division, it was decided to immediately raise it to 8 in 1999 and to 10 in 2001.

In a visit, the Treasurer of the Division indicated that written proposals for Projects would now be accepted for consideration for funding. An example is the Element by Element Review.

Regarding naming of elements in the future, such as for elements 110 - 112, 114, 116, and 118, a new rule has been proposed. If a name is ever proposed for an element, it can never be used again for any other element. This will eliminate confusion in the literature.



It was announced that J. R. Bull is editor of PAC special issues and topics issues.

## 9. THE FUTURE OF CAWIA AND ITS SUBCOMMISSIONS

Two problems were indicated with the proposals of the U.S. NAO and the Secretariat. First, who evaluates proposals? Second, who nominates individuals to Divisions and Commissions.

Prof. Heumann suggested that each of us work through our National Adhering Organizations (NAOs) to make sure that the goal of the Secretariat to eliminate Commissions is defeated.

## 10. TABLE OF ATOMIC WEIGHTS 1999

The Commission's biennial report will be prepared by Dr. T. Coplen with aid from Dr. H. S. Peiser. It was decided that the uncertainty figure (Fig. 1 of the 1995 report) would not be included. The deadlines for submission of various sections are listed among the Action Items (Appendix 2).

## 11. REPORT OF THE SUBCOMMITTEE FOR ISOTOPIC ABUNDANCE MEASUREMENTS (SIAM)

The report of the Berlin pre-meeting of SIAM appears as Appendix 5. The recommendations of the report include the following:

1. The standard atomic weight of nitrogen was changed from 14.00674(7) to 14.0067(2) to increase the uncertainty so that it is similar to other elements showing isotopic variation, such as H, O, and C.
2. Change the standard atomic weight of S to 32.064(4). Note that later in the meeting CAWIA after reviewing a document produced by Prof. H. R. Krouse (Appendix 6) instead chose 32.065(5).
3. Add a footnote *g* to TSAW for Cl to account for values outside the current value. Note that later in the meeting after considerable discussion, the standard atomic weight was changed from 35.4527(9) to 35.453(2).
4. Change the standard atomic weight of Ge based on new measurements from 72.61(2) to 72.64(1).
5. Add footnote *r* to TSAW for Se.
6. Change the standard atomic weight of Xe from 131.29(2) to 131.293(6).
7. Change the standard atomic weight of Er based on new measurements from 167.26(3) to 167.259(3).
8. Change the standard atomic weight of U from 238.0289(1) to 238.02891(3).

It was argued by Prof. De Laeter that Ba needs a footnote *g* in TSAW due to the value of 137.311(14) measured for apalite compared to 137.326(9) for reference Ba. However, others believed that this difference might not be statistically significant. Thus, the motion by Prof. De Laeter was not agreed to.

Dr. P. Taylor also handed out an updated version of TICE titled "Isotopic Composition of the Elements 1999" (see Appendix 7).

**12. REPORT OF THE SUBCOMMITTEE FOR NATURAL ISOTOPIC FRACTIONATION**

Dr. Coplen reported that SNIF met simultaneously with SIAM.

**13. REPORT OF THE SUBCOMMITTEE FOR NON TERRESTRIAL ISOTOPIC ABUNDANCE DATA**

The Subcommittee for Non-Terrestrial Isotopic Abundance data met August 6, 1999. Their report appears as Appendix 8.

A proposal to rename the subcommittee to Subcommittee for Extraterrestrial Isotopic Abundances (SETIA) was not accepted. It was agreed that this should be delayed until the future of the Commission is settled. Additionally, it was pointed out that the Commission would likely need permission of the Division and perhaps others to change the name of the subcommittee.

The Chairman, Prof. M. Ebihara, pointed out that GCA is not currently willing to publish another review article on extraterrestrial isotopic abundance data. A new outlet for publication of this valuable data set will be sought.

A 25-page document summarizing recent non-terrestrial isotopic compositions was distributed by Prof. M. Ebihara but is not enclosed in the appendix.

**14. PUBLICATION: ATOMIC WEIGHTS OF THE ELEMENTS 1997**

It was decided that the Chairman would proceed with immediate publication of the 1997 Atomic Weights report. Figure 1 showing uncertainties of the elements would be eliminated and the text modified accordingly. Prof. E. Roth suggested modifying the title to include words indicating that isotopic compositions of extraterrestrial materials could be found inside failed to reach a consensus.

**15. PUBLICATION**

Dr. T. Coplen reported that the SNIF report titled "Isotopic Abundance Variations Of Selected Elements" (see Appendix 9) was discussed during the pre-meetings in Berlin. It was agreed that this report would be submitted for publication within 60 days.

It was reported that this report would be reduced significantly in size and submitted to the Journal of Chemical Education. It is hoped that Dr. H. S. Peiser can help prepare this document, a main purpose of which is to demonstrate that atomic weights of some elements are not invariant. It would be useful to pass this document through IUPAC's Committee on the Teaching of Chemistry prior to submission to the Journal of Chemical Education. It was suggested that this report contain sections on C, H, O, and N, but not Pd. Remarks on

applications of isotope variation would be most useful, such as forensics and medical uses (2 or 3 short examples). One example should be *Helicobacter pylori* bacterium studies (medical use).

#### **16. PUBLICATION: ELEMENT BY ELEMENT REVIEW 2000**

Prof. J. De Laeter reported on the preparation of the update to the 1984 Element by Element Review. Individuals involved in this report include Drs. H. S. Peiser, J.K. Böhlke, K. Rosman, P. De Bièvre, P. Taylor, and H. Hidaka. Each person has about 12 chemical elements to work on.

This document will contain numerous sections important for the determination of standard atomic weights, isotopic abundances, and uncertainties. Dr. Rokop mentioned the increasing importance of isotopic abundances (especially relative to atomic weights). Prof. De Laeter replied that it was the aim of members of the working party to write sections about (1) the increasing importance of isotopic abundances in medicine, (2) the importance of nuclear safeguards, (3) the proliferation of isotope mass spectrometers and the new fields in which they are used, (4) the increasing importance of isotopic reference materials, and (5) the use of isotopic dilution. It was decided that a section on the transuranic elements, written by Prof. Norman Greenwood, would be of great value.

It was decided that the working party should choose the title of its publication as it sees fit.

With regard to reviewing procedures, each element will be submitted to at least one other CAWIA member for review. To maximize review, it was decided that Prof. De Laeter would announce by email that the document was complete and ready for review. CAWIA members would then be able to obtain a copy from Prof. De Laeter.

Dr. Coplen mentioned that ultimately an electronic copy needs to be submitted to PAC for publication.

#### **17. OTHER PUBLICATIONS**

Prof. J. De Laeter reported on the fifth edition of CAWIA's handbook. He was thanked for work in preparing this valuable handbook which has numerous reports in it useful for SIAM members and new Commission members.

The Chairman asked if anyone had seen the report by Dr. Vocke and Prof. Krouse on reporting of lithium delta values, and the response was negative. The Chairman asked Dr. H. S. Peiser to add this to the list of items to be discussed with NIST personnel.

## **18. GLOSSARY OF DEFINITIONS SPECIFIC TO CAWIA (GOLD BOOK)**

It was previously recognized that many CAWIA terms are missing from the Gold Book, an IUPAC book on nomenclature. Prof. G. Ramendik was asked to prepare a list of such terms. He distributed an eight-page document of such terms (Appendix 10). Members are to review these terms within 4 months and send their comments to him (Action Item 11). By April 1, 2000, Prof. Ramendik will circulate the revised glossary to CAWIA (Action Item 14).

The Chairman suggested that a list of acronyms be prepared. Dr. Böhlke suggested that the terms in the glossary go into the Element by Element Report for 2000.

In sending attached documents, CAWIA should use Word 6.0 so that all members can open the documents (Some may not have Office 97 or Office 2000).

## **19. INTERNET**

Prof. R. Loss reported that during the last two years CAWIA's website was moved to a new server and password protection was inadvertently removed. The site will be updated and Commission documents will be added to it. Password protection will be added where needed. Eventually a mirror site should be created.

It was pointed out that PAC documents cannot appear until 12 months after their publication.

It was suggested that we can all publicize CAWIA by putting the CAWIA URL in our email addresses.

## **20. NEXT MEETING**

The next meeting will be held in Brisbane, Australia. Prof. R. Loss will search for a site for the pre-meeting.

## **21. ELECTION/MEMBERSHIP**

The results of the Commission's elections are:

- (a) Titular Members
  - Prof. L. Schultz (Chairman)
  - Prof. R. D. Loss (Secretary)
  - Dr. J.K. Böhlke
  - Prof. T. Ding
  - Prof. M. Ebihara
  - Prof. G. Ramendik
  - Dr. P. D. P. Taylor
  
- (b) Associate Members:
  - Dr. M. Berglund

Dr. C. A. M. Brenninkmeijer  
Dr. H. Hidaka  
Dr. D. J. Rokop  
Dr. T. Walczyk  
Dr. S. Yoneda

(c) National Representatives:

Prof. Paul De Bièvre (Belgium)  
Prof. J. R. De Laeter (Australia)  
Prof. C. L. Do Lago (Brazil)  
Dr. M. Shima (Japan)  
Prof. Y.-K. Xiao (China)

(d) Membership of subcommittees

1. Subcommittee for Isotopic Abundance Measurements

Dr. P. D. P. Taylor (Chairman)  
Dr. M. Berglund  
Prof. Paul De Bièvre  
Prof. J. R. De Laeter  
Dr. T. Ding  
Prof. C. L. Do Lago  
Prof. Dr. K. G. Heumann  
Dr. N. E. Holden  
Prof. R. D. Loss  
Dr. H. S. Peiser  
Dr. D. J. Rokop  
Prof. K. J. R. Rosman  
Dr. M. Shima  
Dr. T. Walczyk  
Prof. Y.-K. Xiao

2. Subcommittee for Natural Isotopic Fractionation

Dr. T. B. Coplen (Chairman)  
Dr. J.K. Böhlke  
Dr. C. A. M. Brenninkmeijer  
Prof. Paul De Bièvre  
Dr. T. Ding  
Prof. Dr. K. G. Heumann  
Dr. N. E. Holden  
Prof. H. R. Krouse  
Dr. H. S. Peiser  
Prof. G. Ramendik  
Prof. E. Roth

3. Subcommittee on Non-Terrestrial Isotopic Abundance Data  
Prof. M. Ebihara (Chairman)  
Dr. H. Hidaka  
Prof. R. D. Loss  
Prof. L. Schultz  
Dr. M. Shima  
Dr. S. Yoneda

**22. CAWIA's ARCHIVES**

Dr. Peiser reported that no activity has taken place during the last two years with the CAWIA archive.

**23. SEMINAR: PROF. C. A. BRENNINKMEIJER: NON-MASS DEPENDENT ISOTOPIC FRACTIONATIONS**

Prof. Brenninkmeijer provided a most interesting seminar to CAWIA titled "Anomalous, or not strictly mass-dependent, isotope variations observed for important atmospheric trace gases."

**24. RADIOACTIVE ISOTOPES**

Dr. N. Holden will provide an update to Table 3 of the 1999 Commission report to Dr. T. Coplen by Oct. 15, 1999.

**25. FUTURE PLANS FOR THE PRESENTATION OF ISOTOPIC ABUNDANCES**

There was considerable discussion about revision in the format of TSAW and TICE in order to show more information to users. The Chairman distributed a document titled "An Experimental Design for the Table of Standard Atomic Weights Based on a Combination of Experimental Uncertainties and Natural Variabilities to Provide 'Incertitudes' in Agreement with the Current 'Standard' Range of Atomic-Weight Values" by H. S. Peiser, J.K. Böhlke, and T. B. Coplen (Appendix 11).

Dr. J.K. Böhlke distributed a document titled "JKBs.DOC -incomplete draft (JK Bohlke) 08/08/99" that discussed the format of TSAW, the format of TICE, and the definition of the standard atomic weight (Appendix 12). Dr. J.K. Böhlke was asked to form a working party under SNIF to consider new rules and a new format for displaying Tables of the Commission (Table of Standard Atomic Weights and the Table of Isotopic Compositions of the Elements).

**26. CURRENT AND PLANNED WORK OF CAWIA MEMBERS**

No discussion occurred under this topic.

**27. PUBLICATIONS OF CAWIA MEMBERS**

Members were asked to send their publications in PAC format to Prof. R. Loss who would

then put them on the CAWIA website.

## **28. OTHER BUSINESS**

The next meeting will be held in Brisbane, Australia. Prof. R. Loss will search for a site for the pre-meeting.

An agenda item for 2001 needs to be, "What should the role of SNIF be?" Should SNIF continue updating variations currently studied elements, in new elements, or both?

## **29. SUMMARY OF MEETING SENT TO THE INORGANIC DIVISION BY THE CHAIRMAN**

### **Commission II.1 Atomic Weights and Isotopic Abundances (CAWIA) Report 1998-1999**

The Titular and Associate members, National Representatives and Observers present at the Commission II.1 Meeting of the General Assembly of IUPAC in Berlin were: L. Schultz (Chairman, Germany), J.K. Böhlke (USA), M. Ebihara (Japan), R.D. Loss (Australia), G.I. Ramendik (Russia), P.D.P. Taylor (Belgium), T. Ding (PR China), D.J. Rokop (USA); S. Yoneda (Japan), J.R. De Laeter (Australia). P. De Bièvre (Belgium), M. Shima (Japan), M. Berglund (Belgium), C. Brenninkmeijer (Germany). C. Buès (France), T. Coplen (USA), K.G. Heumann (Germany), N.E. Holden (USA), H.S. Peiser (USA), E. Roth (France), T. Walczyk (Switzerland).

After the agenda was adopted, Dr. T.B. Coplen agreed to act as the Secretary of this meeting because Dr. R.D. Vocke was not able to attend.

L. Schultz briefed the members on the discussions in the Division Meetings held in December 1998 and prior to this meeting. Especially the changes proposed by IUPAC and its implications to the work of the Commission were discussed. All members agreed that this work cannot be carried out in a project driven system without the umbrella of a Commission.

Next came the biannual review of the atomic weights based on the reports from the Subcommittees for Isotopic Abundance Measurements (SIAM), Natural Isotopic Fractionation (SNIF), and Non-Terrestrial Isotopic Abundance Data (NT). The Subcommittees had met on August 5 and 6, 1999 at the Concept Hotel in Berlin and made recommendations to change or modify entries for the following elements: N, S, Cl, Ge, Se,

Xe, Er, and U. The changes will be reflected in the *Table of Atomic Weights 1999* which will be submitted for publication in PAC before the end of the year. This publication will also contain data from the NT-Subcommittee describing the influence of extinct radionuclides on isotopic abundances of Meteoritical matter.

A draft of SNIF on *Isotopic Abundance Variations of Selected Elements* was discussed which summarizes natural isotopic variations of 14 elements. This paper shows that variations in atomic weights can be significantly larger than the uncertainties of measurements. This major paper of Commission II.1 will be submitted to PAC within the next 6 months. Furthermore, progress of *The Year 2000 Element by Element Review of the Atomic Weights* was discussed. This paper is prepared by 6 members of Commission II.1 who met in Berlin on August 7, 1999. Publication is planned in PAC in the year 2000.

The Commission also works on a *Glossary of Definitions Specific to CAWIA*. The individual entries will circulate within Commission II.1 during the next 3 month. Two observers presented short lectures on *Anomalous Isotope Variations observed for Atmospheric Trace Gases* (C. Brenninkmeijer) and on *History of the Mole Concept* (C. Buès).

The NT-Subcommittee has collected a large number measured isotopic abundances in extra-terrestrial materials. These data must be summarized in a specific paper. A draft should be available at the next General Assembly in Brisbane.



### 30. LIST OF APPENDICES HEREIN

2. Action Items from the 1999 Meeting in Berlin.

## APPENDIX 2

### ACTION ITEMS FOR 1999

1. By September 15, 1999 Dr. T. Coplen will write a paragraph on N to explain its new standard atomic weight. **COMPLETED**
2. By September 15, 1999 Dr. J.K. Böhlke will write a paragraph on S to explain its new standard atomic weight.
3. By September 15, 1999 Dr. T. Walczyk will write a paragraph on Ge to explain its new standard atomic weight. **COMPLETED**
4. By September 15, 1999 Prof. L. Schultz and Dr. P. Taylor will write a paragraph on Xe to explain its new standard atomic weight.
5. By September 15, 1999 Prof. K. Heumann will write a paragraph on Er to explain its new standard atomic weight. **COMPLETED**
6. By September 15, 1999 Dr. D. Rokop will write a paragraph on U to explain its new standard atomic weight.
7. Dr. T. Coplen will submit the SNIF report on isotopic variation of about a dozen elements to PAC.
8. Dr. T. Coplen will contact Dr. R. Vocke and obtain the manuscript on reporting of delta Li-7 values in Microsoft Word for submission to PAC. **COMPLETED**
9. Dr. T. Coplen will contact Prof. H. R. Krouse and encourage publication of the manuscript on reporting of delta Li-7 values in Nature. **COMPLETED**
10. By October 1, 1999 Prof. M. Ebihara will provide Dr. T. Coplen with the section on non-terrestrial isotopes for the 1999 Commission report.
11. All members are requested to look at glossary items within 4 months and send their comments to Prof. G. Ramendik.

12. By October 15, 1999 Prof. P. De Bièvre will distribute terms to be included in ISO terminology. **COMPLETED**
13. By December 15, 1999 all members will review terms sent to them by Prof. P. De Bièvre (see Action Item above).
14. By April 1, 2000 Prof. Ramendik will respond to CAWIA members about the latest version of the glossary.
15. By October 15, 1999 all CAWIA members can submit references from the last 2 years to Prof. R. Loss for inclusion on CAWIA's website.
16. By September 15, 1999 Dr. T. Coplen will write a paragraph on CI to explain its new standard atomic weight.
17. Dr. J.K. Böhlke will form a working party under SNIF to consider new rules and a new format for displaying Tables of the Commission (Table of Standard Atomic Weights and the Table of Isotopic Compositions of the Elements).
18. All members will respond to Prof. J. De Laeter about Dr. J.K. Böhlke's 4-page document titled "JKBs.DOC -incomplete draft (JK Bohlke) 08/08/99".
19. Dr. T. Coplen will provide a paragraph or two to Chemistry International about accomplishments of the Berlin meeting. **COMPLETED**
20. Dr. T. Coplen will provide a copy of the Minutes of the Commission meeting in Berlin to CAWIA members by November 1, 1999. **COMPLETED**