

Some remarks to the forthcoming SCOPE/IUPAC Meeting in Paris (11.12.95)

As far as the main goal of the forthcoming meeting is concerned, it seems desirable to attract attention of the two sides to some possibilities and difficulties on the way to more close collaboration between IUPAC and SCOPE.

Both IUPAC and SCOPE are striving to identify more exactly their role in 21st century in the context of growing global mankind's problems.

The 38th IUPAC General Assembly (Guilford, UK, August 1995) decided to continue efforts to restructure the Union. In particular, two new divisions (Chemistry and Environment Division and Chemistry and Human Health Division) were established on the basis of the former Applied Chemistry Division, Clinical Chemistry Division, and Medical Chemistry Section. This opens some new possibilities for collaboration of IUPAC with SCOPE.

The 9th SCOPE General Assembly (29 May - 3 June 1995, Tokyo) discussed the situation with the projects of the SCOPE 1993-95 Programme. The Assembly decided to terminate some of the projects, to launch several new projects, and to reconsider the cluster structure of the Programme for the following years. The priorities of the SCOPE Programme are partly shifted from physico-chemical and biological problems to socio-economic and eco-engineering ones. This fact bounds the possibilities of IUPAC-SCOPE collaboration in the framework of the SCOPE ongoing projects.

For example, the following projects which are of interest for IUPAC are to be terminated by the end of 1996:

- Organic Matter Budgets (1994);
- Phosphorus Cycles (1995);
- Effects of UV-B Radiation on Biological Systems (suspended for 3 years);
- Groundwater Contamination (1996).

It seems desirable to draw attention to the following SCOPE projects that are currently underway and are of interest for IUPAC:

- Evaluation of the Role and Distribution of Mercury in Ecosystems;
- SGOMSEC;
- Radiation from Nuclear Tests Explosions (RADTEST);
- Nitrogen Transport and Transformation.

Previous attempts to stimulate active participation of IUPAC representatives in some now-terminated and ongoing SCOPE projects have met with only limited success. How can we estimate the possibilities for the IUPAC involvement in the ongoing SCOPE projects?

The Mercury Cycling SCOPE project is carried out quite satisfactorily. Three experts recommended by IUPAC (Dr. R. Mason, USA; Dr. D. Cossa, Canada; Prof. J. O. Nriagu, USA) have presented their papers to the NATO-SCOPE Advanced Research Workshop "Regional and Global Mercury Cycles: Sources, Fluxes, and Mass Balances" (Novosibirsk, Russia, July 1995). But unfortunately none of them accepted the ARW Organizing Committee request for preparing a review report devoted to the development of mercury determination methods applied to atmosphere, water, soil, and biological tissues with reestimation of accuracy of the methods used during the last 20-30 years. Such a review is necessary to compare the data published during this period. This problem is still very important for the Mercury Cycling project and IUPAC (may be Commission V.2 on Microchemical Techniques and Trace Analysis) can enter the project through this problem.

The SCOPE SGOMEC project (Scientific Group on Methodology for Safety Evaluation of Chemicals) established in 1980 under the aegis of SCOPE and IPCS (International Programme on Chemical Safety, which is in itself a joint venture of WHO, ILO, and UNEP) develops quite successfully since that time. I have no information on collaboration of IUPAC with SCOPE and IPCS in this area but in any case I am sure that some representatives of the IUPAC Division on Chemistry and Human Health (particularly, of the Commission VII.C.2 on Toxicology) should actively participate in this long-standing SCOPE project.

The RADTEST project (the continuation of the completed RADPATH project) is in advanced stage of its development. Since 1990 all attempts to involve IUPAC representatives first to the RADPATH activity and then to the RADTEST project have practically failed. The last example is the futile attempt to invite IUPAC representatives to participate in the NATO-SCOPE Advanced Research Workshop "Long-Term Consequences of Nuclear Tests for the Environment and Population Health" (Barnaul, Russia, September 1994).

Having in mind these failures I believe that the entering of IUPAC in some ongoing SCOPE projects and vice versa are important but not the most efficient way to broadening collaboration between the two bodies. Preparation of new projects of mutual interest seems more promising. For

example, as to the projects of RADPATH and of its successor RADTEST, it seems desirable to discuss a possibility of launching a new (third) project devoted to very important problem of safe disposal of radioactive wastes produced in the course of nuclear power generation and in related industries.

In connection with the current structural reorganization of IUPAC there are several topics under discussion, which may be of interest for SCOPE as well. These are, for example:

in the area of nature conservation:

- Oil Spill Clean-Up and Remediation,
- Remediation of Heavy Element Contaminated Sites;

in the area of climate change problem:

- Alternative Scenarios for Energy Production in the Future,

in the area of sustainable agriculture:

- Analytical and Physical Chemistry of Soils,
- Environmental Safety Assessment of Agrochemicals.

Problems of sustainable agriculture are very important and should find an adequate reflection in the activity of IUPAC and SCOPE. According to FAO conclusions the world food production must be doubled by the year 2025 but further increasing usage of synthetic pesticides is very dangerous for the environment. What might be done?

Among new proposals presented to the 9th SCOPE General Assembly there is a project "Sustainable Use of Boreal Forest Systems". It deals with another important topic - sustainable management of renewable resources as the source of raw materials for the main part of production in the future. This project is also of interest for IUPAC in connection with the necessity of further development of the chemistry of forest and other natural products.

That is why I believe that our efforts went into broadening the collaboration between IUPAC and SCOPE should be directed first of all to clarification of the overlap of IUPAC and SCOPE nearest future priorities oriented to global problems of the mankind. Preliminary discussion of the situation in each overlapping area and scientific gaps in them could be organized in the framework of goal-oriented workshops sponsored by NATO, EC and host countries.

Prof. V. Koptug

December 4, 1995

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Some remarks to the forthcoming
SCOPE/IUPAC meeting in Paris (11.12.85)

Bearing in mind the main goal of the forthcoming meeting it seems desirable to attract the attention of both sides to some possibilities and difficulties existing on the way to more close collaboration between ~~SCOPE~~ IUPAC and SCOPE.

Both IUPAC and SCOPE are striving to identify ^{more exactly} their role in 21 century in ^{the} context of growing global mankind's problems.

The 38th IUPAC General Assembly (Guilford, UK, August 1985) decided to continue efforts relating to restructuring the Union. In particular, two new Divisions (on Chemistry and the Environment, and Chemistry and Human Health) were established on the basis of ^{the} former Applied Chemistry Division, Clinical Chemistry Division and Medicinal Chemistry Section. This opens some new possibilities in collaboration of IUPAC with SCOPE. (29 May - 3 June 1985, Tokyo)

The IXth SCOPE General Assembly discussed the situation with projects of ^{the SCOPE} ~~previous~~ ~~biennial~~ 1983-85 Programme. ^{The Assembly} decided to terminate some of them, and launch some new projects and to

reconsider the cluster structure of the Programme for ^{the following} next years. The ^{priorities of ICR} new SCOPE Programme is ^{also}

shifted partly from physico-chemical and biological problems to socio-economic and engineering ones. This ^{bounds} fact ^{to} diminishes possibilities of ICRAC and SCOPE collaboration in the framework of the SCOPE on-going projects

[For example] ~~up to~~ ^{by} up to the end of 1986 the following interesting for ICRAC projects will be terminated:

- Organic Matter Budgets (1984);
- Phosphorus Cycles (1985);
- Effects of UV-B Radiation on Biological Systems (suspended for 3 years);
- Groundwater Contamination (1986)

Among ^{SCOPE} projects that are ^{up to now} being continued and are of interest for ICRAC ^{the following should be interesting} it seems desirable to call attention to the following ones:

- Evaluation of the Role and Distribution of Mercury ⁱⁿ on Ecosystems;
- SGOMSEC;
- Radiation from Nuclear Tests Explosions; ^(CRADTEST)
- Nitrogen Transport and Transformation.

Previous attempts to stimulate ^{active participation of} ICRAC representatives /to participate actively/ in some

■ new-terminated and outgoing SCOPE projects have met with only limited success ^{we can estimate} gave not too much results. How ~~are~~ ^{are} possibilities for IUPAC ~~at~~ ^{involvement} entering in the ~~the~~ outgoing SCOPE Projects?

The Mercury Cycling SCOPE project is ^{carried out} developing quite well. Three experts recommended by IUPAC (Dr. R. Mason, USA; Dr. D. Corra, Canada; Prof. J. O. Nriagu, USA) have presented their papers to the NATO-SCOPE Advanced Research Workshop "Regional and Global Mercury Cycles: Sources, Fluxes and Mass Balances" (~~Russia~~ (Novosibirsk, Russia, July 1995). But unfortunately ^{none} nobody of them ^{accepted} responded to the ^{ARW} Organizing Committee request ^{for} preparing a review report devoted to ^{the} development of mercury determination methods applied to atmosphere, water, soil and biological tissues with reestimation of ^{the} accuracy of ^{the} methods used during ^{the} last 20-30 years. Such ^a review is ^{required to} necessary ^{compared} for comparison ^{the} data published during this/indicated/period. This problem ^{is still} continues to be very important for the Mercury Cycling project and IUPAC (may be Commission V.2 on Microchemical Techniques and Trace Analysis) can enter ~~into~~ the project through this problem.

The SCOPE S^EDOMSC project (~~the~~ (Scientific Group on Methodology for Safety Evaluation of Chemicals) was established in 1980 under the aegis of SCOPE and IPCS (International Programme on Chemical Safety, that ^{itself} is ^{joint} venture of WHO, ILO and UNEP) and is developing ^(from that time) quite successfully. I have no information on collaboration of IUPAC with SCOPE and IPCS in this area but in ^{any} ~~every~~ case I am sure that ^(some representatives of) the new IUPAC Division on Chemistry and Human Health (particularly ^{of} the Commission \S VII.C.2 on Toxicology) should ^{participate} ~~in~~ actively in this long-standing ^(SCOPE) project.

The RADTEST project (the continuation of the completed RADPATH project) is in advanced stage of development. ^{since} All attempts (starting from 1980) to involve IUPAC representatives first to the RADPATH ^{practically} activity and then to the RADTEST projects ^{practically} have failed. ~~last~~ The last example ^{is} ^{fruitless} unsuccessful attempt to ^{invite} ~~include~~ IUPAC representatives for participation in ~~in the programme of~~ the NATO-SCOPE Advanced Research Workshop "Long-Term Consequences of Nuclear Tests for the Environment and Population Health" (Barnaul, Russia, September 1984).

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Having in mind these failures I believe that the entering of ~~the~~ IUPAC in ~~the~~ ^{some} ongoing SCOPE projects and vice versa are important but not the most efficient way to broadening collaboration between ~~the~~ two bodies. More perspective way seems ~~to~~ to be a preparation of new ^{projects of} mutually interesting ^{seems more promising} projects. For example, ^{as to} bearing in mind RADPATH and its successor RADTEST ^{projects} it seems desirable to discuss a possibility of launching a new (third) project devoted to a very important problem of safe disposal of radioactive wastes produced ^{in the course of} by the nuclear power generation and related industries.

In connection with the ^{current} carrying out structural reorganization of IUPAC there are, under discussion several ~~them~~ topics, that ^{which} may be ^{of} interesting for SCOPE ^{as well} also. For example:

in the area of nature conservation:

- Oil Spill Clean up and Remediation,
- Remediation of Heavy Element Contaminated Sites;

in the area of climate change problem:

- Alternative Scenarios for Energy Production in the Future;

in the area of sustainable agriculture:

- Analytical and ~~ph~~ Physical chemistry of Soils,
- Environmental Safety Assessment of Agro-chemicals.

Problems of sustainable agriculture are very important and should ^{found} take an adequate ^{reflection} place in the activity of IUPAC and SCOPE. According to FAO conclusions the ^{world} food production must be doubled ^{by} to the year 2025 but ^{the} further increasing ^{of} synthetic pesticides using is very dangerous for the environment. What might be done?

~~Before~~ Among new proposals presented to the 18th SCOPE General Assembly there is a project "Sustainable Use of Boreal Forest Systems". It ^{deals with} relates to another important topic - sustainable management of renewable resources ~~as~~ as the ~~main~~ source of raw materials for the main part of production in ^{the} future. This project is interesting also for IUPAC in connection with the necessity ^{of human development} to develop further ^{of} the chemistry of forest and other natural products.

That is why ~~I~~ I believe that our efforts devoted to ^{the} broadening ^{the} collaboration between IUPAC and SCOPE should be directed first of

all ^{to} on the ~~recognizing~~ clarification of overlap of IUPAC and SCOPE nearest future priorities. orientated ^{to} ~~the~~ global problems of the mankind. Preliminary discussion of ^{the} ~~the~~ situation in each overlapping areas and scientific gaps in them could be organized in the framework of goal-oriented workshops sponsored by NATO, EC and host countries

Prof. V. Kopyug
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