Council of Europe
Conseil de l'Europe

Strasbourg, 31 July 1996
[S:\TPVS96\TPVS33E.96]

T-PVS (96) 33
Or. Eng.

CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

GROUP OF EXPERTS ON CONSERVATION OF INVERTEBRATES

4th meeting
Killarney National Park, Co. Kerry, Ireland
29 May 1996

Secretariat Memorandum
established by the
Directorate of Environment
and Local Authorities

The Group of Experts on Conservation of Invertebrates held its fourth meeting in Killarney (Ireland) on 29 May 1996, in accordance with the terms of reference set up by the Standing Committee.

The Standing Committee is invited to:

1. Take note of the report of the meeting.

2. Take note, in particular of the suggestions concerning the following issues (see Appendix 5):

   2.1 implementation of previous recommendations
   2.2 invertebrate survey in Environmental Impact Assessment
   2.3 survey of *Elona quimperiana*
   2.4 *Carabus menetriesi* in Germany
   2.5 *Carabus olympiae* in Italy
   2.6 Survey of Madeira snails
   2.7 Survey of invertebrates in Portugal.

3. Examine and, if appropriate, adopt the following draft recommendations:

   3.1 on conservation of *Margaritifera auricularia* (Spain, France, Italy) (see Appendix 4)
   3.2 on invertebrate species requiring urgent recovery plans (or Action Plans) (Appendix 6)
   3.3 on habitat conservation for invertebrates (see Appendix 7).

4. Take note of the proposal concerning conservation of marine ecosystems (see Appendix 8) and discuss future action of the Convention on that topic.

5. Take note of the experts' recommendations concerning saproxylic invertebrates (Appendix 9).

6. Take note of the wish of the Group to work, as a matter of priority, on the amendment of Appendix II of the Convention to include new invertebrate species.

7. When adopting the programme and budget take into account the two following activities:

   7.1 A report on threatened butterflies. The 1981 report made by Dr John Heath for the Council of Europe is outdated. An updated report would permit the gathering of necessary information to amend Appendix II and identify populations requiring Action Plans.

   7.2 Report on Trichoptera. This is a major group which helps assess the conservation value of aquatic ecosystems. The study should explore the detection of indicating species for wetland and river quality.

1. Opening of the meeting

The Chairman, Peter van Helsdingen (The Netherlands), welcomed participants and opened the meeting.

A list of participants appears in Appendix 1 of this document.

2. Adoption of the agenda

The agenda was adopted as it figures in Appendix 2 to this document.

3. Secretariat report

The Secretariat informed the Group that, following the suggestions made by the Group of Experts in 1994, the Standing Committee of the Convention had agreed to organise, together with the Irish authorities, a seminar on habitat conservation for invertebrates. The report made by Mr Koomen and Mr van Helsdingen on habitats of importance for invertebrates was to be published by the Council of Europe shortly and would be sent to members of the Group. The Standing Committee had taken note of the work of the Group, encouraged Parties to implement Recommendations Nos. 22 and 35 and accepted to continue to enlarge the study on saproxylic species to Eastern Europe.

The Secretariat informed the Group that the Bern Convention had now 33 Contracting Parties and that it was to be closely associated with the implementation of the Pan-European Biological and Landscape Strategy endorsed by the European Ministers of Environment meeting in Sofia in October 1995. The Bern Convention would, in particular, launch a European Action Programme on threatened species aimed at coordinating species conservation action carried out at the European level. One of the results of that programme would be the elaboration and implementation of Action Plans for particularly threatened species. The Group of Experts was to play a fundamental role in promoting and guiding the Strategy regarding invertebrate species.

The Secretariat stated that France and Monaco intended to present a list of marine species in the Mediterranean for amendment of Appendices I to III to the Bern Convention. The list includes over 20 species of invertebrates.

The Chairman welcomed this news and noted how two of the wishes expressed by the Group (an improvement in the marine species listed and the elaboration of more complete data sheets for invertebrate species) were being dealt with. He informed the Group that he had had the chance to coordinate the compilation of the report "Background Information on Invertebrates of the Habitats Directive" which had been financed by the European Commission. He was particularly glad that the Council of Europe had agreed to publish that report, in its Nature and Environment series which would be a very important document to guide conservation action of governments on species protected by the Bern Convention. Some experts wished that the document be circulated to experts for comment but they were informed that this was not possible as the permission that had been obtained by the Commission to publish the report did not include any new amended version.

As for marine species, the Secretariat informed the Group that a first list for the Mediterranean was to be presented by Monaco for amendment of the Convention.

Most of the experts present expressed the view that it had been particularly useful to hold the meeting of the Group in coordination with a scientific seminar as it had permitted other scientists to be aware of the work of the Group. The Group wished this formula to be

repeated. The Secretariat promised to look into it, taking into account the budgetary implications. It was not certain that it could be done for all meetings of the Group but it remained open to examine possible offers from States.

4. Progress in invertebrate conservation since the last meeting

The delegates of Austria, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, The Netherlands, Spain, Switzerland and the United Kingdom presented reports. The delegate from the Nature Topic Centre of the European Environment Agency also presented a report on the activities of the Centre. These reports are in Appendix 3 to this document.

The general feeling was that there had been progress in conservation of invertebrates in the last two years but that many species were still close to extinction so that conservation action needed to be reinforced. Progress was in particular good in European Union States, which were making quite an important effort to review the status of species listed in the Habitats Directive (a nearly similar list to that of the Bern Convention) so that key areas were to be included in the NATURA 2000 network. Particularly good news was the adoption of Action Plans for threatened invertebrates by some States and the finding, following a recommendation of the Standing Committee, of a population of *Margaritifera auricularia* in Spain. In relation to this species, the Group invited the Standing Committee to examine the draft recommendation found in Appendix 4 to this document.

The Group also made some recommendations regarding some species under threat. These are found in Appendix 5 to this document.

5. Action Plans for invertebrates: selection of species

The Secretariat informed the Group that the Bern Convention was to play an important role in the implementation of the Pan-European Biological and Diversity Strategy, in particular in coordination of its Action Theme 11 through the elaboration of a European Action Programme on threatened species. As the Group would not meet till 1998, it was convenient that it marked its preferences for some species which may be subject to European Action Plans.

The Group discussed this matter and agreed to the following:

A. Endemic species are the main responsibility of one State, so that all endemic invertebrate species (listed or not in the Appendices to the Convention) which are "critically endangered" or "endangered" should be subject to recovery plans by the State in which they appear.

B. For non endemic species a first, provisional and non comprehensive list would be provided. The species were chosen taking into account the following criteria:

- the species is internationally threatened
- European States have a particular responsibility for the species
- the species is declining severely.

A draft recommendation including a first list is found in Appendix 6 to this document. The Group decided to review the list at its next meeting.

6. Habitat conservation for invertebrates. Species requiring special habitat conservation

measures

Following the results of the seminar held before the meeting of the Group, it was felt that habitat management should be pursued as one of the main conservation tools for threatened species. The Group wished that a draft recommendation such as the one presented in Appendix 7 of this document, be submitted to the Standing Committee of the Convention for adoption.

Regarding species requiring special habitat conservation measures, the Group recalled that they had been asked by the Standing Committee to make a proposal (found in document T-PVS (95) 15) but that the final proposal made by the consultant (document T-PVS (95) 15 revised) was substantially different. The Group expressed its dissatisfaction. The Secretariat explained that the proposal made by the Group had indeed been submitted to the Standing Committee but that the Committee had wished it to be modified to put it in line with the Habitats Directive, so that the consultant was not to blame. The Group wondered whether it was convenient that the work of the Convention, comprising 33 Parties, had necessarily to follow decisions made only by the 15 States of the European Union. The Group recommended to the Standing Committee that the list of species requiring special habitat conservation measures be revised in the light of the conclusions of the report "Background information on invertebrates of the Habitats Directive and the Bern Convention".

7. Habitats of particular importance for invertebrates

7.1 Marine ecosystems

The Group considered that marine ecosystems were of paramount importance to invertebrate conservation but had been neglected in the Convention. No marine species were listed and no activities on marine invertebrates were being carried out. The Group believed this needed to be changed and made a recommendation to the Standing Committee in that sense (see Appendix 8).

The Secretariat informed the Group that the activities of the Bern Convention were much limited by budgetary matters and by the small staff serving the Convention. Nevertheless, a list of marine plants and invertebrates from the Mediterranean was soon to be added to Appendices I, II and III of the Convention.

7.2 Old-growth forests (saproxylic invertebrates)

Dr Jervis Good and Dr Martin Speight presented the report entitled "Saproxylic invertebrates and their conservation throughout Europe" (T-PVS (96) 31).

The report revised previous lists of indicator species for Europe, chosen from a range of insect families with mostly or partly saproxylic habits. It proposed that management of habitats for saproxylic species be incorporated into regular forest management. The report proposed that new species of saproxylic invertebrates be added to Appendix II of the Convention.

The Group proposed that the Standing Committee take note of its recommendation concerning saproxylic invertebrates (see Appendix 9).

7.3 High-mountain ecosystems

Dr Haslett presented a short report on the work of the subgroup that has been dealing with high-altitude invertebrates (see Appendix 10).

The Group welcomed the news from this subgroup, proposed that it continued its work and suggested that a future seminar be devoted to high-mountain invertebrates, to be organised in coordination with a meeting of the Group. Austria was mentioned as a possible place for such a seminar.

8. Collecting invertebrates

Dr Stuart Ball informed the Group that he was working on a report on the problems posed to entomologists by legal restrictions to collection introduced by most Contracting Parties to the Convention. This report will also deal with the risks to invertebrate populations from collecting activities. The Group invited Dr Ball to present the report at its next meeting and encouraged participants to collaborate with Dr Ball, mainly by sending him comments and informing him on the legal requirements for collection of protected invertebrates in the different European States.

9. Suggestions for invertebrate conservation activities within the framework of the Convention for 1997 and 1998

The Group discussed in detail the priorities for action on invertebrate conservation in the framework of the Bern Convention, taking also into consideration the need to implement the Pan-European Strategy. The Group expressed very firmly the view that the first priority regarding its mandate would be to make proposals for amendment of Appendix II of the Convention. The present list in Appendix II is, according to the Group, largely inadequate and incomplete and it needs revision. Only one delegate disagreed on this point. Thus the Group requested the Standing Committee to consider the inclusion in their future work programme the following activity:

- Report on threatened Rhopalocera (butterflies)

  The report will be a compilation of conservation information on European Rhopalocera (butterflies) and will include the following items:

  - an introduction on the threats to European butterflies
  - a checklist of European butterflies
  - data sheets of threatened butterfly species, with cartographical information
  - a list of butterfly species that might be good candidates for inclusion in Appendix II of the Convention
  - proposals for action

10. Election of Chairman and Vice-Chairman

Mr Legakis (Greece) was elected Chairman and Mr Gonseth (Switzerland) Vice-Chairman.

The Group and the Secretariat unanimously thanked and congratulated Dr van Helsdingen for having so successfully conducted the work of the Group since 1992.

11. Other business

Members of the Group were invited to submit short articles on entomological news to the journal "Insectes". Texts can be sent to Mr R. Guilbot (France).

APPENDIX 1

LIST OF PARTICIPANTS

Austria/Autriche Dr John HASLETT, Universität Salzburg, Zoologisches Institut, Hellbrunnerstrasse 34, A 5020 SALZBURG, Autriche (E)
Tel. 0662/8044-5600 Fax 0662/8044/5698

Belgium/Belgique Dr Marc DUFRÊNE, SIBW-MRW-DGRNE, Unité d'écologie et de Biogéographie, Place Croix du Sud 5, B-1348 LOUVAIN-LA-NEUVE
Tel. 00-32-10-47-34-81 Fax 00-32-10-47-34-3 (F)

Dr Dirk MAES, Institute of Nature Conservation, Klinlekstraat 25, B-1070 BRUSSELS
Tel. 00-32-2-558-1837 Fax 00-32-2-658 1805 (E)

Denmark/Danemark Mr Claus GOLDBERG, Biologist, Ministry of the Environment, The National Forest and Nature Agency, Haraldsgade 53, DK-2100 København Ø
Tel. 00-45-39472000 Fax 00-45-39279899 E-mail: CGO@SNS.DK (E)

Finland/Finlande Mr Ilmari VALOVIRTA, Finnish Museum of Natural History, PO Box 17, FIN 00014 HELSINKI (E)
Tel. 00-358-0-1917451 Fax 00-358-0-191744 E-mail: Ilmari.Valovirta@Helsinki.fi

France Mr Jean-Claude DAUVIN, Muséum National d'Histoire Naturelle, Laboratoire de Biologie des Invertébrés marins, 57 rue Cuvier, 75231 PARIS CEDEX 05
Tel. 33-1-40 793591 Fax 33-1-40 793109 (F)

Mr Robert GUILBOT, OPIE, BP 9, F-78041 GUYANCOURT CEDEX (F)
Tel. (1) 30 44 13 43 Fax (1) 30 83 36 58

Professor Jacques LHONORÉ, Université du Maine, Laboratoire de Biosystématique des Insectes, Faculté des Sciences, BP 535, F-72017 LE MANS CEDEX (F)
Tel. 00-33-43-83-32-51 Fax 00-33-43-83-33-66 E-mail: Lhonoré@aviion.univ-lemans.fr

Professeur Jean-Pierre LUMARET, Université Montpellier, Laboratoire de Zoogéographie, B.P. 5043, F-34032 MONTPELLIER CEDEX 1 (F)
Tel. 00-33-67-14-23-16 Fax 00-33-67-14-24-59

Mr Jean-Claude MALAUSA, INRA, Laboratoire Biologie des Invertébrés, 1382 Route de Biot, F-06560 VALBONNE Tel. 00-33-9312 0655 Fax 00-33-9312-2528 E-mail: - (F)

Germany/Allemagne Mr Horst GRUTTKE, Bundesamt für Naturschutz, Konstantinstraße 110, D-53179 BONN, Allemagne (E)
Tel. 00-49-228 8491 105 Fax 00-49-228-8491- E-mail: None

Greece/Grèce Mr Anastasios LEGAKIS, Athens University, Zoological Museum, School of Biology, Panepistimiopolis, GR 157 84 ATHENS (E)
Fax +30-1-7284604 E-mail: ALEGAKIS@ATLAS.UOA.GR

Hungary/Hongrie Mr András AMBRUS, Inspector of Nature Conservation, Hortobágy National Park, Sumen u.2, H-4024 DEBRECEN (E) (**Postal address**: Jurisich u. 16, H-9495 KOPHAZA - Tel. 36-99 357 347 Fax 36 52 410 645 E-mail: TOCS@MOBK.ZPOK.Hu

Iceland/Islande Mr Erling OLAFSSON, Icelandic Institute of Natural History, P.O.Box 5320, ISL 125 REYKJAVIK Tel. 00-354-562 9822 Fax 00-354-562 0615 (E)

Ireland/Irlande Mr Mark COSTELLO, Environmental Sciences, Trinity College, IRL DUBLIN 2 Tel. 353-1-608 2075 Fax 353-1-671 8047 E-mail: - (E)

Dr Jervis GOOD, Terrascope Environmental Consultancy, Glinny House, RIVERSTICK, Co. Cork Tel. 021-771 325 Fax 021-771 469 (E)

Dr Martin C.D. SPEIGHT, National Parks & Wildlife Service, 51 St Stephen's Green, IRL DUBLIN 2 Tel. 353 1 6113111 Fax 353 1 6620283 (E)

Netherlands/Pays-Bas Mr Jacobus Joseph van BAARSEN, Rondeweiweg 1-B, NL 3235 CN ROCKANGE Tel. 00-31-181-403234 (E)

Mr Peter J. van HELSDINGEN (Chairman/Président), Stichting European Invertebrate Survey - Nederland, Natural History Museum, Raamsteeg 2, NL 2311 PL LEIDEN (E)
Tel. 31-(0)71 516 2620 Fax 31-(0)71 512 4823 E-mail: ENT@NNM.NL

Portugal M. Miguel ARAUJO, Universidade de Evora, Centro de Ecologia Aplicada, Largo dos Coleglais 2, P-7001 EVORA CODEZ Tel. 00-351-66-740868 Fax 00-351-66-744968

Slovakia/Slovaquie Mr Peter GAJDOS, Institute of Landscape Ecology, Slovak Academy of Sciences (Ustav krajinnej ekológie SAV), Akademická 2, PO Box 23/B, 949 01 NITRA (E)
Tel. 00-42-87-356-02/3 Fax 00-42-87-356-08 E-mail: PGAJDOS@SAVBA.SAVBA.SK

Spain/Espagne Mr Rafael ARAUJO, Museo Nacional de Ciencias Naturales, Jose G. Abascal 2, E-28006 MADRID Tel. 00-34-1-41 11328 Fax 00-34-5645078

Dr Maria Angeles RAMOS, Museo Nacional de Ciencias Naturales, Jose G. Abascal 2, E-28006 MADRID
Tel. 00-34-1-41 11328 Fax 00-34-5845078 E-mail: MARAMOS@PINAR1.CSIC.ES

Switzerland/Suisse M. Yves GONSETH, Centre suisse de cartographie de la faune (CSCF), Musée d'histoire naturel de Neuchâtel, Terreaux 14, CH 2000 NEUCHATEL, Suisse (F)
Tel. 00-41-38-257-257 Fax 00-41-38-207-969 E-mail: GONSETH@CSCF.UNINE.CH

United Kingdom/Royaume-Uni Dr Keith ALEXANDER, The National Trust, 33 Sheep Street, GB CIRENCESTER Glos. GL7 1RQ, Grande Bretagne(E)
Tel. 00-44-1285-651818 Fax 00-44-1285-657935

Dr Stuart BALL, Joint Nature Conservation Committee, Monkstone House, City Road, GB PETERBOROUGH PE1 4BH (E)
Tel. 00-44-1733-62626 Fax 00-44-1733-555948 E-mail: Ball_S@JNCC.GOV.UK

Mr Paul T. HARDING, Head, Biological Records Centre, Environmental Information Centre, Institute of Terrestrial Ecology, Monks Wood, Abbots Ripton, GB HUNTINGDON Cambs. PE17 2LS (E)
Tel. 44-(0) 148 77 73 381 Fax 44-(0) 148 77 73 467 E_mail: PHA@WPO.NERC.AC.UK

European Environment Agency/Agence Européenne de l'Environnement M. François BOILLOT, Centre Thématique Européen pour la Conservation de la Nature, Agence Européenne de l'Environnement, Muséum National d'Histoire Naturelle, 57 rue Cuvier, 75231 PARIS CEDEX 05 (F)
Tel. 33-1-40793870 Fax 33-1-40793867

Secretariat

Mr Eladio FERNANDEZ-GALIANO, Council of Europe/Conseil de l'Europe, Environment Conservation and Management Division, F-67065 STRASBOURG CEDEX, France
Tel. (33) 88 41 22 59 Fax (33) 88 41 37 51/27 84 E-mail: eladio.galiano@dela.coe.fr

APPENDIX 2

AGENDA

1. Opening of the meeting by the Chairman

2. Adoption of the agenda

3. Secretariat report

4. Progress in invertebrate conservation since the last meeting (May 1994)

5. Action Plans for invertebrates: selection of species

6. Habitat conservation for invertebrates. Species requiring special habitat conservation measures

7. Habitats of particular importance for invertebrates

   7.1 Marine ecosystems
   7.2 Old-growth forests (saproxylic invertebrates)
   7.3 High-mountain ecosystems

8. Collecting invertebrates

9. Suggestions for invertebrate conservation activities within the framework of the Convention for 1997 and 1998

10. Election of Chairman and Vice-Chairman

11. Other business

APPENDIX 3

Reports by delegates

Austria

Denmark

Finland

France

Germany

Greece

Hungary

Ireland

Netherlands

Spain

Suisse

United Kingdom

Agence Européenne de l'Environnement

Austria

Matters of nature conservation remain the concern of regional rather than national government in Austria.

The government of Styria (Steiermark) reports that:

1. A project was begun in 1995 to determine the present distribution and status of *Hypodryas maturna* in Styria.

2. Since 1994 studies of Lepidoptera have been undertaken within the planned Ramsar site "Lafnitztal" which extends from Styria into Burgenland. As a result of this work appropriate management has been implemented on meadow patches in which *Maculinea teleius* and *M. nausithous* occur.

3. In a further planned Ramsar site, the "Hörfeld" which spans the border between Styria and Carinthia, inventories are being undertaken of macrolepidoptera, Odonata, Opilianes, Arachnida and selected groups of Coleoptera. This work began in 1995 and will form a basis for future management strategies.

No information from other regions of Austria has been made available.

Denmark

Ministry of Environment and Energy, The National Forest and Nature Agency, Skov- og Naturstyrelsen, Haraldsgade 53, DK 2100 København Ø, Denmark

1. Introduction

The Danish report is divided into progress in connection with Atlas Surveys, monitoring projects, important specific studies of single species or groups and important specific work in connection with invertebrates.

The report is focusing on the invertebrates appearing in the appendices to the Bern Convention (BCIs) but reference is also made to other work typically dealing with Danish redlisted invertebrates or otherwise important in connection with conservation of invertebrates in Denmark.

2. Atlas surveys

There have in the last years been carried out several so-called atlas surveys or national mapping schemes for insect groups. Two of the most important mapping schemes have now been published. They have been concerning Syrphidae and butterflies (Rhopalocera). For both groups detailed maps and description for each species in Denmark is given.

Examples from the national butterfly mapping scheme for the species *Euphydryas aurinia* / Marsh Fritillary and *Maculinea arion* / Large Blue with information on biology, status, distribution maps and recordings are included in appendix 1.

The national survey of Syrphidae took place in a long period mainly in the years 1984-1993. In 1994 the results were published in Ernst Torp: Danmarks Svirrefluer (Danish Syrphids).

The publication gives distribution maps, colour plates of the species and description of biology for the now known 270 species. Examples of distribution maps and biological descriptions (in Danish) are given in appendix 2. 205. *Myolepta luteola* might be a candidate species for the Danish red Data List, it is found in old hollow trees in deciduous forest areas. 217. *Helophilus pendulus* is an example of a common widespread species.

3. Monitoring projects

Two national monitoring projects on insects have now been started. In 1994 a guide for methods in connection with monitoring of insects was published (National Forest and Nature Agency: Metodevejledning for overvaagning af insekter). Two of the methods are now in continuous use in Denmark, both in connection with butterflies. At five field stations in scientific reserves in Denmark "automatic traps" for night butterflies and "line taxation" (Pollard walks) are used. It should be seen as a pilot project where later evaluation will give an indication of the possibilities.

4. Single species projects

In the period 1993 to 1996 the following insects have been included in detailed single species studies:

Lepidoptera: *Euphydryas aurinia, Maculinea arion, Coenonympha arcania*

Coleoptera: *Osmoderma eremita, Graphoderus bilineatus, Dytiscus latissimus*

These studies have been or will be published together with articles on Danish dragonflies in "Entomologiske Meddelelser" (Information on Entomology). In appendices 3 to 5 appear the already published articles on the beetles *Lucanus cervus, Osmoderma eremita, Graphoderus bilineatus* and *Dytiscus latissimus* together with the dragonflies *Aeshna viridis, Ophiogomphus cecilia* and *Leucorrhinia pectoralis*. Similar articles will be published in 1996/97 on the butterflies *Coenonympha hero(*), Euphydryas aurinia, Maculinea arion, Lycaena tityrus, Papilio machaon(*)* and *Coenonympha arcania*.

The two species marked with an asterisk /* are extinct in Denmark but covered by voluntary species protection because of the possibilities of re-appearing.

5. Other important work with invertebrates

Several of the BCIs appear also in the appendices to the EEC Habitats Directive. For Denmark the species include:

Dytiscus latissimus
Graphoderus bilineatus
Osmoderma eremita
Euphydryas aurinia
Leucorrhinia pectoralis
Ophiogomphus cecilia
Vertigo angustio
Vertigo geyeri/genesii
Vertigo moulinsiana
Margaritifera margaritifera (*)
Unio crassus

The main implementation of the Habitats Directive - the designation of Sites of Conservation Interest (SCI) - is still going on, but at the moment many of the localities on the provisional draft list of SCIs include habitats for the mentioned species.

Appendix 1

Marsh Fritillary

Euphydryas aurinia (Rottemburg, 1775)

DK: Hedepletvinge

Figs. 67 & 68

Habitat

Marshy heaths and unfertilized meadows and moors with plenty of the main larval foodplant, *Succisa pratensis*.

Changes in distribution and frequency

This species has been in a steady decline during the last 100 years or more. According to Strøm (1891) it was found in several places on Funen in the 19th century. On Zealand the Marsh Fritillary is known from two well separated areas: One at Tisvilde near the northern coast and one near Næstved to the south. But the butterfly has not been recorded from these localities since 1923 and 1922 respectively, and since then the species has been restricted to Jutland.

In Jutland it has been declining rapidly during the last decades and it is now a rarity, which is found on 23 sites in NEJ and NWJ. In SJ it has been well-known from Frøslev Mose since 1935, but this population disappeared in the 1980s, probably because of heavy grazing. In EJ it was found on many localities, eg Jeksen in the beginning of the century, Ondrup south of Århus in large numbers 1953 (Aagesen, 1957), near Mariager and Randers etc. The last records from EJ are a single specimen taken at Himmelbjerget 1976 and one taken at Ø 1987. In WJ it has been found on more than 20 localities and on eight sites even in the 1970s or 1980s, but no populations have been discovered during ADD. However, this might partly be due to insufficient survey.

Status

As endangered species in continuous decline. Extinct from most of Denmark, but several breeding sites still exist in northern Jutland. However, populations seem to be small with an overall average of only 118 specimens seen per year on 23 sites 1990-93. The species is protected by Danish legislation and may not be collected.

Recommendations

The species should be monitored on all remaining sites and grazing should be avoided. To reverse the steady decline we need to know a lot more about the biology of the species in Denmark. Is *Succisa* the only important foodplant, and which kind of management is optimal for the species?

Large Blue
Maculinea arion (L., 1758)
DK: sortplettet blåfugl
Figs. 96 & 97

Habitat
Open, dry and warm places with short vegetation on heaths, coastal dunes or unfertilized, lightly grazed pastures.

Changes in distribution and frequency
Formerly a relatively common species on Djursland (EJ) and northern Zealand. In addition there were many scattered populations in other parts of EJ, NEJ, Southern Zealand, Møn and Bornholm.

As in many other European countries, the Large Blue has declined rapidly in Denmark, where this interesting butterfly is now very close to extinction. It became extinct in SZ already in 1918. It disappeared very quickly from EJ between 1950 and 1960. The last record from EJ is from 1962. The populations on northern Zealand died out in the 1980s. Until recently, it was believed that the last record from NEZ was from 1982, but two specimens collected as late as 1989 were discovered in a collection in 1992, so the species may still be present in small numbers. The last record from Bornholm is from 1961. In 1987 the species was recorded for the last time from the famous locality Hammer Bakker in NEJ.

At present only two small breeding sites are known: one on the island Møn (LFM) and one in NEJ. A few specimens were seen in 1991 10 kilometres west of the known breeding site in NEJ, so it is possible that a third breeding site exists. The population on Møn is the largest, but even here, the population is critically low at present, probably less than 50 individuals. The population in NEJ is probably much smaller and the species was not seen on this site in 1993.

Status
Declining and highly endangered. Very close to extinction in Denmark. May be extinct in Jutland.

Recommendations
The monitoring carried out in the early 1990s should be continued, and the butterfly should be searched for on potential breeding-sites, especially along the northwestern coast of Jutland.

Steps have been taken to improve the two remaining breeding-sites, and in 1991 larvae were bred in captivity and released at the locality on Møn to be adopted by *Myrmica sabuleti*. This was done because *Thymus* in 1991 was virtually eaten up by larvae of the burnet *Zygaena purpuralis*, and again in 1992 due to the severe drought, which dried up all *Thymus*-plants completely. If necessary, breeding in captivity and release of larvae ready to be adopted should be continued.

The Large Blue is protected by Danish legislation, and may not be collected.

[Fig. 67]

[Fig. 68]

[Fig. 96]

[Fig. 97]

Note: Denmark also presented information (in Danish) on the following species:

Odonata	*Aeshna viridis, Ophiogomphus cecilia, Leucorrhinia pectoralis*
Coleoptera	*Dytiscus latissimus, Graphoderus bilineatus, Lucanus cervus, Osmoderma eremita*
Lepidoptera	*Coenonympha hero, Euphydryas aurinia, Maculinea arion, Lycaena tityrus, Papilio machaon, Coenonympha arcania*

Finland

Ilmari Valovirta, Finnish Museum of Natural History, PO Box 17, Fin-00014 University of Helsinki, Finland

Main Progress in invertebrate conservation in Finland since 1994

Since the last meeting Finland has joined the European Union. Because of this there has been progress in invertebrate conservation in the following three main sectors.

1. The general low in nature conservation in Finland dates back to the 1930s. Because of the differences in the conservation directives of the European Union, it has been necessary to check and add new elements to the revised Finnish Legislation. It will be, on the other hand, more strict, eg on the conservation of running waters, where it will prevent the harmful effects which originate upstream of population of threatened species, eg *Margaritifera* and *Unio*. Before that only the species and their actual sites were protected from direct destruction.

2. Related to this, farmers now receive compensation for leaving unploughed land beside the river or lake. This has had a very positive effect on the invertebrate populations along water courses.

3. Finland has had only a couple of years to compile a list of conservation area for the Natura 2000 network. During this time there have been many difficulties in preparing the inventory according to the Directives, mainly because much of the available information is old, but new surveys are being made.

There have been also plenty of activities on follow-up studies of invertebrates.

(a) Finnish Environmental Institute has carried out the Moth Monitoring project with about 70 sites in Finland and this project is going well.

(b) WWF-Finland and Finnish Museum of Natural History have started a new conservation project of *Unio crassus*.

(c) Finnish Forest Institute is currently active in producing inventories of biodiversity of its forests and other areas. Moreover, it has been possible to find and establish some new conservation areas on its lands.

France

R. Guilbot, OPIE, BP9, F-78041 Guyancourt Cédex, France

ACTIONS MENEES EN FRANCE DEPUIS 1994 EN FAVEUR DES ESPECES D'INSECTES INSCRITES A L'ANNEXE II DE LA CONVENTION DE BERNE

Depuis 1994, date de la précédente réunion du groupe d'experts sur la protection des invertébrés de la Convention relative à la conservation de la vie sauvage et du milieu naturel de l'Europe, des actions visant la protection de l'entomofaune ont été menées. Plusieurs de ces actions ont une portée générale sur la faune entomologique française, d'autres sont plus spécifiques aux espèces figurant à l'annexe II de la Convention de Berne.

1. Mise à jour de la réglementation

Pour mémoire, la France a mis à jour la liste des espèces d'insectes protégés sur le territoire national en la conformant à la liste de la Convention de Berne et de la Directive habitats. Des espèces cavernicoles ont par ailleurs été ajoutées (arrêté du 22/07/1993). Cette nouvelle liste que la France avait obligation de mettre en oeuvre par le fait de son adhésion à la Convention de Berne et à la Directive habitats a soulevé d'importantes réactions parmi les entomologistes amateurs.

Par ailleurs un arrêté concernant la protection spécifique d'insectes en Ile-de-France a également été pris (arrêté du 22/07/1993).

2. Plan national d'actions pour l'entomofaune

En application des différentes conventions ratifiées par la France et de l'article 6 de la Convention sur la diversité biologique, le ministère de l'Environnement a entrepris l'élaboration d'un programme national d'actions pour la conservation et la restauration de la biodiversité de la faune et de la flore sauvage.

Dans ce cadre, un programme "entomofaune" a été élaboré. Il a pour objectif la connaissance, le suivi et la préservation de la diversité biologique des insectes de la faune sauvage et de leurs habitats. Le ministère de l'Environnement disposera ainsi à terme d'un outil susceptible de permettre la prise de décisions rapides à partir de données fiables et régulièrement mises à jour relatives à l'évolution du statut de la faune et des milieux naturels dans laquelle celle-ci évolue ; il peut préparer des scénari de gestion à long terme pour les espèces les plus sensibles ; développer l'information et la sensibilisation de tous les partenaires susceptibles d'être concernés par la conservation de ce patrimoine naturel. Cinq types d'action sont distinguées :

- l'exploitation des travaux anciens concernant les données déjà recueillies ;

- la poursuite des inventaires entraînant plus particulièrement le cas des espèces endémiques à la France, les espèces en danger ;

- la mise en place et la réalisation d'un suivi à long terme des effectifs des différentes espèces et tout particulièrement celles qui apparaissent menacées ;

- de proposer les actions de gestion du milieu nécessaires à la conservation d'espèces sensibles tout particulièrement, dans un premier temps, dans les sites Natura 2000 ;

- la formation et l'information du grand public et des différents acteurs concernés par la nécessaire conservation de l'entomofaune.

Ces actions nécessitent, lorsqu'il y a mise en place d'étude, l'adaptation de méthodologies établies par des scientifiques et la réalisation de suivis répétitifs traités de façon homogène à l'échelle du territoire, qui acquéreront leurs valeurs dans le temps. Certaines d'entre elles, telle que la mise au point de techniques, information, sensibilisation, seront à mettre en place, éventuellement avec d'autres ministères.

Le cahier des charges sera amendé chaque année en fonction des nouvelles connaissances acquises.

2.1 Les inventaires

Ces données sont stockées au Service du Patrimoine Naturel du MNHN qui constitue ainsi progressivement une banque de données générales à partir d'actions telles que les inventaires de la faune et de la flore, ou celui des Zones Naturelles d'Intérêts Faunistique et Floristique (ZNIEFF) mis en place par le ministère de l'Environnement. La collecte des données permet de produire des bilans sous forme de cartes, de synthèses, de statistiques..., outils indispensables pour connaître et assurer la conservation de la richesse écologique de la France.

Pour l'instant, de nombreux projets d'inventaires ou de bibliographies ont déjà été engagés par le Secrétariat Faune-Flore sur les principaux groupes d'insectes : Orthoptéroïdes, Dermaptères, Dictyoptères, Lépidoptères, Coléoptères (Scarabéidés, Chrysomélidés et Coccinellidés), Hyménoptères (Mégachiles, Apoïdes, Sphæcides, Pompiles et Anthophores), Hétéroptères (Mirides), Diptères (Culicides), Odonates, Névroptéroïdes, Mécoptères, Trichoptères, Ephémèroptères. En 1994 une contribution à la cartographie de *Zerynthia rumina* et *Z. polyxena* (Lép. Papilionidae) a été réalisée par Th. LELIEVRE (OPIE/Provence Alpes du Sud). Les résultats montrent qu'en France la répartition de ces deux espèces est confondue dans le Languedoc et en Provence. Dans les localités de basse altitude les deux espèces s'excluent mutuellement. *Z. polyxena* vit en milieu plutôt humide alors que *Z. rumina* affectionne les milieux secs ; cette constatation est conforme à la biologie des deux plantes nourricières. Cependant au dessus de 500 à 1000 mètres, *Z. polyxena* transgresse cette différenciation et envahit les milieux secs. Ces dernières années, les entomologistes ont constaté la régression des populations de *Z. polyxena* dans les Alpes-Maritimes. Les populations très nombreuses et étendues de l'espèce occupant jadis le marais côtier ont connu une réduction importante de leurs effectifs du fait de la pression de l'urbanisation et du tourisme. *Z. rumina* a bien moins souffert parce qu'elle est liée à des milieux moins perturbés par l'homme. La contribution à la cartographie de ces deux espèces permet d'avoir une bonne image sur leur répartition actuelle. Toutefois elle mériterait d'être complétée par d'autres données de la littérature, collections de muséum, collections privées,...

2.2 Recherches et suivi des populations

Conformément à la recommandation n° 35 (1992) qui recommandait à la France d'effectuer des études pour trois espèces de Lépidoptères : *Maculinea nausithous, Maculinea teleius* et *Hypodryas maturna*, des travaux ont été engagés avec le soutien de la Direction de la Protection de la Nature et des Paysages du ministère de l'Environnement dans le but d'effectuer un bilan de l'état des populations et de préciser les besoins complémentaires en matière de connaissance de la biologie de ces espèces. Les résumés des résultats sont présentés ci-dessous.

- Programme de recherche sur la biologie, l'écologie et la répartition de quatre espèces de Lépidoptères Rhopalocères (*Lycaenidae, Satyridae*) protégés

Responsable scientifique J. LHONORE, au Laboratoire de Biosystématique des Insectes - Université du Maine - Le Mans. Des entomologistes amateurs ont participés aux travaux.

Résumé : Quatre espèces de Lépidoptères protégés, dont les populations sont réduites et isolées, ont été étudiées aux plans biologiques et écologiques. Il s'agit de trois Lycènes (*Lycaena dispar, Maculinea alcon* et *M. teleïus*) et un satyride (*Coenonympha oedippus*). Ces quatre espèces dépendent de milieux humides, souvent relictuels dont la moitié des stations actuelles seront éteintes en 2005. L'un des problèmes de ces insectes est l'isolement génétique consécutif à l'insularisme des colonies qui entraîne une dérive conduisant progressivement à l'extinction. Pour chaque taxon, ses exigences écologiques ainsi que sa répartition géographique en France ont été précisées. En outre l'évolution des effectifs a été suivi sur plusieurs parcelles expérimentales durant quatre années consécutives.

- *C. oedippus* apparaît comme une espèce gravement menacée dans la plupart des stations françaises. Plusieurs sous-espèces dans l'Ouest de la France sont éteintes depuis une vingtaine d'années.

- *Lycaena dispar* est probablement l'espèce la moins menacée de l'étude.

- *Maculinea alcon* voit ses populations de l'Ouest de la France de plus en plus isolées et donc à la limite de l'extinction. La sauvegarde de cette espèce implique des mesures urgentes de gestion et de restauration des habitats. Des réintroductions seraient à envisager pour certaines colonies si les habitats s'avèrent toujours favorables et si les causes de raréfaction de l'espèce ont disparu.

- *Maculinea teleius* est dans une situation encore plus délicate que l'espèce précédente. Les mêmes mesures de conservation doivent rapidement être mise en place.

- Approfondissement des connaissances sur *Hypodryas maturna*

Responsable scientifique M. CHABARD, Muséum d'Histoire naturelle d'Autun.

Résumé : L'étude a portée sur le recherche des observations anciennes, le recensement des données existant sur toute l'aire de répartition de l'espèce, une cartographie dans la zone bourguignonne, une étude fine des associations végétales dans les zone cartographiées, un suivi particulier sur deux zones au nord de Dijon. Cette espèce fréquente des zones très localisées de bois humides et clairs et de vallées. En Bourgogne la période de vol, de 15 jours à trois semaines (mi-juin début juillet). Les chenilles atteignent leur maturité au bout de deux ans, après avoir hivernées deux fois. Cette espèce est disparue de la région parisienne, on le rencontre en Bourgogne (Yonne, Saône-et-Loire, Côte-d'Or, Nièvre) et dans l'Allier.

- Conservation des *Parnassius* en France : aspects zoogéographique, écologique, démographique et génétique

Responsable scientifique H. DESCIMON, Université de Provence Marseille.

Ce travail poursuivi depuis plusieurs années nous informe de la distribution des *Parnassius* en France et de son évolution récente. Des précisions sont apportées en ce qui concerne l'écologie, la dynamique des populations, leur structure génétique. Il précise les causes de la régression des populations et suggère un plan de restauration. Ce travail donne des éléments sérieux pour alimenter la réflexion sur les moyens de protéger les *Parnassius* et qui, sur un plan

fondamental, nous précise la structure d'une métapopulation légèrement différente de celles classiquement présentées.

Faisant suite à ces travaux et dans le cadre du plan d'action pour l'entomofaune, la mise au point d'une méthodologie de suivi des populations de *P. apollo* sur l'arc alpin et le Massif Central est en course d'organisation. Cette étude financée par la Direction de la Protection de la Nature consistera à parfaire la connaissance de l'espèce, à constituer et former un réseau de surveillance afin de suivre l'évolution des populations, développer une méthodologie de suivi à long terme (fiches de relevés, transects, méthodes de surveillance, méthodes de comptage).

D'autres études sont en cours :

- Inventaire et cartographie des Scarabéidés coprophages endémiques. Responsable scientifique : P. LUMARET, Université P. Valéry - Montpellier 3.

- Mise au point d'une méthodologie de suivi des populations des espèces de Carabes protégés. Responsable scientifique : J.C. MALAUSA, INRA - Antibes.

Le suivi à long terme des populations de Carabes protégés nécessite la mise au point d'une méthodologie fiable et répétitive permettant de suivre leur évolution dans le temps sur le plan quantitatif et qualitatif. La disponibilité de telles méthodes de quantification permettront de disposer d'une méthodologie de suivi des sites et d'évaluer ainsi les conséquences d'un certain nombre de pratiques de gestion ou de perturbations éventuelles sur la démographie des espèces, permettant ainsi de définir les modalités de gestion les plus appropriées pour leur conservation.

- Cartographie des Mélitées : Genres *Euphydryas* et *Melitea* (Lép. Nymphalidae)

Responsable scientifique : H. DESCIMON, Université de Provence Marseille.

Une mise au point de l'état réel des populations de Mélitées dans l'ensemble de la France sera réalisée (données bibliographiques, contacts avec les entomologistes, point sur l'état actuel des peuplements). Un soin particulier sera apporté aux colonies résiduelles, sources éventuelles de recolonisations. Une approche précise des causes de disparitions pourra être envisagée. Par ailleurs, et en collaboration avec divers autres groupes, une approche écologique et génétique de certaines espèces sera conduite.

Les Directions Régionales de l'Environnement (DIREN), services décentralisés du ministère de l'Environnement, soutiennent de nombreux projets d'inventaires dont l'objectif est d'assurer la protection de milieux naturels et leur gestion (DIREN Pays de Loire : Etude entomologique de la tourbière de LOGNE (44), étude entomologique du Site du Mont Souprat (44) ; Inventaire des espaces naturels de l'Ile-de-France afin d'établir l'inventaire des Noctuelles ainsi que l'état de leur population - DIREN Ile-de-France). Ces directions ont organisé, chacune dans leur région, la mise en place de la directive "Habitats-faune-flore" : Réseau NATURA 2000 en constituant un Conseil Scientifique Régional du Patrimoine Naturel (CSRPN). Sur l'ensemble du territoire français 1600 sites qualifiés de "remarquable" et de "très intéressant" ont été proposés après une évaluation réalisée par le Service du Patrimoine Naturel du Muséum National d'Histoire Naturelle et la consultation du Conseil National de la Protection de la Nature (CNPN). Nous avons pu constater que parmi les espèces d'insectes qualifiées de "prioritaire" toutes ne présentaient pas, pour notre pays, d'intérêt dans la caractérisation des sites. Parmi celles-ci figurent plusieurs espèces de l'annexe II de la Convention de Berne, qui ne sont pas menacées, certaines peuvent même causer des dégâts aux végétaux à un moment donné de leur développement. Il nous semble nécessaire de réviser cette annexe.

2.3 Information-Formation

Les Fédérations, Associations nationales et régionales organisent régulièrement des sessions de formation destinées à de futures formateurs, aux responsables d'organismes concernés par la protection de la nature, des enseignants etc, ainsi que des stages d'initiation à la découverte des insectes et autres arthropodes, réservés à un large public. Le ministère de l'Environnement soutient avec les moyens qui sont les siens, quelques-unes de ces actions :

- L'organisation de stages entomologiques destinés aux personnels des réserves naturelles,

- L'organisation du premier Festival International du Film sur les Insectes et son Forum entomologique, organisé du 10 à 14 mai 1995 à Perpignan qui a permis d'accueillir un public varié, à la fois sur les stands d'exposition et dans les salles de projection. Six pays étaient représentés, plus de 25 films ont été diffusés aux 3000 visiteurs venus au Palais des Congrès de Perpignan pour mieux connaître le monde des insectes. Ce Festival, placé sous le Haut Patronage du Ministre de l'Environnement, a reçu le Label de l'Année européenne pour la Conservation de la Nature - 1955.

- L'édition d'un rapport d'étude sur "La conservation des Parnassius en France : aspects zoogéographique, écologique, démographique et génétique" tiré à 1000 exemplaires.

- L'édition d'une brochure d'information illustrée sur les insectes aquatiques diffusée à 2000 exemplaires.

- L'édition d'affiches présentant les espèces d'insectes protégés diffusées à 2000 exemplaires.

- L'édition d'un coffret "ENTOMOPHONIA - chants d'insectes", comprenant un disque CD et une plaquette d'information sur les espèces traitées (photographies, sonogrammes,...). Cet ensemble a reçu le "Grand prix du disque de l'Académie Charles CROS".

Pour développer le réseau "Inventaire et Cartographie des Invertébrés" une lettre d'information est réalisée et diffusée auprès des membres du réseau (800 exemplaires). D'autre part un logiciel destiné aux membres du réseau est en cours de réalisation. Le deuxième séminaire inventaire et cartographie des invertébrés à été organisé à Limoges les 17, 18, 19 novembre 1995 par l'Office Pour l'Information Eco-entomologique, Guyancourt ; Service du Patrimoine Naturel de l'IEGB/MNHN, Paris ; Laboratoire de Biosystématique des Insectes de l'Université du Maine, Le Mans ; Société Entomologique du Limousin. Ce séminaire a permis de faire un bilan des résultats acquis dans le domaine des applications de la cartographie et des inventaires. La participation était importante, il est à noter le grand intérêt des invertébristes amateurs français (47 %) mais aussi des chercheurs (25 %), des Conservatoires régionaux d'espaces protégés (17 %). On note une prédominance de spécialistes des Arthropodes, avec une large majorité d'entomologistes. Il est par ailleurs intéressant de constater des avancées encourageantes dans le domaine de l'Arachnologie au travers d'actions menées par un petit groupe d'Arachnologues amateurs et professionnels (stage d'initiation, revue Pénélope,...). Il faut regretter l'absence de Malacologistes mais aussi de spécialistes de bien d'autres Classes.

Pour l'avenir, un certain nombre de souhaits ont été formulés parmi ceux-ci on note une demande forte pour faciliter l'accès des documents réalisés pour le compte d'Administrations, dans le cadre d'études de terrain préalables à des projets les plus divers, pour développer les travaux de synthèse et les outils systématiques (réalisation de faunes,...) afin d'améliorer les moyens d'identification. Il ressort qu'un effort doit être fait pour assurer une meilleure liaison entre les études entreprises et leur applicabilité pour les gestionnaires du

patrimoine naturel (espèces et espaces), très demandeurs actuellement. Il faut assurer un *continuum* efficace entre les recherches appliquées et la gestion des habitats pour permettre la conservation de la biodiversité.

3. Conclusions

Les entomologistes, arachnologues, malacologistes et autres invertébristes, sont de plus en plus sollicités pour participer aux inventaires nationaux comme ceux réalisés pour définir les futurs sites de "Natura 2000" ou encore les inventaires des "ZNIEFF deuxième génération". Les invertébrés, qui constituent l'essentiel de la biodiversité des milieux naturels, commencent à être pris en compte de plus en plus souvent dans les préoccupations des gestionnaires de l'espace naturel. Mais beaucoup de chemin restant à faire, les spécialistes du patrimoine naturel veulent renforcer leur détermination d'améliorer cette prise en compte et expriment leur volonté d'aboutir à des actions concrètes.

Les insectes représentent les trois quarts des espèces animales. Les moyens financiers réellement nécessaires aux études et recherches nécessaires à une meilleure connaissance de ce groupe seraient colossaux. Pourtant l'entomofaune tient une place essentielle dans tous les écosystèmes. De ce fait les entomologistes amateurs sont les partenaires indissociables de la conservation de l'entomofaune. Pour leur compétence, pour une meilleure cohésion entre tous les acteurs utilisant les milieux naturels, il s'avère indispensable de poursuivre l'intégration des naturalistes amateurs au développement de la protection et de la gestion des espèces et de leurs habitats. Il s'avère donc indispensable d'accroître les actions de formation et d'information dans les domaines nécessaires à chacun pour l'ensemble des partenaires concernés par la conservation de l'entomofaune (naturaliste amateur, gestionnaire d'espaces protégés, administration, collectivités territoriales, usagers de l'espace, forestiers, agriculteurs, grand public).

Germany

Horst Gruttke
Federal Agency for Nature Conservation (Bundesamt für Naturschutz),
Konstantinstr. 110, D-53179 Bonn

1. Revision of the German "Species Protection Decree"

The "Decree on Species Protection" (Bundesartenschutzverordnung) is a special bye-law to the German "Nature Conservation Act" (Bundesnaturschutzgesetz). The practical implementation of this law is a task of the sixteen German Federal States (Bundesländer). The "Decree on Species Protection" regulates the collection, possession, breeding and commercial trade of especially protected species and had been last revised in 1989. At the moment, a new revision is being elaborated. This was necessary to adjust this law to European (EC) legislation. All species which are protected under the FFH-Directive will be excluded from the national species protection decree, to avoid legal inconsistency or ambiguity. It is intended to list only species in the appendices of this law which are threatened by trade or intentional immediate harm. This updated list will contain no taxa in general, which had been the case in the previous version of the appendix, for instance, for all *Apoidea*, all *Odonata* or the entire genus *Carabus*.

2. Bern Convention Invertebrates in Germany

An overall number of 36 invertebrate species listed in Appendices II and III of the Bern Convention is occurring in Germany today or reported as having been indigenous in historical times. Table 1 provides an overview of current (see 1.) conservation status, red list status and German vernacular names of these species.

2.1 Situation of *Hypodryas maturna*

Recently a third population of *Hypodryas maturna* has been discovered in Germany (the second in Baden-Württemberg), so that there are now three populations of this species known in Germany. The population in the southern part of "Steigerwald" (northern Bavaria) had been severely endangered by applications of Diflubenzuron (Dimilin) to control the pest species *Lymantria dispar* in 1994 (see report to the last meeting in 1994). Because of interventions of nature conservation authorities (eg the Bundesamt für Naturschutz) and some people who are actively engaged in nature conservation, a few habitat spots of particular importance for *Hypodryas maturna* and other endangered species (eg *Eriogaster catax*) had been excluded from spraying. During a survey in 1995 three specimens of *H. maturna* had been observed flying in the area. Until today a final evaluation of the state of *Hypodryas maturna* in the southern Steigerwald is not possible.

2.2 Other species

Regional surveys on *Maculinea*-species had been continued during past years. In order to improve habitat conditions for populations of both *Maculinea teleius* and *nausithous* in the protected wetland area "Feuchtgebiet Dreisel" (in North Rhine-Westphalia, Bergisches Land) additional sites will be integrated into the conservation and management program. Survey and research projects have been started for a number of other BCIs: in the Bavarian "Frankenalb" for *Parnassius apollo* (GEYER & DOLEK 1995), in Baden-Württemberg for *Maculinea arion* (PAULER et al. 1995) and for *Coenagrion mercuriale* (RÖSKE 1995). All studies resulted in recommendations for improving conservation strategies and management of habitats.

3. Other activities

3.1 Elaboration of Red Lists

The revision of the national Red Lists on invertebrates (last edition 1984) was started in 1991 and is still going on. It is intended to complete this work in 1996. For many taxa manuscripts of lists have been submitted. Coordinator of this project if Mr P. Boye of the "Federal Agency for Nature Conservation".

Most of the German Federal States have elaborated their own regional Red Lists on several groups of invertebrates, so that information on regional status of threat is available for many invertebrate species. Most recently published Red Lists, revisions and/or check-lists (some for the whole of Germany) including invertebrates are compiled at the end of this report (part 6).

3.2 Invertebrate surveys

Regional surveys for different taxa are organised by the German Federal States. A national survey (atlas) on molluscs is financially supported by the German Federal Environment Ministry. This project is organised by J.H. Jungbluth and will be finished in 1996. It comprises data on more than 330 species.

A faunistic project on *Bruchidae* and *Chrysomelidae*, in which a survey for the whole of Middle Europe is intended, is coordinated by Dr Michael Schmitt (Museum Alexander König, Bonn).

3.3 Publicity

In order to draw attention to the Bern Convention Invertebrates and the activities of the "Expert Group on Invertebrates" of the Bern Convention an article has recently been published in the German nature conservation journal "Natur und Landschaft" (GRUTTKE 1996).

4. Concluding remarks

Although considerable efforts in favour of invertebrates had been made, the situation of most endangered species has not or only locally improved. Economical development and infrastructural change are still responsible for the decline of many species, and even populations of some extremely rare and endangered species (eg *Carabus menetriesi*, *Chlaenius costulatus*) became threatened recently because of planning for a new motorway in the north-eastern part of Germany (refer MÜLLER-MOTZFELD 1994).

5. References

GEYER, A. & DOLEK, M., (1995): Ökologie und Schutz des Apollofalters (*Parnassius apollo* L.) in der Frankenalb. - Mitt. Dtsch. Allg. Angew. Ent., 10: 333-336.

GRUTTKE, H. (1996): Berner Konvention und wirbellose Tiere. (Bern Convention and Invertebrates). - Natur und Landschaft, 71 (1): 7-11.

MÜLLER-MOTZFELD, G., (1994): Ein Käfer gegen die Autobahn?. - Insecta, 3: 51-65.

PAULER, R., KAULE, G., VERHAAGH, M. & SETTELE, J., (1995): Untersuchungen zur Autökologie des Schwarzgefleckten Ameisenbläulings, *Maculinea arion* (LINNAEUS 1758) (Lepidoptera: Lycaenidae), in Südwestdeutschland. - Nachr. entomol. Ver. Apollo, N.F., 16 (2/3): 147-186.

RÖSKE, W., (1995): Die Help-Azurjungfer (*Coenagrion mercuriale*, Odonata) in Baden-Württemberg - Aktuelle Bestandssituation und erste Erfahrungen mit dem Artenhilfsprogramm. - Z. Ökologie u. Naturschutz, 4: 29-37.

6. German Red Lists and Checklists published 1994-1995

ARNDT, E. & RICHTER, K. (1995): Rote Liste Laufkäfer. - Ed.: Sächsisches Landesamt für Umwelt und Geologie. In: Materialien zu Natursch. u. Landschaftspfl. 4: 1-11.

JÄGER, P., KREUELS, M., SCHIKORA, H.-B. & WEIß, I. (1995): Liste der Spinnen (Araneae) von Nordrhein-Westfalen. - Mitt. ArbGem. ostwestf.-lipp. Ent. 11 (Beiheft 2): 1-30.

JUNGBLUTH, J.H., von KNORRE, D., FALKNER, G., GROH, K. & SCHMID, G. (1995): Rote Liste der Binnenmollusken [Schnecken (Gastropoda) und Muscheln (Bivalvia)] in Deutschland. - Mitt. dtsch. malakozool. Ges., 56/57: 1-17.

KLAUSNITZER, B. (1994): Rote Liste Bockkäfer. - Hrsg.: Sächsisches Landesamt für Umwelt und Geologie. In: Arbeitsmaterialien Naturschutz: 1-11.

KLAUSNITZER, B. (1995): Rote Liste Blatthornkäfer und Hirschkäfer. - Hrsg.: Sächsisches Landesamt für Umwelt und Geologie. In: Materialien zu Naturschutz und Landschaftspflege, 5: 1-9.

PLATEN, R., BLICK, T., BLISS, P., DROGLA, R., MALTEN, A., MARTENS, J., SACHER, P. & WUNDERLICH, J. (1995): Checklist of the arachnids (excl. Acarida) of Germany (Arachnida: Araneida, Opilionida, Pseudoscorpionida). - Arachnologische Mitteilungen, Sonderband 1: 1-55.

RACHOR, E., HARMS, J., HEIBER, W., KNÖNCKE, I., MICHAELIS, H., REISE, K. & van BERNEM, K.-H. (1995): Rote Liste der bodenlebenden Wirbellosen des deutschen Wattenmeer- und Nordseebereichs. - Schr. R. f. Landschaftspfl. u. Natursch., 44: 63-74.

SCHNITTER, P., GRILL, E. & TROST, M. (1994): Checkliste der Laufkäfer (Coleoptera, Carabidae) des Landes Sachsen-Anhalt. - Entomologische Nachrichten und Berichte, 39: 81-93.

SEIFERT, B. (1994): Liste der im Freiland lebenden Ameisenarten Deutschlands (Stand vom 17.2.94). - Ameisenschutz aktuell, 2: 25-35.

TRAUTNER, J. (1994): Die Laufkäfer Baden-Württembergs (Col., Carabidae s. lat.) - Übersicht zum Bearbeitungsstand sowie Aktualisierung von Checkliste und Roter Liste. - Entomologische Nachrichten und Berichte, 38: 255-260.

TRAUTNER, J. & MÜLLER-MOTZFELD, G. (1995): Checkliste der Laufkäfer Deutschlands. 12 pp. - Beilage zu: TRAUTNER, J. & MÜLLER-MOTZFELD, G. (1995): Faunistischökologischer Bearbeitungsstand, Gefährdung und Checkliste der Laufkäfer. Eine Übersicht für die deutschen Bundesländer. - Naturschutz und Landschaftsplanung 27 (3): 96-105.

ZIEGLER, W. & SUIKAT, R. (1994): Rote Liste der in Schleswig-Holstein gefährdeten Käferarten. - Landesamt für Naturschutz und Landschaftspflege Schleswig-Holstein: 1-96.

Table 1: Bern Convention Invertebrates, national conservation status according to the species protection decree of 1989 and red list status. German vernacular names in brackets.

APPENDIX II Strictly protected fauna species					
TAXON	RL	SPD	TAXON	RL	SPD
ARTHROPODA (GLIEDERFÜSSER)			*Lepidoptera (Schmetterlinge)*		
INSECTA (INSEKTEN)			Parnassius apollo (Apollofalter)	1	SP
Odonata (Libellen)			Parnassius mnemosyne (Schwarzer Apollo)	1	SP
Coenagrion freyi (Bileks Azurjungfer)	0	SP	Euphydryas (Eurodryas) aurinia (Skabiosen-Scheckenfalter)	3	P
Coenagrion mercuriale (Helm-Azurjunger)	1	SP	Coenonympha hero (Waldwiesenvögelchen)	2	(P)
Aeshna viridis (Grüne Mosaikjungfer)	1	SP	Coenonympha oedippus (Moor-Wiesenvögelchen)	0	SP
Stylurus (= Gomphus) flavipes (Asiatische Keilungfer)	0	SP	Lopinga achine (Gelbringfalter)	2	P
Ophiogomphus cecilia (Grüne Keiljungfer)	1	SP	Lycaena dispar (Großer Feuerfalter)	2	SP
Oxygastra curtisii (Gekielte Smaragdlibelle)	I	(P)	Maculinea arion (Quendel-Ameisenbläuling)	2	SP
Leucorrhinia albifrons (Östliche Moosjungfer)	1	SP	Maculinea teleius (Heller Wiesenknopf-Ameisenbläuling)	3	(P)
Leucorrhinia caudalis (Zierliche Moosjungfer)	1	SP	Maculinea nausithous (Dunkler Wiesenknopf-Ameisenbläuling)	3	SP
Leucorrhinia pectoralis (Große Moosjungfer)	2	(P)	Hypodryas maturna (Kleiner Maivogel)	2	P
Coleoptera (Käfer)			Eriogaster catax (Heckenwollafter)	1	SP
Dytiscus latissimus (Breitrand)	2	SP	Proserpinus prosperpina (Nachtkerzenschwärmer)	2	P
Graphoderus bilineatus (Schmalbindiger Breitflügel-Tauchkäfer)	2				
Osmoderma eremita (Eremit)	2	P	MOLLUSCA (WEICHTIERE)		
Buprestis splendens (Goldstreifiger Prachtkäfer)	0	SP	BIVALVIA (MUSCHELN)		
Cucujus cinnaberinus (Scharlachkäfer)	1		*Unionoida (Najaden)*		
Cerambyx cerdo (Großer Eichenbock)	1	SP	Margaritifera auricularia (Ohrfömige Flußperlmuschel)	0	
Rosalia alpina (Alpenbock)	2	SP			

Legend:
RL (national red list):
O : EXTINCT OR MISSING (since at least 10 years)
1 : IN DANGER OF EXTINCTION
2 : STRONGLY ENDANGERED
3 : ENDANGERED
4 : POTENTIALLY ENDANGERED
I : "GUESTS" (occasionally reproducing in Germany)

SPD (species protection decree):
SP : Strictly protected species marked as "in danger of becoming extinct"
P : protected species explicity named
(P) : species included in a taxon protected as a whole
P* : import restrictions

APPENDIX III

Protected fauna species					
ARTHROPODA (GLIEDERFÜSSER)			*Stylommatophora (Landlungenschnecken)*		
INSECTA (INSEKTEN)			Helix polatia (Weinbergschnecke)	4	P
Coleoptera (Käfer)			BIVALVIA (MUSCHELN)		
Lucanus cervus (Hirschkäfer)	2	P	*Unionoida (Najaden)*		
CRUSTACEA (Krebstiere)			Margaritifera margaritifera (Flußperlmuschel)	1	SP
Decapoda (Zehnfüßige Krebse)					
Astacus astacus (Edelkrebs)	1	SP	ANNELIDA (RINGELWÜRMER)		
Austropotamobius torrentium (Steinkrebs)	2	P	HIRUDINEA (EGEL)		
MOLLUSCA (Weichtiere)			*Arhynchobdellae (rüssellose Egel)*		
GASTROPODA (Schnecken)			Hirudo medicinalis (Medizinischer Blutegel)		P*

Legend:

RL (national red list):

O : EXTINCT OR MISSING (since at least 10 years)
1 : IN DANGER OF EXTINCTION
2 : STRONGLY ENDANGERED
3 : ENDANGERED
4 : POTENTIALLY ENDANGERED
I : "GUESTS" (occasionally reproducing in Germany)

SPD (species protection decree):

SP : Strictly protected species marked as "in danger of becoming extinct"
P : protected species explicity named
(P) : species included in a taxon protected as a whole
P* : import restrictions

Greece

A. Legakis, Zoological Museum, University of Athens, Greece

Report on the progress towards the conservation of Bern Convention Invertebrates in Greece

Within the Bern Convention there are 24 invertebrate species that have been recorded from Greece. Although this convention has been ratified by Greece, the relevant legislation enforcing it has not been passed yet.

1. Bern Convention Invertebrates and the Habitats Directive

The most important action taken recently was the preparation of data sheets for sites proposed for inclusion into the Natura 2000 network. Approximately 300 sites have been proposed to the Ministries of Environment and Agriculture. The total number of invertebrate species recorded in these sites was 12 Habitats Directive Annex II species of which nine were Bern Convention Invertebrates and 957 other important invertebrates. The Annex II invertebrates were recorded from 25% of the sites. The other important invertebrates belonging to seven phyla, 14 classes and 22 orders, were recorded from 80% of the sites. The majority of species (80%) were endemic to Greece. The number of species protected by international and national legislation is very low. Only 1.6% are protected by international conventions (mainly the Bern Convention) and 6.7% protected by national legislation.

The inclusion of a large number of invertebrates in the data sheets meant that for the first time invertebrates will be taken into account in future management plans. However, the Habitats Directive and accordingly the Bern Convention would have been much more effective if there were more invertebrates in Annex II of the Directive and in the Bern Convention.

2. Inventories

A large number of invertebrates including all the Bern Convention Invertebrates have been included in the data bank of the Hellenic Zoological Society that is related to the fauna of Greece. This data bank contains distributional data and will eventually include all known records from all the fauna of Greece.

3. Threatened species list

A provisional list of threatened, protected and endemic animal species of Greece has been produced by the author in collaboration with a number of specialists from Greece and abroad. The latest version (April 1995) includes approximately 1700 species, 1400 of which are endemic to Greece. Criteria for inclusion in this list have been, apart from the endemics, the presence of these species in national and international legislation and red data books, in various European lists of threatened animals and also recommendations from specialists.

Hungary

András Ambrus
Hortobágy National Park

1. The Bern Convention Invertebrate species were incorporated in the National Biodiversity Monitoring Program, as target taxa. Most of them are in the so-called "minimal program".

2. Extensive survey of the Bern Convention Invertebrates is under way, especially of Lepidoptera and Odonata. This survey was initiated by Prof. Z. Varga, who handles the data.

3. Special ecological studies have been carried out on the species of Maculinea genus, including *M. alcon* ssp. A thorough study was (and is) targeted on the (genetic) diversity of *Parnassius mnemosyne*.

4. Ecological studies and other surveys have been initiated for the conservation of the *Leucorrhinia pectoralis* and, especially, *Leucorrhinia caudalis*. Cooperation with the Slovenian specialists is under way. (This topic may be a joint action!)

5. A desire was expressed by Hungarian specialists: *Palingenia longicauda* should be among the Bern Convention Invertebrates list as a species in danger of extinction.

6. Specialists of *Trichoptera* are working on a proposed list of endangered species to be handed in.

Ireland

The present state of Bern Convention Invertebrates in Ireland

The four BCIs occurring in Ireland are also included in the Annexes of the Habitats Directive. Following from the status of these species in both pieces of international legislation, a number of sites have been selected for each of them at which their protection is to be a priority. Some of these sites are state-owned, others are not.

Neither the spotted slug (*Geomalacus maculosus*) nor the marsh fritillary (*Euphydryas aurinia*) are under threat in Ireland and no particular action has been taken for these species beyond the site selection measures mentioned above.

The situation for the white-clawed crayfish (*Austropotamobius pallipes*) is confused and we intend to get an overview carried out by a specialist.

The situation of *Margaritifera margaritifera* in Ireland requires to be dealt with in two parts:

a) *Margaritifera margaritifera margaritifera*
b) *M. m. durrovensis*

Considering the situation in general, several sites have been identified which are judged to be of national importance for protection of the species. The greatest immediate threat to *M. margaritifera* in Ireland is illegal pearl fishing. We have produced a pamphlet, circulated at this meeting, which will be (already has been) circulated to Wildlife Service Regional Staff, Garda and angling groups. This pamphlet aims at alerting these groups about the status of the species and the need, in particular, to alert the Garda of potential illegal pearl-fishing activity. We do not, at the moment, have a reliable way of dealing with illegal pearl-fishing. We would welcome information from other delegations on how they have dealt with this matter. We see an extension of this problem likely following the need to publicise important sites in connection with Habitats Directive requirements.

The endemic taxon *M. m. durrovensis* is a cause for particular concern. The situation of this taxon has been reviewed during the colloquium part of this meeting and requires no further detailing here. There is need for some form of recognition of this taxon as a particular problem within the Bern Convention and Habitats Directive. One appropriate action might be to have *M. m. durrovensis* listed explicitly in the Appendices of the Convention. This raises the general question of referring to named infra-specific taxa in the Appendices, which at present remains unresolved. In this regard it is worthy of note that vertebrate and invertebrate species appear to be treated differently within the Convention.

The Netherlands

P.J. van Helsdingen
European Invertebrate Survey - Netherlands, Leiden, Netherlands

The present state of the BCIs in The Netherlands

Introduction

Only 14 of the Bern Convention Invertebrates occur in the Netherlands. Six of these species are extinct or probably extinct, two are vulnerable, four critical, one falls in the category Insufficiently Known, while one only sporadically appeared in our country in the past and therefore should be classified as a straggler (classified as Rare below).

As to fauna, the Netherlands are a poor country by nature, because the variation in available natural habitats is scanty. The submontainous, montainous, and alpine regions are completely lacking and limestone grasslands are rare and restricted to the southern tip of the country. Nearly all waterbodies, including the larger rivers, are polluted. Even wetland reserves suffer from the bad water quality, because the reserves are situated higher than the surrounding polder areas, resulting in a permanent seeping away of the water from the reserves towards the polders. In the drier periods of the year this leads to a shortage of water, which forces management to choose between drying out of the wetland reserve or pumping in of polluted water from the surrounding areas. In many places the quality of the groundwater is already deteriorating. The country is largely drying out as a result of agricultural activities. Air pollution through industries and agriculture (intensive cattle breeding and cultivation of pigs) is a serious and persistent problem. Housing development and the construction of new transport infrastructures take a heavy toll on the available space. It is, therefore, not surprising that we cannot report improvement in the general situation, despite all the plans which have been developed on the governmental level. The Nature Policy Plan has put the National Ecological Network firmly on the Dutch map. All good intentions are there, but the opposing forces are still too strong.

It is not surprising that under these circumstances the larger part of the fauna is under continuous stress and that species which are endangered will remain so, despite all good intentions. During recent years for two species (*Maculinea nausithous*, *Maculinea teleius*) the instrument of reintroduction has been used, thus transferring two species from Extinct to Critical. The reintroductions so far are successful in that the two species hold out very well, while one of them (*Maculinea nausithous*) is even slowly dispersing. The populations of the two species are monitored and subject of a genetic study.

ODONATA

Sympecna braueri

National status: Critical.
Distribution: mesotrophic fens in eastern part of country. The species is strongly in decline since the seventies.
Reasons for decline: acidification; eutrophication; drying out and loss of habitat.
Conservation measures taken: general improvement of the environment is in extremely slow progress.
Conservation measures proposed: speeding up of general improvements, such as suppression of excessive acidification and eutrophication and restoration of natural, dynamic groundwater régimes.

Main bibliography:
Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).

Aeshna viridis

National status: Vulnerable.
Distribution: fenlands in western and northwestern part of the Netherlands.
Reasons for decline: eutrophication; pollution; loss of habitat; dependent on the Soldier Plant (*Stratiotes aloides*) which is very sensitive to toxic pollutants and presently also in decline.
Conservation measures taken: general improvement of the environment is in extremely slow progress.
Conservation measures proposed: speeding up of general improvements, such as suppression of excessive acidification and eutrophication and restoration of natural, dynamic groundwater régimes.

Main bibliography:
Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).

Stylurus flavipes †
(*Gomphus flavipes*)

National status: Extinct.
Distribution: disappeared before 1950; not seen since early this century (1902) and not likely to return because the nearest European populations live in France and as far as Berlin.
Reasons for decline: eutrophication; pollution of Rhine river basin and other larger rivers.

Main bibliography:
Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).

Ophiogomphus cecilia †

National status: Extinct.
Distribution: disappeared before 1950; last record from 1936; no natural recolonisation to be expected because the nearest populations live at 250 km to the East.
Reasons for decline: eutrophication; canalisation of brooks.
Conservation measures taken: none.

Main bibliography:
Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).

Oxygastra curtisii

National status: Rare.
The species does not belong to the regular fauna of the Netherlands. Probably there are temporary settlements. There was a breeding population in the southern part of the country from 1925-1928, and the species has been observed twice more recently (around 1980).
Distribution: not permanent.
Reasons for decline: temporary settlements only.
Conservation measures taken: none.

Main bibliography:
Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).

Leucorrhinia albifrons

National status: Critical.
Distribution: very local in the Southeast and East. Small populations.
Reasons for decline: acidification; eutrophication; loss of habitat; expected to disappear soon because of gradual acidification of mesotrophic fens.
Conservation measures taken: general improvement of environment.
Conservation measures proposed: speeding up of general improvements, such as suppression of excessive acidification and eutrophication and restoration of natural, dynamic groundwater régimes.

Main bibliography:
Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).

Leucorrhinia caudalis †

National status: Extinct.
Distribution: probably has disappeared because of gradual acidification of mesotrophic fens; last record from 1970; no natural recolonisation expected.
Reasons for decline: acidification; eutrophication; loss of habitat.
Conservation measures taken: general improvement of environment.

Conservation measures proposed: speeding up of general improvements, such as suppression of excessive acidification and eutrophication and restoration of natural, dynamic groundwater régimes.

Main bibliography:
Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).

Leucorrhinia pectoralis

National status: Vulnerable.
Distribution: mainly in eastern part of country in mesotrophic fens. Very small populations only.
Reasons for decline: acidification; eutrophication; loss of habitat.
Conservation measures taken: general improvement of environment.
Conservation measures proposed: speeding up of general improvements, such as suppression of excessive acidification and eutrophication and restoration of natural, dynamic groundwater régimes.

Main bibliography:
Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).

COLEOPTERA

Dytiscus latissimus †?

National status: Extinct?
Distribution: Used to occur in larger lakes; last records from early seventies.
Reasons for decline: changes in water quality?
Conservation measures taken: general improvement of water quality.
Conservation measures proposed: none.

Main bibliography:
Drost, M.B.P. et al., 1992. De Waterkevers van Nederland. (Leiden Natural History Museum)

Graphoderus bilineatus

National status: Insufficiently known.
Distribution: precise distribution unknown.
Reasons for decline: unknown.
Conservation measures taken: none.
Conservation measures proposed: none.

Main bibliography:
Drost, M.B.P. et al., 1992. De Waterkevers van Nederland. (Leiden Natural History Museum)

Osmoderma eremita †?

National status: Extinct?
Distribution: ?
Reasons for decline: ?
Conservation measures taken: none.
Conservation measures proposed: none.

Cerambyx cerdo

National status: Critical or Extinct.
Distribution: former records from eastern provinces (stands of oak).
Reasons for decline: unknown.
Conservation measures taken: none.
Conservation measures proposed: none.

LEPIDOPTERA

Maculinea nausithous

National status: Critical.
Distribution: reintroduced at one site (reserve) in the South. The experiment has been successful and the population is slowly spreading to new subsites.
Reasons for former decline: wrong management of reserves.
Conservation measures taken: changes in management (mowing intensities).
Conservation measures proposed: management should follow the prescribed mowing intensities and time of the year.

Main bibliography:
Tax, M.H., 1989. Atlas van de Nederlandse dagvlinders. - (Vlinderstichting/Wageningen)

Maculinea teleius

National status: Critical.
Distribution: reintroduced at one site (reserve) in the South; no spreading has (yet) been observed.
Reasons for decline: reasons for former decline: wrong management.
Conservation measures taken: changes in management (mowing intensities).
Conservation measures proposed: none.

Main bibliography:
Tax, M.H., 1989. Atlas van de Nederlandse dagvlinders. - (Vlinderstichting/Wageningen)

Spain

M.A. Ramos
Museo Nacional de Ciencias Naturales (CSIC), José Gutierrez Abascal 2, E-28006 Madrid

Since the last meeting things have developed favourably concerning invertebrate conservation, especially with respect to the necessary surveys on threatened species.

"*Fauna Ibérica*" programme continues producing interesting results such as the discovery of 70 other species new to science and of 80 previously unknown species of Iberian fauna. Several checklists have been published reviewing taxonomy and including both bibliographical and new data on species distribution. Seven monographs in the *Fauna Ibérica* series, including identification keys, descriptions, geographical distribution and biological data, have been published and five other are in press. The project, which began in 1989, has helped to create an atmosphere conducive to the promotion and improvement of both knowledge (systematic studies) and conservation of biodiversity as a whole. The fourth project is now being evaluated by the Dirección General de Investigación Científica y Técnica (DGICYT) (Ministerio de Educación y Ciencia).

In connection with the invertebrate species included in Directive 92/43/EEC (Habitat Directive), the Dirección General de Conservación de la Naturaleza (Ministerio de Medio Ambiente) has subscribed two research conventions, one with the Museo Nacional de Ciencias Naturales of the Spanish Research Council (CSIC) and the other with the Spanish Entomological Society. The aim is to obtain in one year accurate and updated information on species distribution with a review of the biology and life cycles of the species, mainly those included in Annexes II and V, and estimates on population densities. In this way, it seeks to identify threats to the species and both measures and areas of special relevance for their survival. The first of these conventions emphasises surveys on *Margaritifera auricularia* and *Maculinea nausithous* (Recommendation No. 35, 7 and 8 (92), and 9 and 10 (94)[1] of the Bern Convention Group of Experts). The most outstanding result till now has been the discovery of a live population of *Margaritifera auricularia* in a channel of the Ebro River. Studies *in situ* and in aquaria are being carried out to describe the anatomy of the species, and all the larval stages as well as its reproductive strategy as a preliminary step to draw up a plan for species recovery. The first results will be presented at the Colloquium on "Site Management for Invertebrates". However as a summary of them it can be said that: 1) all the observed specimens are very big, suggesting that the population has not reproduced for many years, 2) the specimens in the aquarium released all the larval stages and 3) in the presence of a sturgeon fish species the glochidium parasitized its gills for metamorphosis. A pluridisciplinary approach to all these aspects is now in progress.

From the point of view of legal protection (apart from the protection due to inclusion in the international conventions subscribed by Spain), the Atlantic stream crayfish (*Austrapotamobius pallipes*) is the only species for which collection (fishing) is forbidden by a state law (Royal Decree 1095/89). Recently, the Comisión Nacional para la Protección de la Naturaleza approved the inclusion of *Margaritifera auricularia* on the National Endangered Species List (Royal Decree 439/90) in the category of "species threatened with extinction". The Commission expects that in the next few months the corresponding ministerial order will be published.

At regional level some governments are publishing regional lists of protection or red

[1] Appendix 3 of document T-PVS (94) 8

lists. Such is the case of the Madrid Region (Decree 18/92). Catalonia (Law 3/1988 and Order of 16 March 1993), Asturias (Decree 32/90), Balearic Islands (Decreto 24/92), Navarra (Foral Law 2/93 and Foral Law 209/95), Andalucía (Decree 104/94), Aragón (Decree 49/95) or Valencia (Decreto 265/94). Most of them do not include invertebrate species, and there is no plan, either national or local, to recover invertebrate species. We can, therefore, conclude that Spanish legislation is behind as regards protection of invertebrates as all the laws have been designed with vertebrates, and especially the charismatic megavertebrates, as the usual priority with plants in second place.

Suisse

Rapport relatif à la protection des Invertébrés en Suisse

INTRODUCTION

Ce document est une suite logique à la contribution helvétique [T-PVS-INV (94) 2] présentée à Strasbourg en mai 1994 et aux informations complémentaires fournies en séance plénière.

Rappelons qu'en Suisse, la protection des espèces est, sauf exception (voir plus loin) largement subordonnée à la protection des milieux et des habitats. Aucune action d'envergure ciblée sur la protection d'espèces d'Invertébrés citées dans les Annexes de la Convention de Berne n'y a donc été entreprise depuis 1994. Ce rapport n'est toutefois pas sans objet : il présente les travaux en cours ou planifiés qui ont un lien avec la faune invertébrée et/ou pourraient à terme influencer le statut de nombreuses espèces.

La plupart des travaux mentionnés dans ce rapport sont de portée nationale[1]. Il est en effet quasi impossible de résumer voire même de connaître l'ensemble des actions ponctuelles entreprises dans toutes les régions du pays (26 cantons, 3000 communes), par tous les acteurs potentiels (cantons, communes, universités, ONG, privés) pour étudier et/ou préserver tel ou tel habitat ou telle ou telle espèce.

Définition d'une stratégie nationale d'étude de l'évolution de la biodiversité
Domaine d'action (DA) 0.2 du CDPE : mise en place de stratégies nationales pour la biodiversité

L'Office fédéral de l'environnement, des forêts et du paysage (OFEFP) a, à la suite du sommet de Rio, décidé de financer un projet visant à définir une stratégie d'accumulation, d'analyse et de présentation d'informations concernant l'évolution de la biodiversité de la Suisse. Ce projet est en cours et ses principales conclusions devraient être présentées à la fin de l'année.

Il n'est pas sans enjeu car il pourrait, théoriquement du moins, posé les bases d'un véritable réseau national d'observation impliquant notamment la collaboration de nombreuses institutions publiques ou privées déjà actives dans le domaines : Offices et Services fédéraux concernés (environnement, agriculture, sylviculture...), Instituts fédéraux de recherches, banques de données (BdD) nationales (flore et faune), services cantonaux de protection de l'environnement, universités, ONG...

Compensation écologique et bioindication en milieu agricole
DA 1.3 du CDPE : constitutions de réseaux écologiques nationaux
DA 2 du CDPE : prendre en compte la diversité biologique dans les secteurs d'activité pertinent

L'état, par le biais de l'Office fédéral de l'agriculture (OFAG), rétribue (paiements directs à l'hectare) les agriculteurs qui acceptent la mise en place de surfaces de compensation écologique (SCE) sur leur domaine. A terme, cette mesure devrait se traduire par une extensification du paysage agricole helvétique.

[1] Le texte mentionne si certains de ces travaux répondent, ne serait-ce que partiellement, à l'une ou l'autre des recommandations du document <<Stratégie paneuropéenne de la diversité biologique et paysagère : texte soumis par le Conseil de l'Europe et approuvé par les ministres de l'Environnement [CDPE (95) 16].

Conscient des enjeux potentiels de cette mesure dans le domaine de la protection des espèces et des habitats, l'OFEFP a, dans un premier temps, lancé un projet de développement d'un outil d'évaluation, par le biais de bioindicateurs, des effets des mesures envisagées sur la flore et la faune. L'approche préliminaire qui a permis le développement de cet outil (en phase de test actuellement) vient d'être publiée (GONSETH & MULHAUSER, 1996).

Dans un second temps l'OFEFP a accepté de seconder l'OFAG dans la mise sur pied d'un groupe de travail multidisciplinaire chargé d'accompagner la mise en place de cette politique de compensation écologique dans les milieux agricoles, accompagnement impliquant par exemple la coordination de la recherche dans le domaine, la formulation de propositions concrètes d'amélioration du système, la diffusion d'informations aux autorités politiques et au grand public...

Parallèlement à ces actions l'OFEFP a accepté de soutenir deux projets visant à contrecarrer la disparition de deux espèces emblématiques du paysage agricole helvétique : la perdrix grise (*Perdix perdix*) et le lièvre (*Lepus europaeus*). Les moyens mis en place pour parvenir à cet objectif recouvrent, ne serait-ce que partiellement, les mesures envisagées par la compensation écologique - aménagement de bande culturales extensives, de jachères florales, restructuration du milieu par le biais de haies ou de bosquets par ex. - et sont indubitablement favorables à la faune invertébrée.

Typologie des milieux de Suisse
DA 3.1 du CDPE: sensibilisation à la diversité biologique et paysagère
DA 4.1 du CDPE : Guide de référence exhaustif sur la diversité biologique et paysagère

L'OFEFP et la Ligue suisse pour la protection de la nature (LSPN) ont désiré et soutenu la réalisation d'un ouvrage d'identification de l'ensemble des milieux de Suisse (considérés au niveau de l'alliance végétale). Cet ouvrage, qui sera bientôt disponible (publication prévue hiver 96/97), offrira de nombreux renseignements pratiques à son lecteur. Les fiches signalétiques développées sur deux pages pour chaque milieu contiendront en effet les rubriques suivantes :
- physionomie et écologie générale du milieu
- position phytosociologique, correspondance avec d'autres typologies européennes (CORINE notamment) et problèmes d'identification (critères différentiels avec des milieux proches par exemple)
- relations avec l'homme (importance économique, type d'exploitation ou d'entretien)
- listes d'espèces végétales (plantes vasculaires, fougères, voire même bryophytes et champignons) caractéristiques et/ou régulières dans le milieu, complétées quand cela est possible d'une liste d'espèces animales qui y ont leur centre de gravité
- distribution, statut et valeur biologique du site
- photographies du milieu concerné et d'une ou deux espèces caractéristiques

Projets relatifs aux milieux aquatiques et aux milieux humides
DA 6 du CDPE : les écosystèmes des cours d'eau et leur zones humides
DA 7 du CDPE : les écosystèmes de zones humides intérieures

L'OFEFP a commandité la réalisation de plusieurs **inventaires de milieux aquatiques ou humides d'importance internationale ou nationale** dont les résultats sont aujourd'hui disponibles :
- l'inventaire fédéral des hauts et des bas-marais d'importance nationale (1991, 1994)
- les inventaires des sites d'importance internationale pour les oiseaux d'eau et migrateurs (MARTI 1987, OFEFP 1991)
- l'inventaire et la cartographie des zones alluviales d'importance nationale (1991, 1993)
- l'inventaire des sites de reproduction de batraciens d'importance nationale (1994)

- l'inventaire des sites marécageux d'importance nationale (1996; approche paysagère)

Ces documents sont importants car ils mentionnent tous les sites dont les cantons doivent assurer la protection et l'intégrité avec l'aide financière de l'état.

En automne 1994 l'OFEFP et la LSPN acceptaient de soutenir la première phase d'un projet d'étude de la faune suisse des **Plécoptères, Ephémères et Trichoptères**. Cette première phase, qui est encore en cours actuellement, permettra de faire le bilan des connaissances accumulées sur ces organismes jusqu'à aujourd'hui. Pour ce faire l'ensemble des collections des Musées suisses d'histoire naturelle ont été revues et la majeure partie du matériel récolté par les hydrobiologistes amateurs ou professionnels déterminé par des spécialistes. Un travail de terrain minimum a en outre été réalisé pour rassembler des données dans des régions non prospectées.

En 1995 ce projet réalisé sous l'égide du CSCF était complété, grâce à des fonds privés, par une étude sur les **Coléoptères Hydradéphages** (Dytiscidae, Haliplidae, Gyrinidae).

Début 1996, l'OFEFP lancait l'**étude de quelques 200 mares et petits lacs** de Suisse dans un but de conservation et de gestion. Les sites retenus ont été choisis sur la base de l'inventaire fédéral des sites à amphibiens d'importance nationale. Cette étude, essentiellement éco-phytosociologique, sera réalisée par le laboratoire d'écologie aquatique de l'Université de Genève. Elle prévoit l'approche complémentaire des peuplements de trois groupes d'Invertébrés (les mollusques, les odonates et les coléoptères hydradéphages) et ceci en étroite collaboration avec le CSCF.

En marge de l'inventaire fédéral des zones alluviales d'importance nationale, l'OFEFP finance la mise en place d'une **banque de données autécologiques** sur la faune caractéristique ou régulièrement observée dans ces milieux afin de donner un outil complémentaire de gestion aux "services conseil zones alluviales" qui ont été créés. Cette BdD est développée par la chaire "Nature et paysage" de l'Ecole polytechnique fédérale de Zürich en collaboration avec le CSCF.

Projets relatifs aux autres milieux ouverts
DA 8 du CDPE: les écosystèmes des herbages

Après une étude préliminaire réalisée au Tessin (ANTOGNOLI & al. 1995), l'OFEFP a décidé de réactualiser l'Inventaire des pelouses sèches d'importance nationale. Les travaux préparatoires de cette vaste entreprise ont débuté en 1994 et le travail de terrain proprement dit a débuté en 1996.

Dans le cadre de ces travaux préparatoires l'OFEFP a demandé aux responsables de ce projet de constituer un groupe d'accompagnement "faune" et de déterminer avec lui les données complémentaires minimales à récolter sur le terrain pour que les efforts consentis se traduisent par l'obtention d'informations utiles non seulement aux botanistes mais aussi aux zoologues. Cette réflexion a abouti à la prise en compte, sur les fiches d'inventaire, des éléments structuraux inclus et limites des surfaces prairiales proprement dites : proportions de surfaces sans végétation (dalles rocheuses, pierriers...), de buissons et d'arbres isolés, de haies, nature et structures des lisières forestières, types de milieux voisins etc.

Dans ce même cadre, l'OFEFP, la LSPN et les cantons de Vaud et de Genève ont en outre accepté de soutenir l'étude d'une trentaine de pelouses sèches (Meso et Xerobromion) de basse altitude du Jura occidental visant à déterminer l'influence de leur entretien sur leurs peuplements d'araignées (thèse de doctorat à l'Université de Genève) et à titre de complément sur leurs peuplements d'orthoptères et de lépidoptères diurnes (18 sites étudiés en 1995).

Projets relatifs aux forêts
DA 9 du CDPE : les écosystèmes forestiers

L'institut fédéral des forêts, de la neige et du paysage (WSL) réalise un projet d'actualisation de la typologie fine des forêts suisses (niveau de l'association végétale voire de la sous-association). Il a aussi développé un réseau national de sites forestiers dans lesquels des informations diverses sont régulièrement récoltées. De telles informations sont notamment utilisées pour évaluer l'évolution de la "santé" des forêts suisses. Un tel réseau représentera sans doute à l'avenir une base précieuse à l'estimation de la diversité de leurs communautés animales.

Une première approche de la faune entomologique de ces milieux a été offerte par la parution du catalogue des Coléoptères Scolytidae de Suisse en 1992. Elle sera prochainement complétée par l'analyse des informations rassemblées lors d'un projet d'inventaire de trois autres familles de Coléoptères (Cerambycidae, Buprestidae et Scarabaeidae), réalisé sous l'égide du CSCF, et par celles rassemblées dans de nombreux projets plus ponctuels mais plus pointus (peuplements malacologiques des frênaies (OFEFP), peuplements arachnologiques de quelques forêts du parc national suisse comme instrument d'évaluation de leur "naturalité" [thèse de doctorat, Université de Lausanne], peuplements entomologiques des diverses strates de quelques lisières forestières [thèse de doctorat, WSL], évolution des peuplements entomologiques de surfaces de forêts dévastées [WSL] par ex.).

Autres projets relatifs aux invertébrés

Certains projets d'envergure sont en phase terminale (rédaction) :
l'inventaire des mollusques de Suisse, publication prévue hiver 96/97, commandité par l'OFEFP et l'inventaire des Orthoptères de Suisse, publication prévue hiver 96/97, commandité par la LSPN
alors que d'autres sont en cours voire même simplement ébauché :
- autécologie et distribution des Bombyces et Sphinges de Suisse, projet du "groupe des lépidoptérologues de Suisse" (amateurs très éclairés) réalisé avec la collaboration du CSCF (saisie des données, analyse de la distribution)
- catalogue des Coléoptères de Suisse et des Diptères de Suisse (probablement plus de 12'000 espèces en tout)
- projet d'inventaire des Hyménoptères aculéates de Suisse, lancé par un groupe d'amateurs éclairés sur le modèle de celui concernant les Lépidoptères
- projet de faune et d'inventaire des Hétéroptères amphi et hydrocorises de Suisse qui rassemble quelques spécialistes

Listes rouges nationales

L'OFEFP vient de publier
- la liste rouge des plantes vasculaires (LANDOLT, 1991)
- la liste rouge d'une partie de la faune de Suisse (DUELLI, 1994): Mammifères, Oiseaux, Reptiles, Amphibiens, Poissons, Hyménoptères Apoides et Formicidés, Diptères Tipulidés, Coléoptères Carabidés, Dytiscidés, Haliplidés et Gyrinidés, Névroptères, Lépidoptères diurnes, Orthoptères, Ephémères, Odonates et Mollusques.

Les listes rouges des bryophytes, des champignons supérieurs et des lichens terricoles et corticoles sont en préparation.

BIBLIOGRAPHIE

ANTOGNOLI, C., LOERTSCHER, M., GUGGISBERGER, F., HAEFELFINGER, S., STAMPFLI, A., 1995. Prairies maigres tessinoises en mutation. Cahier de l'environnement No 246. OFEFP, Bern. 137 pp.

DUELLI, P., 1994. Listes rouges des espèces animales menacées de Suisse. Office fédéral de l'environnement, des forêts et du paysage. Berne. 97 pp.

GONSETH, Y. & MULHAUSER, G., 1996. Bioindication et surfaces de compensation écologique. Cahier de l'environnement No 261. Office fédéral de l'environnement, des forêts et du paysage (OFEFP), Berne. 135 pp.

LANDOLT, E., 1991. Plantes vasculaires menacées de Suisse. Office fédéral de l'environnement, des forêts et du paysage. Berne. 182 pp.

MARTI, C., 1987. Zones d'importance internationale pour les oiseaux d'eau en Suisse. Cartes commentées pour la première révision de l'inventaire. objets 1 - 22. Station ornithologique suisse de Sempach.

OFEFP, 1991. Inventaire fédéral des zones alluviales d'importance nationale (inventaire des zones alluviales). Objets 202 - 208. Bern.

United Kingdom

Dr Stuart G. Ball
Joint Nature Conservation Committee, Monkstone House, GB-Peterborough PE1 1JY

Quinquennial Review of the Wildlife and Countryside Act, 1981

Section 9 of this Act provides protection for species of animals other than birds listed on its Schedule 5. This Schedule is reviewed every five years and the third review is currently in progress. In June - September 1994 a wide range of organisations in the conservation and wildlife field were invited to suggest changes they would like to see and to provide a case on a standard form. A working group, composed of officers from the JNCC and statutory nature conservation agencies (English Nature, Scottish Natural Heritage, Countryside Council for Wales and Department of the Environment (Northern Ireland)), then developed a first draft set of recommendations based on the proposals which were received. These were sent out in June 1995 very widely for consultation and a second draft was written in late 1995 taking account of the responses. This was submitted to the senior officers and councils of the country agencies and, as a result of their comments, a third draft was written in May 1996. This draft includes the following recommendations concerning species listed on the Appendices of the Bern Convention:

Species	Common name	Existing protection	Recommendation
Lucanus cervus	stag beetle	no protection	protection against sale only
Coenagrion mercuriale	southern blue damselfly	no protection	full protection
Lycaena dispar	large copper	protection against sale only	full protection
Eurodryas aurinia	marsh fritillary	protection against sale only	full protection
Margaritifera margaritifera	freshwater pearl mussel	protection against killing and injuring only	add protection against taking

These recommendations will be submitted to the JNCC in June 1996 for their endorsement or, should they require further changes, a fourth draft will be produced by September 1996. JNCC is due to submit its recommendations to the Secretary of State for the Environment in October 1996. The Department of the Environment will then undertake further consultation with other Government Departments, Local Authorities and the public. If the recommendations are accepted after this consultation process, the Secretary of State for the Environment will lay a Statutory Instrument before Parliament to amend the Schedule of the Act.

Measures to protect the white-clawed Crayfish *Austropotamobius pallipes*

For some years, JNCC has been developing a Crayfish strategy[1] in conjunction with the country agencies and the fishery Ministries, aiming to prevent the spread of the crayfish plague to areas where it is not yet established. One mechanism which was recommended was the establishment of "no-go" areas for non-native species of crayfish where their unlicensed keeping would be banned.

The Ministry of Agriculture, Fisheries & Food has laid the "Prohibition of Keeping of live Fish (Crayfish) Order 1996" before Parliament under Section 1 of the Import of Live Fish (England and Wales) Act 1980 which comes into force on 29 May 1996. This defines "no-go" areas (see attached map) to cover river catchments which are clear of crayfish plague and do not have established populations of the non-native signal crayfish, *Pacifastacus leniusculus*.

The Scottish Office, Agriculture and Fisheries Department have laid a parallel order before Parliament to achieve the same aims in Scotland. This makes the whole of Scotland a "no-go" area and also comes into effect on 29 May 1996.

Biodiversity Action Plans

As part of the UK response to the Rio Convention on Biological Diversity, a steering group was formed to recommend actions to Government. The Report of the steering group was published in December 1995[2]. The report included Action Plans for 116 of the most threatened species in the UK including those listed on the Appendices of the Bern Convention. Copies of the relevant Action Plans are attached. The Government responded to these recommendations on 15 May 1996 and has welcomed the species Action Plans. Lead agencies have been identified for each species to coordinate action and "champions" for each species are being sought. It is expected that implementing the Action Plans will involve the statutory conservation agencies, Local Authorities and voluntary organisations.

English Nature Species Recovery Programme

Programmes for the large blue, *Maculinea arion*, and the large copper, *Lycaena dispar*, are ongoing.

The large blue is now established at six localities and was abundant at some of them in 1995. The population from which stock was taken in Sweden for re-introduction in England has not been thriving recently and it is planned to take material form one of the English sites back to Sweden!

Genetic work on the large copper population at Woodwalton Fen has shown that it is heavily inbred. In fact specimens have been identical on every locus that has been examined so far. Animals from Woodwalton Fen are being used experimentally to establish whether proposed re-introduction sites in the Norfolk Broads are suitable. Over wintering survival of larvae appears to be a critical factor. It is intended to re-introduce fresh stock eventually - not the seriously inbred Woodwalton stock.

Scottish Natural Heritage Species Action Programme

[1]Palmer, M 1994. Action plan for the conservation of the native freshwater crayfish *Austropotamobius pallipes* in the United Kingdom. JNCC report No. 193. Peterborough, Joint Nature Conservation Committee.

[2]Biodiversity: The UK Steering Group Report. London, HMSO.

The action programme includes work on medicinal leech, *Hirudo medicinalis*. A survey of historic sites has been carried out to establish the current status and distribution of the leech in Scotland. Several new sites have been discovered and it has been found that it is most readily located not actually in the water, but in piles of decaying vegetation (such as coots' nests) near the edges.

Work on the pearl mussel, *Margaritifera margaritifera*, is also ongoing. A contract was let in 1994 to survey populations, develop a monitoring strategy and assess methods for a national survey. A PhD studentship was begun in 1995 to develop methods to quantify threats to pearl mussel populations.

Countryside Council for Wales

A new pond has been created near an existing site for the medicinal leech, *Hirudo medicinalis*, on Anglesey in an attempt to encourage the spread of the population. Here too, workers have found that it can be very difficult to find leeches actually in the water, but they can be found under vegetation and other objects near the edge of the pond.

A population of the pearl mussel, *Margaritifera margaritifera*, was unexpectedly located in a small headstream in Pembrokeshire. A contract is being set up to survey this and other similar streams in the area to estimate the size of the population. Another population was located when a river in Snowdonia was dredged. Large numbers (>600) of mainly small shells were found in the dredging and at least 400 live animals are still present in the river. Four more populations have subsequently been found in the same area, although these are all small.

A survey of the marsh fritillary, *Eurodryas aurinia*, in Pembrokeshire has recently been completed. This completes coverage of the whole of Wales since 1991 and it is now estimated that there are c. 90 extant colonies in the principality.

Agence Européenne de l'Environnement/European Environment Agency

François Boillot
Agence européenne de l'environnement, Centre thématique européen pour la conservation de la nature, Muséum national d'histoire naturelle, 57 rue Cuvier, 75231 Paris Cedex 05, France

Le Centre thématique européen pour la conservation de la nature a pour tâche l'appui scientifique à la Convention de la biodiversité et à la directive "Habitats".

Pour ce faire le CTE/CN a besoin d'un système d'information sur la nature en Europe (EUNIS Data base).

Dans cette base de données doit figurer une liste de référence des noms d'espèces pour les espèces incluses dans les différents textes légaux (Bonn, Berne, Barcelone Conventions, Directives, etc.).

Un autre élément très important pour EUNIS est la répartition en Europe des espèces listées dans les différentes Annexes. Le rapport sur les invertébrés est, à cet égard, un élément clé de la base de données. Il servira de base pour l'évaluation des inventaires nationaux (Natura 2000). Pour ce faire, il serait intéressant de prévoir la possibilité pour les spécialistes non associés au travail de base de pouvoir s'exprimer sur le rapport, ce qui assurerait une meilleure acceptation "politique" de ce rapport comme **le** document de référence européen sur les invertébrés de la Directive et de la Convention de Berne.

Il doit être bien clair que l'AEE - et, par-là le CTE/CN - a un rôle de recueil et de mise à disposition de l'information auprès de tous les utilisateurs potentiels (Etats, ONG, spécialistes). L'AEE n'a pour le moment ni un rôle de gestionnaire et ni un rôle de recherche.

APPENDIX 4

Draft recommendation on the conservation of *Margaritifera auricularia*

The Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats, acting under the terms of Article 14 of the convention;

Recalling that Article 1, paragraph 2, of the Convention requires that Contracting Parties give particular emphasis to the conservation of vulnerable and endangered species;

Recalling that *Margaritifera auricularia* is listed in Appendix II of the Convention, even if it had not been observed and was thought to be extinct for 80 years;

Recalling its Recommendation No. 35 (1992) on the conservation of some species of invertebrates listed in Appendix II of the Convention in which Spain was invited to survey and take appropriate means to protect *Margaritifera auricularia*;

Congratulating the government of Spain for having undertaken research actions that have resulted in the discovery of a population of *Margaritifera auricularia*, a species thought to be presumably extinct and of which no living specimen had been found since 1917;

Desirous to contribute to the implementation of the Pan-European Biological and Landscape Diversity Strategy and, in particular to its actions regarding threatened species;

Concerned that the only known colony of the species has been found in a canal (Canal Imperial de Aragón) which has been subject in the last fifty years to a process of cementation in a good part of its length and which is periodically dragged, both actions being largely incompatible with the survival of the species;

Having been informed of plans to floor the canal to improve its efficiency for water transport;

Being aware that the presence of the species in the bed of the river Ebro, in Catalonia, has been ascertained;

Taking account of the serious risk of extinction of the species;

Recommends Spain to:

- establish, as a matter of urgency, a recovery plan for the species as foreseen in the Spanish conservation law for species which are critically endangered;

- give appropriate protection and management to the sites where the species survives;

- carry out a full survey of the Canal Imperial and appropriate sites in the river Ebro and tributaries (especially the river Jalon);

- promote research on relevant aspects of the biology and conservation of the species, which is poorly, giving special attention to the identification of host freshwater fish species;

- consider carrying out a captive breeding and re-introduction programme.

Recommends member states of the European Union to:

- consider listing *Margaritifera auricularia* in Annex II of the Directive on the conservation of natural habitats and wild fauna and flora, taking into account the fact that when the Directive was adopted no living population of the species was known.

Recommends France and Italy to carry out surveys to search for the species in sites where it is known to have occurred.

APPENDIX 5

Recommendation of the Group of experts on Conservation of Invertebrates concerning matters of general interest and conservation of some invertebrate species listed in the Appendices to the Convention

Contracting Parties are recommended to:

1. Pursue implementation of Recommendation No. 35 (1992);

2. Take into account threatened invertebrates when carrying out environmental impact assessment;

It is further recommended that France and Spain:

3. assess the current conservation status of the mollusc *Elona quimperiana*.

It is further recommended that Germany:

4. assess the current status of the relict population of *Carabus menetriesi* in Mecklenburg-Vospommern (Peenetal) in particular with regard to the threat from the construction of a motorway (A20). It is recommended that measures be taken to ensure the survival of *C. menetriesi* and associated species by preventing damage to its habitat.

It is further recommended that Italy:

5. assess the impact (particularly on the populations of *Carabus olympiae*) of the winter sports projects planned for the valley of Sessera, on the locality described as typical for *C. olympiae* (Bielmonte, Monte Marea, Montecerchio, Roccia d'Argimonia).

It is further recommended that Portugal:

6. carry out a full survey and taxonomic study of the many snails from Madeira listed in Appendix II of the Convention, so that the real threats to the species may be known;

7. inform the group on the actions being taken in that state regarding invertebrate conservation, in particular for species listed in Appendix II of the Convention.

APPENDIX 6

Draft recommendation on action plans for invertebrate species in the Appendices of the Convention

The Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats, acting under the terms of Article 14 of the Convention,

Having regard to the aims of the convention to conserve wild fauna and its natural habitats,

Recalling that Article 1, paragraph 2 of the convention requires Parties to give particular emphasis to the conservation of endangered and vulnerable species,

Noting that some invertebrate species listed in the Appendices of the convention have critically endangered populations,

Desirous to avoid a further loss of biological diversity in the continent,

Aware that the design and implementation of Recovery Plans may be a useful tool to redress the situation of threatened invertebrates,

Recalling its own recommendations concerning the conservation of invertebrates, in particular the following recommendations

- No 18 (1989) on indigenous crayfish,
- No 21 (1991) on hymenoptera and their habitats
- No 22 (1991) on the pearl mussel (*Margaritifera margaritifera*) and other freshwater mussels (*Unionoida*)
- No 29 (1991) on wetland invertebrates
- No 35 (1992) on some species of invertebrates listed in Appendix II
- No 36 (1992) on the conservation of underground habitats

Recommends that Contracting Parties to the Convention or invites other states, as appropriate, to:

1. Consider (or, if appropriate, reinforce) recovery plans for endangered endemic species and for species listed in Appendix A to this recommendation.

APPENDIX A

Bern Convention invertebrates requiring recovery plans (or Action Plans) throughout its European scope

1. 1st priority species

INSECTA
- *Odonata*
  - Leucorrhinia pectoralis
  - Ophiogomphus cecilia
  - Stylurus flavipes
- *Coleoptera*
  - Graphoderus bilineatus
  - Osmoderma eremita
- *Lepidoptera*
  - Coenonympha hero
  - Coenonympha oedippus
  - Hypodryas maturna
  - Maculinea nausithous
  - Maculinea teleius
  - Parnassius mnemosyne

CRUSTACEA
- *Decapoda*
  - Austropotamobius pallipes

Molluscs/Mollusques

BIVALVIA
- *Unionoida*
  - Margaritifera auricularia
  - Margaritifera margaritifera

2. 2nd priority species

INSECTA
- *Odonata*
  - Coenagrion mercuriale
  - Leucorrhinia albifrons
  - Leucorrhinia caudalis
  - Oxygastra curtisii
- *Coleoptera*
  - Buprestis splendens
  - Dytiscus latissimus
- *Lepidoptera*
  - Lopinga achine
  - Maculinea alcon
  - Maculinea arion
  - Maculinea rebeli

APPENDIX 7

Draft recommendation on habitat conservation for invertebrate species

The Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats, acting under the terms of Article 14 of the Convention:

Having regard to Recommendation (86) 10 of the Committee of Ministers of the Council of Europe concerning the charter on invertebrates;

Recalling that diversity of invertebrate species accounts for most of the animal diversity of Europe;

Recalling that 81 species of invertebrates are listed in the appendices to the convention;

Considering that habitat protection and habitat management are useful conservation tools as regards the preservation of invertebrate species;

Noting, however, that many invertebrate species are dependent on the presence of some features of their natural habitats, like dead wood, hedges or small wetlands which are of no particular interest for vertebrate species and the conservation of which tends to be neglected;

Desirous to promote the conservation of invertebrate diversity,

Recommends Contracting Parties to:

1. Establish conservation or recovery plans for threatened invertebrate species, particularly those in the appendices of the convention; use in that context habitat conservation and habitat management measures; while designing those plans take into account the specificities of invertebrate conservation, in particular the need to preserve metapopulations and to conserve a mosaic of interrelated habitats which are all needed to maintain species in a favourable conservation status;

2. While protecting habitats, pay particular attention to the preservation of ecosystems which are of great importance for invertebrate conservation on the European side: marine ecosystems, old growth deciduous forests, wetlands, Mediterranean-type ecosystems; ecosystems which are isolated geographically or ecologically are of a particular importance for endemic species (islands, caves, high mountain ecosystems, hyperhialine habitats, very dry ecosystems);

3. Encourage that management of habitats be done in such a way that particular attention be given to the preservation of some landscape features (dead wood, small brooks, hedges, etc) which permit the creation of microhabitats fundamental to the survival of many invertebrate species;

4. Survey natural habitats for invertebrate fauna, making an extensive inventory of invertebrate species, with special attention to rare and endemic species; encourage sampling of under-sampled biotopes like swamps, summits, canopy, underground ecosystems and hyperhialine biotopes;

5. Promote research in habitat measures needed for invertebrate conservation.

APPENDIX 8

Background to the recommendations with respect to marine nature conservation for the meeting of the invertebrate group of the Bern Convention, Killarney, Ireland, May 1996

It is particularly appropriate that the Invertebrate Group of the Bern Convention should be concerned with marine nature conservation because in the sea, invertebrates are often the dominant life in terms of space occupation, biomass and ecosystem function. The Convention has shown itself to have an important role in developing nature conservation policy and priorities in Europe. It has dealt with groups which are also the subject of other conventions because it has a unique membership, and other conventions may be more focused on environmental quality (eg OSPARCOM) than species or biotope orientated conservation. The coastal and marine environment is now recognised as a priority area for attention in terms of general environmental management and planning, fisheries protection, pollution control, biodiversity and nature conservation. However, very few marine invertebrates and biotopes have been prioritised for nature conservation. This lack of attention is more a reflection of the poor state of knowledge of the marine environment than any objective evaluation of what is most threatened.

A small but representative group of marine scientists present at the Killarney Colloquium prepared a draft recommendation to the Bern Convention with respect to marine nature conservation. This asks the Convention to support existing measures (by ICES, FAO, OSPARCOM, IMO) to protect the marine environment and its species, and welcome initiatives by other organisations in this general area (eg EU MAST, IOC, Diversitas). In doing this it shows the Bern Convention is aware of and interested in such beneficial actions. In conjunction with this the Convention should study in more detail what areas are being and not being covered at a European level in marine nature conservation. Thus the Bern Convention can best focus its efforts to ensure that marine life is protected within Europe.

Dr Mark J. Costello, Environmental Sciences, Trinity College, Dublin 2, Ireland

Recommendations of the Group of experts on Conservation of Invertebrates with respect to marine nature conservation

Recognising

- the Convention on Biological Diversity and widespread recognition of the importance of coastal zone management and conservation,
- that a range of European and international organisations are interested and active in marine environmental management, including the use and conservation of marine invertebrates,
- the direct economic importance of marine fisheries, aquaculture and recreation,
- the very limited knowledge on the distribution and abundance of most marine invertebrates,
- the continuing high rate of discovery of marine invertebrate species new to science in European seas,
- the responsibilities and important but quite limited activity concerning marine nature conservation by the Bern Convention to date, and
- the responsibilities to, and important but currently limited activity concerning, marine nature conservation by the Bern Convention to date,

1. It is recommended that the Bern Convention

(a) conduct a review of activities concerning the conservation of marine species and biotopes in Europe,

(b) communicate with other relevant organisations (eg International Council for the Exploration of the Sea, European Commission, European Environment Agency, Barcelona Convention, Oslo-Paris Commission, Food and Agriculture Organisation, Diversitas, UNESCO, Intergovernmental Oceanographic Commission, International Maritime Organisation) to promote links between organisations and programmes in marine nature conservation and identify gaps in activity,

(c) review threats to marine species and biotopes and assess how the convention can best support measures to reduce harmful impacts,

(d) consider methods to determine marine species of nature conservation importance,

(e) promote the production of a computerised inventory of the distribution of marine organisms in Europe.

2. Request member states with marine environments to

(a) develop research programmes to further document, monitor and understand marine biodiversity in Europe,

(b) implement more environmentally-friendly and precautionary approaches to fisheries management as recommended by FAO,

(c) implement the ICES code and IMO guidelines to reduce the movement of unwanted organisms associated with shipping, aquaculture, recreational fisheries and other activities,

(d) implement the necessary actions identified by OSPARCOM to control and assess inputs of contaminants to the marine environment (eg organotins, herbicides, nutrients),

(e) promote public awareness of threats to the marine environment (eg threatened species, invasive species).

3. Welcome the initiatives in marine biodiversity by

(a) Diversitas,

(b) the European Union Marine Science and Technology research programme, and

(c) the Intergovernmental Oceanographic Commission.

APPENDIX 9

Recommendation of the Group of experts on Conservation of Invertebrates concerning saproxylic invertebrates

Taking into account the report of Dr Jervis Good and Dr Martin Speight, T-PVS (96) 31, the Group recommends that the Standing Committee amend Appendix II to the convention to include the following species of saproxylic invertebrates:

Diptera
1. Keroplatus tipuloides

Coleoptera
2. Liocola lugubris
3. Milesia crabroniformis
4. Morimus asper
5. Morimus funereus

It is also recommended that the following species be considered as potential candidates for Appendix II, and that particular importance be given to their occurrence when selecting ancient forests for protection (species in bold typeface are in Appendix II of the Convention or listed above) :

1. Species associated with saproxylic habitats on living trees

a) Tree holes

I) Large trunk cavities: *Elater ferrugineus, Lacon spp.n* spp., *Limoniscus violaceus,* ***Liocola lugubris, Osmoderma eremita****.*

II) Rot-holes

i) low on trees: *Chalcosyrphus piger, Gnorimus decempunctata, G. octopunctatus, G. variabilis,* ***Milesia crabroniformis****, M. semiluctifera*

ii) high on trees: *Cetonischema aeruginosa, Eupotosia koenigi, Solva maculata, Pocota personata*

iii) with standing water: *Callicera aenea, C. aurata, C. fagesii, C. macquarti, C. rufa, C. spinolae*

b) Tree wounds/sap runs: *Ferdinandea aurea, Myolepta nigritarsis, M. vara, Brachyopa ferruginea, Myolepta obscura, Sphiximorpha subsessilis*

c) Arboricolous fungi: *Ctenophora spp., Grynocharis oblonga,* ***Keroplatus tipuloides****, Peltis grossa*

d) Dead branches: *Chlorophorus herbsti, Lioderes kollari, Ropalopus insubricus, R. macropus, R. ungaricus*

e) Dead roots: *Acmaeodera degener, Akimerus schaefferi, Buprestis octoguttata, Caliprobola speciosa, Chalcophora intermedia, C. mariana, Kisanthobia ariasi,* ***Lucanus cervus*****, *M. semiluctifera, Melanophila formaneki, M. knoteki,* ***Milesia crabroniformis***

f) Workings of/presence of other saproxylic invertebrates: *Laphria ephippium, L. flava, L. gibbosa, Prostomis mandibularis, Pytho abieticola, P. depressus, P. kolwensis*

2. Species associated with saproxylic habitats on dead trees

a) Standing timber

i) In the open: *Anthaxia midas,* ***Buprestis splendens*****, *Dicerca acuminata, D. berolinensis, D. herbsti, D. moesta, Eurythrea austriaca, E. quercus, Latipalpis plana, Oxypleurus nodieri*

ii) Under the tree canopy: *Acanthocinus henschi, A. reticulatus, A. xanthoneura,* ***Cucujus cinnaberinus****, *Macrotoma scutellaris*, Rhysodidae (all species), *Rosalia alpina*, Saphanus piceus, Tremax fuscicornis, Xiphydria camelus, X. longicollis, X. prolongata*

iii) Burnt: *Melanophila cyanea*

b) Recently fallen timber

i) Under the tree canopy: ***Morimus asper, M. funereus****, Tragosoma depsarium*

ii) Partially submerged in water/seasonally flooded: *Chalcosyrphus eunotus, Temnostoma apiforme*

c) Timber in an advanced stage of decomposition: *Ampedus quadrisignatus, Anostirus parumcostatus*

* In Appendix II of the Convention
** In Appendix III of the Convention

APPENDIX 10

Sub-group on high mountain invertebrates

Draft Report

prepared by J.R. Haslett

As discussed at the 3rd meeting of this Group of Experts in Strasbourg in 1994, the work of the sub-group has been carried out autonomously within the structure of the Specialist group for High Altitude Ecology of the European Ecological Federation. Two formal events have been held that have had a direct bearing on the conservation of mountain invertebrates.

1) A Symposium entitled "Complexity and simplicity of mountain ecosystems", held within the 6th International Congress of Ecology in Manchester, England in 1994.

2) A scientific Workshop on "Spatial heterogeneity and environmental change in mountain areas" within the 7th European Congress of Ecology in Budapest, Hungary in 1995.

Both meetings dealt with a wide spectrum of mountain organisms, from plants to vertebrates, but on both occasions recognition of the importance of invertebrates was clearly apparent. A need for "scale-orientated" research and a general concern for the effects of environmental change, including climate change, on invertebrate components of mountain ecosystems were strongly expressed.

In addition to the above meetings, specific effort has been focussed upon the invertebrate fauna of the mountains of northern Greece. Direct contact with invertebrate ecologists at the University of Thessaloniki has permitted a clear assessment of the threats posed by recent increases in skiing in winter and the use of mountain retreats in summer to avoid the intense heat typical of lower altitudes. The invertebrate fauna of the Greek mountains is poorly documented and intensive exploitation of the area by humans has just begun. The situation seems ripe for further concentrated research to provide a basis for appropriate management and conservation measures.

Judging by discussions at both of the above meetings, together with the considerable volume of correspondence expressing the wish to be actively involved, it is clear that interest in mountain invertebrate conservation is extremely high - so high that it has become impossible to provide an efficient network without administrative and financial assistance.

The future of the sub-group on high mountain invertebrates is presently unknown. Whether to continue to function through the organisation of workshops and symposia, or whether it is feasible to create an organisational centre for the exchange of information and ideas is open to discussion at the present meeting.

To coldly go

photo copy extract from Nature Vol 379 Feb 96