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for the Conservation
of Fungi**

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Newsletter 13 – December 2003

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Letter from the President

By Anders Bohlin
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Trollhättan 11 November, 2003.

Dear colleagues in ECCF,

The last years ECCF has been the constructive organisation we wanted it to be. In co-operation we have used our gathered efforts and competence to reach our goal to bring fungi on the European agenda for nature conservation. For that sake we also have to express our gratitude to the Swedish Environmental Protection Agency and Swedish Threatened Species Unit for their tremendous compilation-work this year.

Today it is not possible to change something in the proposal for the Bern Convention, neither its contents, deficiencies nor credits. It is very important that we mycologists in Europe are united in this proposal, even if we know of some deficiencies. We have been working for this about 10 years now and it was possible to make comments in spring 2001 when the list of the 33 species was presented to mycologists. It has been a politically a very long way to make the choice of species and first of all get a political interest of the proposal. It demanded years of preparation. The delegates of the EU-habitat committee made their decision October 14 in Brussels: A negative decision for us. 11 member states voted to delay the decision which would be equal to objecting to the current proposal to the Bern Convention, 3 voted in favour of the proposal and nobody voted directly against. That means that the EU commission will block a decision in the European Council's Bern Convention in the beginning of December. In this situation the Swedish Government has no choice but withdraw the proposal temporary. This means that it will probably take 2 – 5 years before chances making a new proposal are given. At that time it will concern at least 25 member-countries in stead of 15 today. Consequently more mycologists can give their opinions. There will never be a proposal that suits all and it will always be possible to argue for a better species-choice. Today we have a unique chance to get fungi in the agenda of nature-conservation. Under the treatment in the EG-habitat committee this autumn species could have been removed from the proposal but no species could have been added. None of the species you call in question are given priority or proposed as legal protected. Even if a species is in the Habitat Directive, it can be free for picking, provided that the harvesting not makes the populations-development negative. The big threat are the changes in their habitat. We can't see obstacles for further picking of species that are common in a certain region if the law in the country not does protect it. Do not forget the European perspective of the distribution and occurrence of this species. As an example *Gomphus clavatus* is judged as endangered in 17 countries, *Tricholoma colossus* in 13 countries and so on. Countries that have more of it should be proud of the rich occurrence of this species and feel responsibility in European point of view. If you object that the list contents many boreal species you are right, but we were not given suggestions of more Mediterranean species.

As you can see we have many subjects for discussion further on. Your big task now is to try to influence your own representative in the habitat committee in your home country.

As all of you should be aware at this time Beatrice has made a nice site on the web for us <http://www.wsl.ch/eccf> and we owe her a debt of gratitude for that.

The mapping project and other of our projects goes on in silence. We are all working idealistic so we can only work in our free time but never the less we go ahead!

One of our goals is to make ECCF more established and we are open to suggestions how to do. We think we will be more official then. Beatrice and I are looking into the matter.

September 20-21 we had our meeting in connection to the CEM XIV in Katsiveli in Ukraine, and decided to start up the work with a European Red list as soon as possible. We are also applying to grants and other institutions for money to that.

To next ordinary meeting of ECCF, Alexander Kovalenko invited us to Russia 2005.

I want all of you all the best!

Anders Bohlin
President of the ECCF

ECCF meetings before and during the XIV Congress of European Mycologists in Katsiveli, Yalta, Crimea September 2003.

By Claudia Perini
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Participants:

Anders Bohlin from Sweden
Anders Dahlberg from Sweden
André Fraiture from Belgium
Catalin Tanase from Romania
David Minter from UK
Dusan Jurc from Slovenia
Erast Parmasto from Estonia
Heikki Kotiranta from Finland
Alexander Kovalenko from Russia
Olga Morozova from Russia
Pavel Kolmakov from Belarus
Joao Baptista-Ferreira from Portugal
Maria Lawrynowicz from Poland
Siranush Nanagulyan from Armenia
Irina Dudka from Ukraine
Stefanos Diamandis from Greece
Claudia Perini from Italy

Guests:

Evgeny Popov, Russia
Nadezhda Psurtseva, Russia
Tatyana Svetasheva, Russia
Olga Morozova, Russia
Greg Mueller, USA
Betty Strack, USA
Pavel Kolmakov, Belarus
Eugene Jurchenko, Belarus
M. Shams, Iran
M. Razzaghi, Iran
D. Zafari, Iran
S. Mahdavi Omram, Iran
Miriam Gvritishvili, Georgia
Paul Kirk, UK
Sara Branco, Portugal
Beate Sumorok, Poland
J. Luszczynski, Poland
Dominika Seta, Poland
Vera Hayova, Ukraine
Karin Bohlin, Sweden
Michael Jeppson, Sweden

Excused are:

Klaus Hoiland, Jan Vesterholt, Salomon Wasser, Irmgard Krisai-Greilhuber, Shelley Evans, Vladimir Antonin, Maarit Kaukonen, Gudfridur Gyda Eyolfsdottir, Marijke Nauta, Sven Svensson, Francesco Bellu, Regis Courtecuisse, Peter Otto, Beatrice Senn-Irlet

20.09.2003, evening:

In the evening, even if later as foreseen from the program because of different arrival times, the ECCF meeting started anyway with a full Aula Magna! More than 30 people, many of them new, were sitting awaiting infos... Our President, Anders Bohlin (Sweden) opened the meeting expressing the ECCF thanks to the XIV CEM organizers that hosted and facilitated our work. He presented the ECCF-webpage made by Beatrice Senn-Irlet, so everyone can have a look, explained our aims and activities, commented the calendar of done meetings and publications.

Following the program Anders Dahlberg (Sweden) summarized the history of the 33 fungal species proposed to be included in the appendix of the Bem Convention, he explained steps and difficulties. Anders described the general information written in the first pages of the Report (you can find the whole document in http://www.artdata.slu.se/Bern_Fungi/Bern_Fungi.htm). He underlined the important connections between the Bern Convention and Habitat Commission:

Bern Convention (1979): 45 members had an agreement for conserving wild flora and fauna – little legislative power; Habitat Directive (1992): members of the EU states are required through monitoring and actions to guarantee sustainable populations and this has a strong legislative power!

A first attempt to present the ECCF document also to the Habitat Commission has been done last 16 September (the outcome was uncertain) and the proposal will be discussed next October; then again the Swedish Ministry will be present at Strasbourg end of November.

Of course the support of all countries in these actions could be decisive and ECCF members were invited to contact their representatives, but not all countries were agreed with the species selection!

Some points were again discussed such as a better precision in habitat requirements and which species are negotiable? Heikki Kotiranta, Anders Bohlin, Claudia Perini expressed their national situation and a discussion started. Anyway everyone agreed that, even if some species will be deleted and no news will be added at this time, the action should be pushed.

21.09.2003, morning:

Our president gives the good morning greetings to the numerous participants (again about 30 people!), asked if there were some questions or requests of explication and then the program continues starting from the postponed contribute of the evening.

Claudia Perini (Italy) reported on the last news from Planta Europa. She underlined the work that ECCF did to find official contacts (Planta Europa and IUCN) and now what happens? People know about us, aims are written, targets with milestones are established! In order to facilitate the movements of the past months she exposed and illustrated the target-oriented strategy for the Plant Conservation for Europe (for more info see the "News from Planta Europa" in the present ECCF newsletter 13). Attention was given to target 1.2 (Red listing), 1.4 and 1.5 (IPAs) and to the fact that also IUCN is awaiting something from us....

The contribution was concluded by Heikki Kotiranta (Finland) with the Finnish experience on IPAs explaining their approach that consists principally in searching new sites from a mycological point of view, outside the Natura 2000 areas and other zones just protected. Key sites are individualised, protection programmes are underway for most endangered fungi.

A short discussion (Erast Parmasto, Stefanos Diamandis, Anders Dahlberg, André Fraiture...) on red listing and IPAs started, but it was decided to have a third meeting during the Congress only for this two hot points.

The report "from Oslo to Oslo" as Maria Lawrynowicz (Poland) herself said, described the important steps of ECCF activities from its establishment in 1985 up to now in the development of fungal conservation and the role of Congresses, European and international ones.

Red listing of Fungi in various Russian Regions was the contribution by Alexander Kovalenko (Russia). The National Red Data Book of RSFSR (1988) includes only 17 fungi – too few to reflect the threatened fungal diversity. The new edition will include a list of 33 species (different ones as that of the Bern Convention as Irina Duka asked) protected by law and an additional list of fungi that need a special attention. Moreover, according to the law, every 89 administrative units will have their own red lists (for now 20% of the regions have). The tasks of the Russian Committee for the conservation of fungi (established in 2002) is to coordinate and try to unify the activities on red listing with a pyramid-like organization.

Erast Parmasto (Estonia) in "Monitoring of fungal diversity in Estonia" focalized on the difficulty to have numerous permanent plots to monitor for a long time, this because programmes changes, students and researcher changes, etc. In order to escape the possibility to "loose" those at present plots are well localized and described in a precise way. 50% of the country is covered with forests, 4 National Parks and numerous protected areas are present. The selection starts from forestry maps searching old growth forests as key sites, managed or not. He underlined the Estonian- Swedish project – an inventory of Woodland Key Habitats - and the preselection of Natura 2000 areas.

Towards the Red list of Fungi in Slovenia was the talk of Dusan Jurc (Slovenia). More than 200 years ago Scopoli listed and described in "Flora Carniolica" about 100 fungal species. Mushroom picking for food becomes popular only in this last 30 years. Today a good list of fungi published with descriptions and pictures is protected by law (1993, 1998).

Regarding the "Mapping and monitoring of macromycetes in Europe" ECCF project André Fraiture (France) shows by help of a short Interim Report received by Peter Otto, the first elaboration on the frequency of sites in the countries answering the questionnaire before 15 September (Austria, Bulgaria, Italy, Latvia, Malta, Portugal, Romania, Serbia and Monte Negro, Spain (and Russia). As it can be seen various countries are still absent and a new deadline – but the very last one – was decided: 30.12.2003.

Various other contributions on conservation aspects were presented during the XIV CEM.

23.09.2003 afternoon and the European Fungal Redlist!

Continuing the discussion started on Sunday on Red listing and IPAs, ECCF members from Spain, Portugal, Greece, Estonia, Poland, Hungary, Finland, Sweden, U.K., Russia, Belgium, Slovenia, Belarus, and Italy worked again together.

First to fulfil an engagement or accomplish a task promised at Planta Europa and IUCN and second as a better source for identifying threatened species for IPAs (in fact up to now if we'll work with criterion A "threatened species" we can principally only use the Bern Convention species or wait decisions on eventual additions to the accepted list of sources) the urgent need of an European Red list (already on the ECCF agenda since 1985) was clear!

The first question "is a European Red list for fungi possible?" was answered "yes" after discussions and ended with the agreement of the present mycologists to the project "European Fungal Red list by 2005!"

Everybody contributed to list the principal steps that had to be gone and the needs, to elaborate the timetable. A smaller group (Anders Dahlberg, Heikki Kotiranta and I) is working on a document, that will be send around soon, in order to illustrate the project, background, goals, steps and needs. A manual/guideline for the application of the IUCN criteria on fungi will be written too.

What shall you do now? First steps and two deadlines:

By December 2003: suggestions of possible funding sources (national or inter.) will be welcome! This in order to fund 2 persons to work as coordinator for 1 year and to finance meetings of the group of experts working on the evaluations, to print the resulting book. Please email as soon as possible your possible suggestions and contacts to Bohlin or me. Thanks!

By 28 February 2004: sending of available Red lists national, local, official and none and preliminary ones. The collection of information and the compilation of a general list will be coordinated by the mycologists Anders Dahlberg and Hjalmar Croneborg at the Swedish Species Information Centre that will allocate part of their time for the work. Thanks!

Claudia Perini, December 2003

News from Planta Europa

By Claudia Perini
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From the last ECCF newsletter n. 12 up to day the Steering Committee of Planta Europa, in addition to the continuous email contact, met several times; I was present at Valencia in November 2002 and Bratislava in May 2003. Here a summary on the most important points. Please apologize if you feel confusion in this report, but many things happens, ideas and meetings overlapped, decisions were taken...

The first things that you have to put on your agenda are the next Conference of Planta Europa that will take place in 2004, 17-21 September at Valencia! The workshops will be on the implementation of the Global Strategy Plant Conservation in a European context. One of the focal points will be on conservation: identifying IPAs, protecting euroflora, microreserves, Agriculture and Forestry. Anders Dahlberg will be key speaker for "Lower Plants".

As you see the problem to halt the current and continuing loss of plant diversity is a focal point and you know that strategies for the conservation, a Global and a European one, have been developed.

Both - the Global Strategy for Plant Conservation (approved in Decision VI/9 of the Conference of the Parties (COP) to the Convention on Biological Diversity on 19 April 2002 in The Hague) and the European Plant Conservation Strategy (of the Council of Europe and Planta Europa and published in UNEP/CBD/COP/6/INF/22 as a contribution to, and part of, the Global Strategy for Plant Conservation adopted by COP 6) - address five major objectives: understanding and documenting plant diversity; conserving plant diversity; using plant diversity sustainable; promoting education and awareness about plant diversity and building capacity for the conservation of plant diversity.

The European Plant Conservation Strategy (EPCS) list more than 40 targets and in some of that bryophytes, lichens and macrofungi are included as well (reported in ECCF Newsletter 12).

The first objective of the EPCS, on what we are focusing now, "UNDERSTANDING AND DOCUMENTING PLANT DIVERSITY", is introduced by following words:

"If the steady decline of plant diversity is to be halted, a thorough understanding of the European flora is needed. This must include full listing and assessment of our wild plants, their abundance, and monitoring of change in their distribution and status."

In this object target 1.2 says: European Red List for vascular plants, revised list for bryophytes, and preliminary Red Lists for lichens, macrofungi and other selected groups must be published!

Moreover targets 1.4 & 1.5 deal with Important Plant Areas (including IPA's for fungi).

Also IUCN, that signed a Memorandum of Understanding in September 2002 with Planta Europa and don't forget that we are present in the SSC fungi (Species Survival Commission), adopted this targets among its priorities.

In Newsletter 12 details on IPAs were written, so here I report only this: "an IPA is a natural or seminatural site exhibiting exceptional botanical richness and/or supporting an outstanding assemblage of rare, threatened and/or endemic plant species and or vegetation of high botanic value." Research to assess effectiveness of IPA approach initiated (Identifying Important Plant Areas, Plantlife 2002). In view to complete a draft IPA inventory for Europe by 2007, the IPA Secretariat developed plans to bring countries into the programme in groups:

Workshops in Central and Eastern Europe - the first seven countries, January-march 2003: Belarus, Czech Republic, Estonia, Poland, Romania, Slovakia, Slovenia; meetings in Finland; First contacts in the Mediterranean Region by IUCN Centre for Mediterranean Cooperation, June 2003: Algeria, Croatia, Cyprus, Egypt, France, Greece, Italy, Lebanon, Malta, Morocco, Portugal, Spain, Tunisia, Turkey, Gibraltar.

To identify the IPAs, there are 3 criterions: A - the site holds significant populations of 1 or more species that are of global or European conservation concern (threatened species taken from the Bern Convention and ...

European Red List), B - the site had an exceptionally rich flora in an European context in relation to its

biogeographic zone (species richness), C - the site is an outstanding example of a habitat type of global or European plant conservation and botanical importance (threatened habitats).

At the Steering Committee in Bratislava (May 2003), a session was dedicated at the target IPA; as written above CEE countries started as first and some mycologist were involved (I saw in the slight Vladimir Antonin participating at a meeting and spoke directly with Pavel Lizon present too at that SC meeting): from the first report that I read on IPAs in 7 CEE countries in the point about lower plants, fungi and algae the main conclusions were: "...exchange of information between specialists in different countries and dissemination of any pilot project work is highly desirable; these groups may be assessed using IPA criteria either separately...". Adopting IPAs criteria for fungi has its problems, as foreseen, particularly for criterion A (threatened species). Due to the lack of a European Red list and a national knowledge of threat of endemic or nearly endemic species, it is at present based on the Bern Convention list - list that is still only a proposal. The fact that the list does not cover the reality for every country (point underlined by Pavel, too), is similar also for plants and habitats that during this last years of the Natura 2000 survey find out different situations and new proposals to be added are ready.

Elisabeth Radford "mentioned that everyone should have a closer look at criterion B (species richness) where sites can be classed as IPAs only with fungi species, without waiting for a red list. In UK for example there is a list of the Important Fungi Areas and it enables the UK to identify key sites."

From that and other discussions and emails the lack of an European Red list for Fungi was recognized as a big problem! Recently meetings and workshops have been organized to encourage the idea of redlisting and the use of IUCN criteria: Harmonisation of Red Lists in Europe, 27-28 XI 2002, NATURALIS, Leiden, The Netherlands; Red listing of fungi in the Nordic and Baltic countries, 2-4 IX 2003, Flämslätt, Sweden; How to use the IUCN criteria in Russia, 15-16 IX 2003, Guzeripil, Russia.

Eef Arnolds informed me on what happened in the past, on difficulties and so on and agreed to give his support. The Swedish Species Information Centre will allocate part of the working-time of Anders Dahlberg and Hjalmar Croneborg for this project.

Finally I proposed to put Red listing on the ECCF agenda for September and what happens you can see in the chapter "ECCF meetings before and during..."

Claudia Perini, December 2003

News on protection of habitats of fungi in Estonia

By Erast Parmasto
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More than a half of Estonia (22,490 sq. km) is covered with forests. In 1999-2003, two projects were carried out to ensure protection of all forest site types and thousands of woodland key habitats. Estonian mycologists took part in these projects, partly in inventory of fungal biota in old growth forests, but mainly teaching field workers (mainly foresters) how to use fungal indicator species to characterize the biodiversity of the forests.

For the Network of Forest Reserves 136 new areas (37,821 ha) - in addition to the existing protected areas - were selected. Until final decision of creating new Nature Conservation Areas, all forest management was stopped in these areas by the Ministry of Environment. The project was a joint enterprise of Estonian ministry and Danish Environment Protection Agency. The results were published in Estonian (Viilma *et al.*, 2001).

Woodland Key Habitat Inventory, a joint Estonian-Swedish project was carried out 1999-2002 to assess the distribution of forest habitats with the highest value in managed forests. 7,007 key habitat sites (19,059 ha) were detected and mapped. The key habitats owned by the state (more than 4,000) are well protected now; in private forests, contracts between forest owners and the Ministry of Environment will be concluded. Until now, this is going on slowly. Among other key habitats, there is the Liiva-Putla fungus conservation area (18 ha). The results of the inventory have been published in Estonian and in English (Andersson *et al.*, 2003). In that book, distribution maps and illustrations of several rare and indicator fungi have been given.

In Estonia, there are 4 National Parks, 359 Nature Conservation Areas and Landscape Protection Areas; 409 Natura2000 areas were pre-selected in Estonia recently. Together with the new Network Forest Reserves and Woodland Key Habitats, there are numerous habitats where not only animals and plants, but also fungal species are protected.

Fungal biota of 5 nature reserves has been studied and lists of species have been compiled recently. One of the most interesting areas is the Järvelja Forest Reserve of 19 ha (founded 1924) where 618 species of fungi have been found.

In 1999, distribution maps of fungi protected by law (29) and/or included into the Estonian Red Data Book (91) were published (Parmasto, 1999). In 2004, annotated distribution maps of Estonian polypores (206 species) will be printed.

Literature cited

Andersson, L., Martverk, R., Külvik, R. *et al.* 2003. Woodland Key Habitat Inventory in Estonia 1999-2002. Regio Publishing, Tartu. 112 p. + 80 p. of maps (1 : 150,000).

Parmasto, E. (ed.) 1999. Distribution maps of Estonian fungi. 2. Protected species and species of the Estonian Red Data Book. Institute of Zoology and Botany, Tartu. 94 p.

Viilma, K., Öövel, J., Tamm, U. et al. 2001. Eesti metsakaitsealade võrgustik [Network of Estonian Forest Reserves. In Estonian.] Triip Grupp, Tartu. 83 p. + 243 p. of maps (1 : 5,000 – 1 : 30,000).

Erast Parmasto, August 2003

Report on mushroom conservation in Poland

By Maria Lawrynowicz

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In this report the present situation and activities towards fungal conservation in Poland are outlined. The knowledge on macrofungi is slowly but continuously expanding. At present the checklist, new edition of red list and mapping programme are in course of elaboration.

Check lists

The W. Szafer Institute of Botany, Polish Academy of Sciences in Kraków, initiated a wide editorial programme "Biodiversity of Poland" which consists of 10 volumens. Among them vol. 6-10 concerning fungi *sensu lato* are planned to be published in 2004: vol. 6 – Polish lichens and lichenicolous fungi. An annotated checklist (W. Faltynowicz), vol. 7 – Checklist of Polish larger Basidiomycetes (W. Wojewoda), vol. 8 – Checklist of Polish larger Ascomycetes (M.A. Chmiel), vol. 9 – Polish microfungi. A checklist (W. Mullenko, J. Majewski), vol. 10 – Myxomycetes of Poland. A checklist (W. Stojanowska, A. Drozdowicz, A. Ronikier, E. Panek). The checklists of larger Ascomycetes and Basidiomycetes are the basis for a new edition of the red lists.

Red lists

In Poland the red list of macrofungi compiled by Wojewoda and Lawrynowicz (1992) is still used. There exist also three local red lists for: Polish Carpathians (Wojewoda 1991), Upper Silesia (Wojewoda 1999) and Swietokrzyskie Mountains (Luszczynski 2002). All these lists use traditional criteria of IUCN.

Now, a new project for the red list of macrofungi with adoption of new criteria IUCN 2001: Categories and Criteria, Version 3.0 is being arranged. The new edition of Red List of macrofungi in Poland by Wojewoda and Lawrynowicz will be ready for publication in 2004. It is based on: existing red lists both for the whole country and on local ones as mentioned above.

Further more

- Checklists of Polish Fungi – in the course of elaboration in the frame of Biodiversity of Poland (see above)
- Atlas of the Geographical Distribution of Fungi in Poland. Fasc. 1 (2000), Fasc. 2 (2002) (Wojewoda ed.)
- publications of field monitoring results (Skirgiello 1998; Lisiewska, Polczynska 1998; Luszczynski 1998; Wojewoda et al. 1999; Lawrynowicz, Stasinska 2000; Lawrynowicz 2001; Lawrynowicz et al. 2001)
- survey of mycosociological papers in Poland (Lawrynowicz 2003)
- other publications mostly in Acta Mycologica.

Mapping

Mapping of fungi in Poland has not yet provided rich literature. Distribution maps of single species in Poland or maps of localities of species prepared in the framework of studies on selected systematic groups, e.g. of a one or several orders (Majewski 1978; Wojewoda 1979; Lawrynowicz 1990, 1991), or local maps of all fungi recorded from a given, selected area, e.g. in the Bialowieza National Park (Bujakiewicz et al. 1997) have only been published. Within the project of mapping the geographical distribution of selected macrofungi of Europe, distribution maps of 100 species have been made in Poland (Skirgiello 1965, 1967, 1970, 1972, 1977, 1986). Absent has been a regularly published atlas of geographical distribution of fungi in Poland, although plans for such a project have been made for a long time.

In 2000 the W. Szafer Institute of Botany PAS in Kraków launched publication of the "Atlas of the Geographical Distribution of Fungi in Poland". It is assumed that the Atlas will cover both macrofungi and microfungi. Localities of given species are drawn on maps based on a 10 km grid. Contour lines indicating 200, 300, 500, 700 and 1000 m a.s.l. are also shown. Two fascicles published so far contain the following species:

Fascile 1 (2000):

Asterodon ferruginosus Pat. (W. Wojewoda)
Bondarzewia mesenterica (Schaeff.) Kreisel (W.W.)
Cyphellostereum laeve (Fr.:Fr.) Reid (A. Miskiewicz)
Eocronartium muscicola (Pers.: Fr.) Fitzp. (W.W.)
Ganoderma resinaceum Boud. (M. Piatek)
Inonotus hispidus (Bull.: Fr.) Karst. (M.P.)
Peniophora lilacea Bourd. & Galz. (W.W.)

Porostereum spadiceum (Pers.: Fr.) Hjortst. & Ryv. (W.W.)
Stypella grilletii (Boud.) P. Roberts (W.W.)
Xylobolus frustulatus (Pers.: Fr.) Boid (W.W.)

Fascile 2 (2002):

Amylocorticium cebennense (Bourdot) Pouzar (W.W.)
Amylocorticium subincarnatum (Peck) Pouzar (W.W.)
Amylocorticium subsulphureum (P. Karst.) Pouzar (W.W.)
Antrodia malicola (Berk. & m.A. Curtis) Donk (M.P.)
Bovista paludosa Lév. (W.W.)
Clavariadelphus truncatus (Quél.) Donk. (W.W.)
Clavulicium macounii (Burt) J. Erikss. & Boidin ex Parmasto (W.W.)
Conohypha albocrema (Höhn. & Litsch.) Jülich (W.W.)
Daedaleopsis tricolor (Bull.: Fr.) Bondartsev & Singer (W.W.)
Diplomitoporus lindbladii (Berk.) Gilb. & Ryvarde (M.P.)
Eichleriella deglubens (Berk. & Broome) D. A. Reid (A. Ronikier)
Fomitiporia hippophaeicola (H. jahn) Fiasson & Niemelä (W.W.)
Fomitopsis officinalis (Vill.: Fr.) Bondartsev & Singer (A. Chlebicki & J. Luszczynski)
Hymenochaete cruenta (Pers.: Fr.) Donk (W. Wojewoda, H. Komorowska & A. Piatek)
Irpicodon pendulus (Alb. & Schwein.: Fr.) Pouzar (W.W.)
Punctularia strigosozonata (Schwein) P.H.B. Talbot (W.W.)
Pycnoporellus alboluteus (Ellis & Everh.) Kotl. & Pouzar (M.P.)
Pycnoporellus fulgens (Fr.) Donk (M.P.)
Rhodotus palmatus (Bull.: Fr.) R. Maire (A. Bujakiewicz)
Scotomyces subviolaceus (Peck) Jülich (W.W.)
Sistotrema confluens Pers.: Fr. (M.P.)
Suillus plorans (Rolland) Kuntze (A. Ronikier & M. Ronikier)
Szygospora pallida (Hauerslev) Ginns (W.W.)
Thanatephorus sterigmaticus (Bourdot) P. H. B. Talbot (W.W.)
Trichaptum biforme (Fr.) Ryvarde (W. Wojewoda, Z. Heinrich & H. Komorowska)
Tubulicrinis borealis J. Erikss. (W.W.)

Fascile 3 is in course of elaboration.

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Maria Lawrynowicz, August 2003

Progress-report on conservation of fungi in The Netherlands 2002

By Marijke M. Nauta
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In the Netherlands several successful long-term projects, which all aim (sometimes indirectly) at conservation of fungi, are going on:

The Ecological Monitoring Network, which aims at monitoring selected macrofungi in plots in woodlands and parks, started in 1998 with 82 plots and had in 2002 566 plots, distributed over the wooded areas in The Netherlands. It is financed by the Ministry of Agriculture, Nature management and Fisheries, and carried out by the Dutch Mycological Society in cooperation with the Central Bureau of Statistics. 340 volunteers count the 110 selected macrofungi several times a year in their plots. Interesting developments are

increase of hydneaceous fungi

- a new finding place of *Phylloporus pelletieri*, a very rare fungus in The Netherlands, which increases the number of sites to 7
- increase of *Cantharellus cibarius*
- relative abundance of *Hygrophorus hypothejus* in 2002.

The first three developments fit in the general idea that ectomycorrhizal fungi on nutrient poor soil, especially in roadside verges, show a slight recovery since the 1980's.

A negative development is that the last site of *Hericium clathroides* in The Netherlands has disappeared in 2002.

The Network will be continued, although the financial base is uncertain for the coming years.

The national mapping project of macrofungi of the Dutch Mycological Society, which started in 1980, is still being continued. In 2002 the number of participants has increased to 512. They send in their records faithfully each year, and each year new species for The Netherlands and new species for science are found. In 2002 90 new species were added to the list, which were not recorded before. All data are recorded, per grid-unit per date. In total more than a million records are present in the database of the Dutch Mycological Society. The project is carried out completely by volunteers, including the coordination. Although there is a strong need for a professional, paid, coordinator, no financial support is available for this.

The Committee for Mushrooms and Nature conservation of the Dutch Mycological Society has started a project in 1999 to indicate mycologically valuable sites in and outside protected nature reserves, and to give specific guidelines for management to rangers and wardens of nature-reserves, owners of estates, and municipality and county councils who deal with management of these sites. The inventory of the mycologically valuable sites is strongly based on the data gathered by the national mapping project of the Dutch Mycological Society and is nearing completion. A series of leaflets with guidelines for a more mushroom-friendly management has been completed and is now used by some nature managers. The aim in the future is to call more attention to the guidelines and survey the mycoflora in the 200 most valuable sites.

In the dunes near Amsterdam, the Amsterdam Waterworks Dunes, a successful monitoring project of representative grassland-fungi in nutrient-poor grasslands is carried out. The project started in 2001, as a follow-up of a previous project which was not based on permanent plots. In 2002 23 volunteers, under professional guidance, surveyed the mycoflora of the grasslands in 45 plots of c. 200 m² in 17 different grassland-areas in the Amsterdam Waterworks dunes. Most of the grasslands are mown, some are not managed at all. In total 17 species of waxcaps were found in 2002, with an average of 140 fruit-bodies per plot. The most common waxcap was *Hygrocybe miniata* which was found in 44 % of the plots, and of the clubfungi *Clavulinopsis luteo-alba* which was found in 31 % of the plots. More species of waxcaps, clubfungi and earthtongues are found in plots which were managed > 6 years than in plots where more recently management started. In plots which are not managed only one species of waxcaps was found, and no clubfungi nor earthtongues. The project will continue and will be evaluated after 5 years.

Marijke M. Nauta, August 2003

The Swiss Mapping Project and news about conservation efforts in Switzerland

By Beatrice Senn-Irlet
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Mapping project

Classical mapping projects are based on the accidental data of volunteers. Therefore the distribution maps based on such data have spatial, temporal and taxonomical inconsistencies. In Switzerland a four-pylon-project (1999-2004) has been launched to overcome these weakness and to test other methods. The first approach (=first pylon) includes sampling on transects at stratified randomly chosen forest plots of the Swiss National Forest inventory. Trained biologists notice the presence of each macrofungi species during four excursions between July and November on these plots of 800 m². The second approach (second pylon) is directed towards volunteers with observations at randomly selected grid points in all habitat types (forests and non-forested areas) on a plot size of 0.12 ha. The third approach (= third pylon) includes data from the classical mapping method where every record from fungi of any systematic group is stored including older published data. The different data are all stored in the same Oracle-based database. The three kind of data can be separately analysed or combined to allow spatial and temporal simulation modelling (= fourth pylon).

A first comparison of the different approaches shows a similar abundance patterns for most agarics and boletes and contradicts objections towards classical mapping approaches. Distribution maps of 5293 species (4022 basidiomycetes, 1160 ascomycetes, 97 myxomycetes, 11 zygomycetes, 3 others) which for the time being are solely based on the data of the volunteers can be studied under <http://www.swissfungi.ch>

The transect method at its actual state of 145 sites yielded 35113 records of macrofungi covering about 1400 species of macrofungi. Species richness does not significantly vary among the various geographical regions of Switzerland with very different forest types ranging from pure deciduous forests, mixed forests to coniferous forests from 200 m to 2300 m altitude. The data of this approach can be linked with data from the forestry inventory allowing new insights into the influence of forestry management practises on the species distribution.

The project aims a Red List following the IUCN criteria and is scheduled for 2005.

Protected species

Since 2000 12 species of macrofungi benefits from a national protection. They include *Sarcodon jaeoides*, *Tricholoma caligatum*, *Tricholoma colossus*, *Suillus plorans*, *Laricifomes officinalis*, *Boletus regius*, *Pluteus aurantiorugosus*, *Squamanita schreieri*, *Verpa conica*, *Lyophyllum favre*, *Hygrocybe calyptriformis*, *Clavaria zollingeri*.

With the help of a showy poster these fungi are announced at relevant sites.

Protected area for macrofungi

In Switzerland the establishment and regulation of general nature reserves and reserves for specific organisms are an affair of local authorities. No national overview exists hitherto. Some cantons have established special reserves for fungi such as in the Southeast (Graubünden/Grisons) where 17 areas exist, some since more than 20 years. The main reasons to do so was the prevention of collateral damage by mushroom hunters such as damage on young trees and seedlings, wild game disturbance, intense traffic.

Red List of Lichens and distribution maps online

A Red list of epiphytic and terricolous lichens has been recently published following strictly the IUCN criteria (schiedegger et al 2002).

Distribution maps of epiphytic Swiss lichens (text in german) are to be found online (Stofer et al. 2003):

<http://www.wsl.ch/land/genetics/swisslichens-de.ehtml>

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<http://www.wsl.ch/land/genetics/swisslichens-de.ehtml>

Beatrice Senn-Irlet, August 2003

Activities in mycology in Italy

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In the last 30 years mycological research spread out more or less through the whole Italian territory: important studies on mycorrhizal symbiosis and micromycetes were performed; concerning macrofungi besides the known activities in systematic and taxonomy with an eminent and glorious tradition and still running, here only main other surveys are summarized:

mycofloristic investigations in several Italian districts done by amateurs and professionals; research on the ecology of truffles and their cultivation - particularly some Universities such as Perugia, Urbino, Bologna, Torino; mycocoenological studies in various types of vegetation communities in Abruzzo, Liguria, Piemonte, Sicily, Tuscany – but often after the first results they are interrupted because of the known reality: too long time for good results and you must produce a lot in short time (!); monitoring of macrofungal communities in evergreen forests in Tuscany - proposal of selected target species as bioindicators of fungal communities and environmental health status; an attempt to participate at the Tuscan MONITO (Monitoraggio Intensivo delle Foreste Toscane) project; experimental observation on the response of fungal communities to tree thinning and litter removal with particular regard to the conservation and increase in production of edible mushrooms; cultivation of rare species as an attempt of ex-situ conservation in order to protect them in the nature - the example of *Pleurotus nebrodensis*, an endemic species threatened in Sicily (Zervakis et Venturella, 2002). Following this brief preamble it seems strange that the proposal of a mapping program made by Kreisel in Prag in 1960 did not attract the interest of Mediterranean mycologists; so for instance in Lange's opera published some years later *Amanita caesarea* is lacking just in its optimal habitat! Years ago the ECCF made a new appeal to the Mediterranean regions in order to stimulate their participation in this action. After various meetings in the '90 of the two leading Italian Organizations – AMB (Associazione Micologica Bresadola) and UMI (Unione Micologica Italiana) – and SBI (Società Botanica Italiana), in view of the vast (Italy covers more than 321.700 km²) and very variable Italian landscape, census and mapping programme of macrofungi was performed by regional coordinators of single districts following the indications established on a national level.

I'll cite here some recent papers: Results of 3 year of observations made by amateurs and professionals for the whole region were published in Tuscany in 1999: in about 23.000 km² - from the Thyrrhenian coast to the Montane region of the Apennines (most collections were in forests of the colline areas from the sea up to 800-900m) more than 1000 species were listed (Tofacchi et Mannini, 1999). In Lombardia in 2000 the results, in paper format supported by CD, of the census of macromycetes made by amateurs (AMB) of the province of Varese were available: in more or less 1.200 km² - comprising a montane zone up to 1600m, a colline zone and a so-called high plane - 1353 species were listed (Associazione Micologica Bresadola Gruppo di Varese, 2000). Sicily in 2000 published the data of a intensive exploration (started in 1995) in the regional park of the Madonie territory: in more or less 400 km² - characterized by high mountains up to nearly 2000 m – more than 600 species were listed (Venturella et al., 2000). Another example is the Ligurian - work (Zotti M. and Orsino F., 2001) that reports an up-date list of 1521 macrofungi.

The need of knowledge on diversity and distribution brought in 2000 to an agreement between the Ministry of Environment and Tuscia University in Viterbo in order to compile the "Checklist of Italian fungi. Part I, Basidiomycota, Hymenomycetes" (excepting Urediniomycetes and Ustilaginomycetes) (Onofri et al., in press). From compilation, between 1905 and 1938, on F. Cavara's initiative, of the Flora Italica Crittogama, none Italian list of mycological entities (species, subspecies, variety and forms) was realized and this can be seen as the first and most important step to the knowledge of Italian mycodiversity. The groups taking into consideration consist principally of fungal species with evident sporocarps, for which most good information are available in Italy: this because not only of the facility in finding and taxonomic identification, but also of the commercial and economic importance. Information concern not only the distribution in 20 administrative region but also information on their ecology, their condition of endemism, esotism and rarity in Italy and on national, regional and local levels are given. Another related database contains bibliographic records.

Entities of Basidiomycetes memorized in a national databank amount to 4.296 (3.973 species, 6 subspecies, 263 varieties, 54 forms), corresponding to 443 genera. Considering the different distribution of mycologists on national territory, the collected data can be seen as the picture of the knowledge of mycodiversity in Italy. Among the four Regions with a number of records lower than 500, Molise and Valle d'Aosta are the less investigated Regions while Trentino, Emilia Romagna, Tuscany and Lombardia are among the most studied Regions (number of records higher than 2.000) (Onofri et al., in press).

Other news concern the following: the Mycotheca Universitatis Taurinensis (MUT) at the Department of Plant Biology of the University of Turin started an ex situ conservation of basidiomycetes mycelia!

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Claudia Perini, December 2003

Fungi and their protection in Armenia

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The Republic of Armenia is a generally mountainous country with small territory (29,800 km²), fragmented relief and located at the altitudes ranging from 380 to 4095 m above sea level. Due to the diversity of altitudes, climates and landscapes found in the country, Armenia supports a surprisingly high diversity of plants and animals, including many endemic, relict and rare species. Armenia is mycologically diverse and involves the opulence and originality of fungal biota.

In the Republic it has been revealed 4166 species of macro- and micromycetes, referring to the divisions Myxomycota and Eumycota (Nanagulyan et al., 1999). Divisions Myxomycota includes 44 species, Eumycota are spread in 5 subdivisions: Mastigomycotina (125 species), Zygomycotina (140), Ascomycotina (960), Basidiomycotina (1144), Deuteromycotina (1753). On the bases of obtained data a multivolume edition "Fungi of Armenia" is being published, out of which 7 volumes have been already published.

Today Armenia is regarded as one of the countries with the most damaged environment. Recently due to the growth of the anthropogenic impact on the nature there have been changes of natural complexes, reduction of natural habitats and decreasing of quantity of populations of different organisms. A number of species of fungi appear to be declining as a result of direct and indirect human impacts. The role of mushrooms in nature and human life is well known. In this regard, the conservation and protection of biodiversity of different groups of organisms, especially of rare and insufficiently studied mushrooms is rather an actual and important task.

The protection of fungi has a number of peculiarities in comparison with the conservation of higher plants. Conservation of fungi has only recently the attention from specialists. Presently all the countries face the problem of mushrooms decline. In some countries there is rich information, because the specialists have started research years ago. In other countries, such as Armenia, there are only few data, because the work in the field of conservation of fungi has started a few years ago.

At present in Europe there are more than 20 Red Lists, which are considered as useful tools in attempts to involve fungi in nature conservation. Unfortunately, the first edition of the Red Data Book of Armenia, published more than 10 years ago does not include any fungal species (Red Book of Armenia, 1990). In Armenia there is no specific legislation for the conservation of rare and threatened species of mushrooms. Nowadays, for the purpose of developing and publishing the next edition of the Red Data Book, Armenian botanists and mycologists create the Lists of rare species of plant and mushrooms.

The composition of Armenian macromycetes' biota is diverse and rich in species. Today more than 1200 species of fungi were observed in the Republic. It should be pointed that there were no significant activities concerning fungal protection at the national level in Armenia. Some species of macromycetes are considered to be on the verge of extinction and should be listed in the Armenian Red Date Book. This is the first step for achieving effective conservation of the macrofungal diversity and their natural habitats in the country.

In the process of building up a database on fungi, I made an inventory of fungi and assessed their conservation status. Now I have compiled a manuscript of preliminary list of endangered fungal species with hope that they will be included in the next edition of the Red Data Book (Datasheets of threatened mushrooms, candidates for Red Book of Armenia).

I made the assessment of the fungi. The aim of that document is to form an overall picture of the threat status of the mycobiota in Armenia by comparing and evaluating threatened species and their categories in different floristic regions of the Republic. The proposed list was prepared on the basis of longstanding mycological investigations and European Red Lists, Red Books of Russia and Red Data Books of various regions or countries.

It should be pointed out that the number of mushroom species in Red List of Armenia reflects the present state in the country. But there is no agreement in the literature related to the categories of mushrooms threatened with extinction. From special literature we found some information about those species. For example, there is also evidence of relict fungi species occurring in deserts and steppes including *Podaxis pistillaris*, *Battarea phalloides*. Such mushrooms as *Battarea phalloides*

and *Asterophora lycoperdoides* belong to the extinct categories. Evidently, in order to deal in detail with it, more data is needed, and the research in this direction has to be done. Due to this at the present stage there isn't possibility to draft better detailed categories on the degrees, to which they are threatened. All this will require the continuous control of the number and state of populations of the rare and threatened species.

At present the IUCN criteria for global Red Lists of threatened organisms are discussed. In current work following categories, accepted in some national, regional or international Red Data Books and special literature, have been used. These are IUCN Red Data Book Categories: Ex – extinct or probably extinct, E - endangered, V - vulnerable, R - rare, I – indeterminate (Red Data Book of USSR, 1984; Red Data Book of Armenia, 1990; Conservation of fungi in Europe, 1997; Red Data Book of East Fennoscandia, 1998; Red Book of Nature of Leningrad Region, 2000 and others).

The preliminary selected candidates comprise 31 species (2 species of *Ascomycetes*, 6 - *Aphyllorphorales*, 9 - *Agaricales*, 3 - *Boletales*, 4 - *Tricholomatales*, 6 - *Gasteromycetes*). A list of the potential candidates of the Red List of the macromycetes is marked below.

Several species, which are threatened in Armenia, found in specially protected areas, such as Natural Parks or reserves. From 31 listed macromycetes 16 (51%) species are grown in nature protected areas (Dilijan National Park, Khosrov state reserve), 10 (32%) threatened species are observed both in reservation and in the unprotected (wild nature) areas.

The present Preliminary Red List of the macroscopic fungi of Armenia is the first attempt for full characterization of all fungi requiring conservation in Armenia. I included comprehensive information of selected fungi, such as their description, distribution, habitats and biology, population changes, causes of decline, conservation proposed measures and preference. I intend to continue this investigation, adding some new data, mapping the species and presenting the final version to the Ministry of Nature Protection of Armenia, which coordinates the works regarding Red Book of Armenia.

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Red Book of Nature of Leningrad Region. Plants and Mushrooms. – St.-Peterburg: Mir & Semja. – 2000. - P. 546.

A preliminary RED LIST of the macroscopic fungi of Armenia

Ascomycotina – Discomycetes

Pezizales - Sarcosomataceae

Sarcosoma globosum (Schmiedel) Casp.

Tuberales - Tuberaceae

Tuber aestivum Vitt.

Basidiomycotina – Homobasidiomycetes

Aphyllorphomycetidae- Aphyllorphorales s.l.

Boletopsidaceae

Boletopsis leucomelas (Pers.)Fay.

Clavariaceae

Clavariadelphus pistillaris (Fr.)Donk

Hericiaceae

Hericum coralloides (Fr.) S.F.Gray

Hericum erinaceum (Bull.:Fr.)Pers.

Poriaceae

Hapalopilus croceus (Pers.:Fr.)Donk

Haploporus odoratus (Sommerf.:Fr.)Bondartsev & Singer

Agaricomycetidae - Agaricales s.l.

Agaricaceae

Agaricus tabularis Pk

Agaricus xanthodermus Gen.

Cystoderma amianthina (Scop.:Fr.) Fay.

Leucoagaricus macrorhizus Locq.: Horak

Macrolepiota puellaris (Fr.)Mos.

Coprinaceae

Montagnea arenaria (DC:Fr.)Zeller

Amanitales - Amanitaceae

Amanita gemmata (Fr.)Bert.

Amanita muscaria (L.:Fr.)Hook.

Amanita phalloides (Vail.:Fr.)Secr.

Boletales - Boletaceae
Boletus edulis Bull:Fr.
Boletus satanas Lenz
Suillus grevillei (Klotzsch)Sing.

Strobilomycetaceae
Strobilomyces floccopus (Vahl:Fr.)Karst.

Tricholomatales
Pleurotaceae
Phyllotopsis subnidulans (Overh.)Sing.
Tricholomataceae
Asterophora lycoperdoides (Bull.) Ditm.: S.F.Gray
Collybia cookei (Bres.)J.D.Arnold
Rhodotus palmatus (Bull.:Fr.)R.Mre

Gasteromycetes - Lycoperdales - Geastraceae
Myriostoma coliforme (Dicks.:Pers.)Cda

Phallales - Phallaceae
Dictiophora duplicata (Bosc)E.Fish.
Mutinus caninus (Pers.)Fr.

Podaxales - Podaxaceae
Podaxis pistillaris (L.:Pers.)Morse

Sclerodermatales - Astreaceae
Astraeus hygrometricus (Pers.)Morg.

Tulostomatales - Battareaceae
Battarea phalloides Dicks.: Pers

Remarks on the distribution of five species of macrofungi from Armenia

1. *Hapalopilus croceus* (Pers.:Fr.)Donk

Status: Most rare species in Armenia.

Distribution in Armenia: It is known one site from Ijevan floristic region (northeastward), this species had been collected more than 30 years ago.

Habitat: On alive and/or mostly on dead trunks from *Castanea* and *Quercus*, on 1100-1700m altitude.

Care: Should be necessary to explore up-to-date condition, to protect of old forests and to restrict the forest exploitation on sites of this species. The species has been included in "The Preliminary Red List of Macromycetes of Armenia" for including in Red Data Book of Armenia.

References: Nanagulyan, S.G. 1997. Macromycetes of Armenia (specific, spatial and functional structure). Doct. Sc. Thesis. Yerevan State University. - 412.

2. *Haploporus odoratus* (Sommerf.: Fr.) Bondartsev et Singer

Status: Rare species in Armenia.

Distribution in Armenia: It is known one record from Ijevan floristic region.

Habitat: On dead wood of *Acer* in deciduous forest on 1600m altitude.

Care: Necessary to protect of forest's ecosystems for conservation of nature populations. The species has been included in "The Preliminary Red List of Macromycetes of Armenia" for including in Red Data Book of Armenia.

References: Nanagulyan, S.G. 1997. Macromycetes of Armenia (specific, spatial and functional structure). Doct. Sc. Thesis. Yerevan State University. - 412.

3. *Hericium erinaceum* (Bull.:Fr.)Pers.

Status: Rare species in Armenia.

Distribution in Armenia: It is known three sites in northeastward (Ijevan floristic region) and in south (Zangezur) areas of Armenia.

Habitat: On alive trunks of *Quercus* and *Fagus* on 1000-1400m altitude.

Care: Protection of deciduous forests with *Quercus* and *Fagus*, it is necessary to conserve in culture collections. The species has been included in "The Preliminary Red List of Macromycetes of Armenia" for including in Red Data Book of Armenia.

References: Nanagulyan, S.G. 1997. Macromycetes of Armenia (specific, spatial and functional structure). Doct. Sc. Thesis. Yerevan State University. - 412.

4. *Myriostoma coliforme* (Dicks.: Pers.) Cda

Status: Most rare species in Armenia.

Distribution in Armenia: It is known single location from Sevan floristic region.

Habitat: On sandy soils on 1800-2000m altitude.

Care: It is necessary to explore up-to-date condition of population and to carry out protection of this species. The species has been included in "The Preliminary Red List of Macromycetes of Armenia" for including in Red Data Book of Armenia.

References: Nanagulyan, S.G., Osipyan, L.L. 2000. Conspectus of mushrooms of Armenia. Gasteromycetes. Yerevan: Acad. Sci. Press. - 52p.

5. *Sarcosoma globosum* (Schmiedel) Casp.

Status: Rare species for Armenia.

Distribution in Armenia: It is known two locations from mountainous areas of Ijevan's and Sevan's floristic regions.

Habitat: On sandy soils, under *Sorbus*. Deciduous forests, arenaceous semi-desert on 1850-2000m altitude.

Care: It is necessary to explore up to date condition of population and protection of sites of this species. The species has been included in "The Preliminary Red List of Macromycetes of Armenia" for including in Red Data Book of Armenia.

References: Nanagulyan, S.G. 1997. Macromycetes of Armenia (specific, spatial and functional structure). Doct. Sc. Thesis. Yerevan State University. – 412

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Mapping of Macromycetes – Pilot Series – in Romania

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Abstract: The paper is part of the ECCF project "Mapping and monitoring of macromycetes in Europe – pilot series" started in 2002. Out of the 50 target species, in Romania were found 26 species. For the species *Batarraea phalloides*, *Hapalopilus croceus*, *Hygrophorus purpurascens*, *Laricifomes officinalis* and *Phylloporus pelletieri*, only data before 1970 were found. The species *Faerberia carbonaria*, *Helvella atra*, *Hygrocybe calyptriformis*, *Hygrocybe laeta*, *Leucopaxillus tricolor*, *Pisolithus arhizus*, *Polyporus rhizophilus* and *Suillus flavidus* are considered as very rare in Romania.

In Proceedings of the 4th meeting of the European Council for the Conservation of Fungi, Vipiteno (Sterzing, Italy), Otto and Ohenoja, presented proposals for a preliminary conception for a new project called 'Mapping of threatened Fungi in Europe' (Otto & Ohenoja 1998).

On 2002, the work for a mapping project was finished and Otto started the project. For mapping were proposed 50 species rare and extremely rare in Europe. They are: *Geoglossum atropurpureum* (Batsch.: Fr.), *Helvella atra* Holmskj. : Fr., *Sarcosoma globosum* (Schmidel: Fr.) Casp., *Sarcosphaera coronaria* (Jacq.) Boud. *Poronia punctata* (L.: Fr.) Fr. (Ascomycota), *Amanita caesarea* (Scop.: Fr.) Pers., *Amanita friabilis* (P. Karst.) Bas., *Amylocystis lapponica* (Romell) Bondartsev & Singer, *Antrodia albobrunnea* (Romell) Ryvarden, *Armillaria ectypa* (Fr.) Emel., *Bankera fuligineoalba* (Schmidt: Fr.) Pouzar, *Batarraea phalloides* (Dicks.: Pers.) Pers., *Boletopsis grisea* (Peck) Bondartsev & Singer, *Boletus dupainii* Boud., *Bovista paludosa* Lév., *Cantharellus melanoxeros* Desm. : Fr., *Cortinarius inochlorus* Maire, *Entoloma bloxamii* (Berk. & Broome) Sacc., *Faerberia carbonaria* (Alb. & Schwein.) Pouzar, *Gomphus clavatus* (Pers. : Fr.) Gray, *Hapalopilus croceus* (Pers. : Fr.) Donk, *Haploporus odoratus* (Sommerf. : Fr.) Bondartsev & Singer, *Hericium erinaceum* (Bull. : Fr.) Pers., *Hohenbuehlia culmicola* M. Bon, *Hydnellum suaveolens* (Scop. : Fr.) Karst, *Hygrocybe calyptriformis* (Berk. & Broome) Fayod, *Hygrocybe laeta* (Pers.: Fr.) P. Kumm., *Hygrophorus marzuolus* (Fr.: Fr.) Bres., *Hygrophorus purpurascens* (Alb. & Schwein.: Fr.) Fr., *Hymenochaete cruenta* (Pers. : Fr.) Donk., *Laccaria maritima* (Teodor.) Sing., *Laricifomes officinalis* (Vill.: Fr.) Kotl. & Pouzar, *Leucopaxillus tricolor* (Peck) Kühner, *Lyophyllum favrei* R. Haller Aar. & R. Haller Suhr, *Montagnea radiosa* (Pallas) Sebek, *Myriostoma coliforme* (With.: Pers.) Corda, *Paneolus fimpitris* (Bull. : Fr.) Quéf., *Phylloporus pelletieri* (Lév.) Quéf., *Pisolithus arhizus* (Scop. : Pers.) S. Rauschert, *Podoscypha multizonata* (Berk. & Br.) Pat., *Polyporus rhizophilus* Pat., *Pycnoporellus alboluteus* (Ellis & Everhart) Kotl & Pouzar, *Sarcodon fuligineoviolaceus* (Kalchbr. : Fr.) Pat., *Skeletocutis odora* (Sacc.) Ginns, *Strobilomyces strobilaceus* (Scop. : Fr.) Berk., *Suillus flavidus* (Fr. : Fr.) Presl, *Suillus sibiricus* Sing. ssp. *helveticus* Sing., *Torrencia pulchella* Bres., *Tricholoma colossus* (Fr.) Quéf., *Tulostoma niveum* Kers (Basidiomycota).

The 33 species marked by bold letters were proposed for candidates for listing in Appendix I of the Bern Convention (Dahlberg & Croneberg 2003).

Material and methods

New material determined by the authors, as well as all available data from literature and the herbarium collections referring to the Romanian territory were considered. For each species, data on distribution and ecology (substratum, soil) with the information source are presented. Many of the habitat data are indirect, so they must be looked as informative. Fungal species are ordered alphabetically and the counties likewise. The herbarium samples and exsiccates are mentioned between right brackets [BUCM, I]. Mapping of species was made according to the UTM (Universal Transverse Mercator) system with the grid of 10x 10 km. The UTM code is given for each locality.

Mapping

Out of the 50 European target species, in Romania were found 26 fungal species. Their distribution in Romania is presented in 12 maps.

Amanita caesarea (Scop.: Fr.) Pers. – thermophylle species, mycorrhizal with *Quercus cerris*, *Q. petraea*, *Q. robur*, *Picea excelsa* (?), in deciduous forest (*Quercetum petraeae-cerris*, *Carpino orientalis-Quercetum petraeae*, *Cytiso nigricantis-Querceto petraeae*), on acid brown and podsolic soils, as a rule under 750 m altitude, July-September.

Romanian distribution (**Fig. 5**). Alba county: Alba Iulia - FS 90/GS 00 (Cserni 1888); Valea Sebesului - FS 94 (Borza 1959); Blaj - GS 21 (Borza, Lupsa 1964). Arad county: Savârsin - ER 99; Lipova - ES 50; Grosii Noi - ES 80 (Ghisa, Silaghi & Ratiu 1958); Paiuseni - ES 82, Chisindia; Buteni - ES 83; Gurahont - FS 02 (Toma 1967); Highis - FS 61; Zarandului Mts - ES 91 (Bechet et al. 1978). Bihor county: Lunca - FS 15 (Ghisa, Silaghi & Ratiu 1958). Brasov county: Brasov - LL 85/95 (Stefureac et al. 1972). Caras Severin county: Almajului Mts. - EQ 96 (Pop et al. 1969); Var - FR 03 (Ghisa, Silaghi & Ratiu 1958); Resita - ER 61/71 (Silaghi 1961). Hunedoara county: Brad - FS 30/31; Boholt - FR 48/49; Baiesti - FR 54; Hondol - FR 59 (Ghisa, Silaghi & Ratiu 1958); Tartarau in Parâng Mts - GR 02 (Borza 1959). Maramures county: FT 85 – Fericea; Somcuta Mare, Berchez - FT 86; Coas - FT 96; Culcea-Sacalasseni - FT 97; Remeti - FU 91; Copalnic - GT 06 (Ghisa, Silaghi & Ratiu 1958). Mehedinti county: Eselnita – EQ 93/FQ05 (Pop et al. 1969, Sandu-Ville et al. 1973); Dubova - FQ 04 (Sandu-Ville et al. 1973). Prahova county: Chitorani - MK 28/38 (Savulescu 1938). Salaj county: Jibou - FT 63/73; Naprădea, Padurea Cozlii, Sesul lui Ignat, Tranis - FT 74 (Ghisa, Gergely 1962, Ghisa, Silaghi & Ratiu 1958, Silaghi 1966); Chelnita-Ulmeni - FT 65 (Ghisa, Silaghi & Ratiu 1958, Silaghi 1966); Vadurele - FT 74 (Silaghi 1966); Cheud - FT 75 (Ghisa, Silaghi & Ratiu 1958). Banat (Schulzer 1853).

Battarraea phalloides (Dicks.: Pers.) Pers. - saprotrophic, terrestrial, xerophilic, amongst xerophilic vegetation, on sandy soils, altitude under 250 m alt., June-August (October).

Romanian distribution (**Fig. 12**). Prahova county: Chitorani – MK 28/38 (Alexandri 1932, 1934). Tulcea county: between Babadag and Enisala – PK 37/47 (Alexandri 1932, Hollós 1904); Sulina – QL 00710 (Brândza, Solacolu 1932, Alexandri 1934).

Bovista paludosa Lév. – saprotrophic, terrestrial, hygrophylous, fens places amongst mosses, bogs vegetation (*Caricetum diandrae*, *Scheuchzerio-Caricetea fuscae*), peat. June.

Romanian distribution (**Fig. 11**). Harghita county: Jigodin – MM 13 (Silaghi, Stefureac 1969). Suceava county: Sarul Dornei (Nature reserve) – LN 72/73 [BUCM,130050].

Faerberia carbonaria (Alb. & Schwein.) Pouzar – saprotrophic, carbophilic, and anthropic fireplaces, July –September.

Romanian distribution (**Fig. 3**). Cluj county: Fagetul Clujului in Plecica valley – FS 97/98 (Silaghi 1966). Suceava county: Poiana Stampei in „Tinovul Mare” (Nature reserve) – LN 54 (Toma 1875).

Gomphus clavatus (Pers.: Fr.) Gray – mycorrhizal with coniferous trees (*Picea*, *Abies*), in coniferous forests (*Soldanello majori-Piceetum*, *Vaccinio-Piceetum*), on acid brown soils, June-October.

Romanian distribution (**Fig. 2**). Arges county: Leaota Mts.- LL 62 (Toma, Diaconescu 1971). Bistrita-Nasaud county: Craciunel Mt. in Rodnei Mts. (National Park) – LN 36 (Silaghi 1966). Brasov county: Treiner valley – LL 85/95 (László 1972); Sticlariei valley – LL 85/95 (Pop, Soltész 1997). Neamt county: Ciocanu, Fundoaia in Ceahlau Mts. (Nature reserve) – MN 20 (Popovici 1903, Zanoschi 1970); Gosman – MM 78 (Tanase, Chifu 1999). Suceava county: Ciocanesti – LN 65/66/75/76 (Toma, Pascal 1971); Dornisoara – LN 53 [BUCM, 100690, 122373, 134873]; Dorna valley – LN 53 [BUCM, 73061, 76099, 100568, 134976]; Cosna – LN 64 (Toma 1973, 1975); Poiana Stampei in „Tinovul Mare” (Nature reserve) – LN 53 (Toma 1975, Tanase 2000), [Herb. I, 153789]; Rarau Mts. – LN 95 (Chifu, Dascalescu & Toma 1965).

Hapalopilus croceus (Pers.: Fr.) Donk – saprotrophic, lignicolous, deciduous and mixed forests, on acid brown soils, August.

Romanian distribution (**Fig.3**). Harghita county: Borsec – LM 80/90, Tusnad -MM 11 (Csuros Kaptalan 1978).

Helvella atra Holmskj.: Fr. – saprotrophic, terrestrial, deciduous forests (*Symphyto cordati – Fagetum*), on acid brown and podzolic soils, summer.

Romanian distribution (**Fig. 1**). Neamt county: Neamt Depression – MN 42/52 (Chifu 1971, 1973).

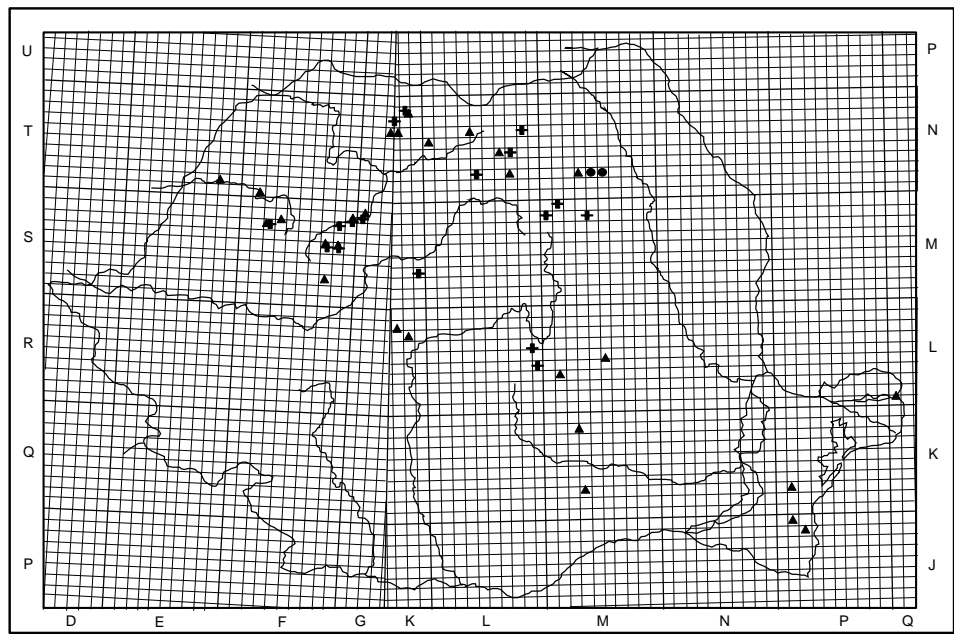


Fig. 1 ● *Helvella atra* + *Sarcosphaera coronaria* ▲ *Poronia punctata*

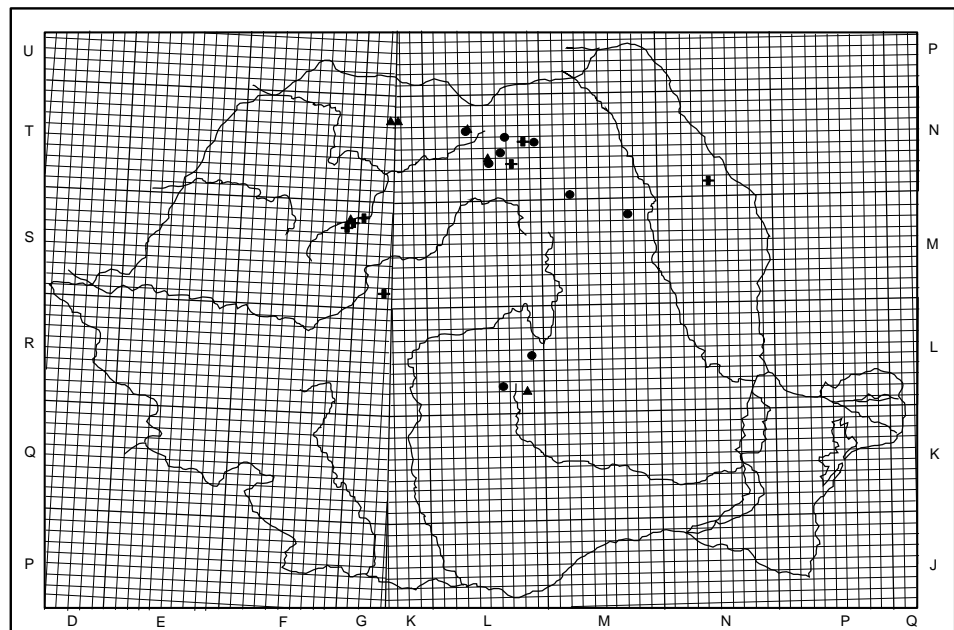


Fig. 2 ● *Gomphus clavatus* + *Hericium erinaceum* ▲ *Hymenochaete cruenta*

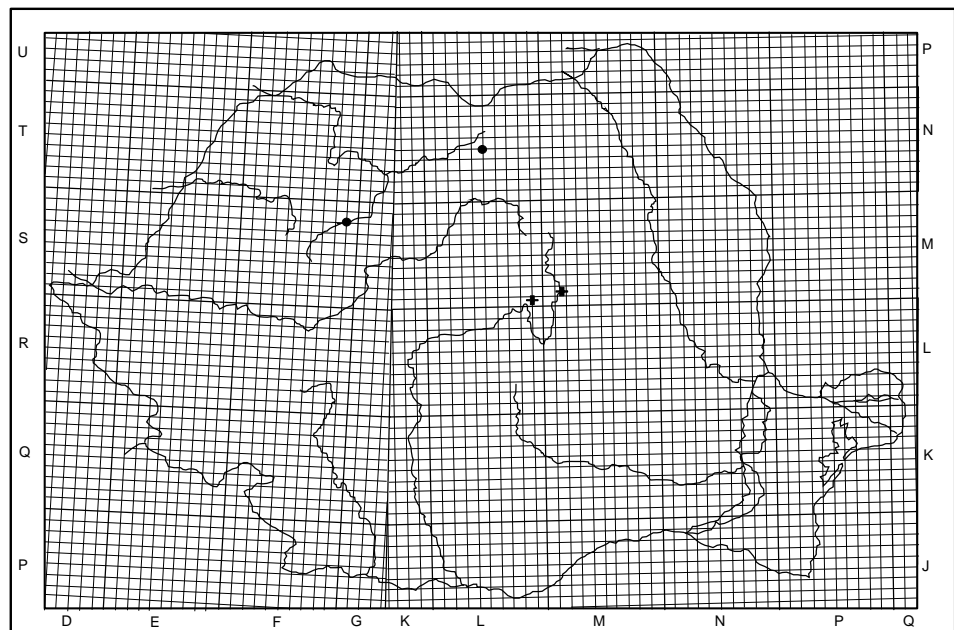


Fig. 3 ● *Faerberia carbonaria* + *Haplopius croceus*

Hericium erinaceus (Bull.: Fr.) Pers. – saprotrophic, lignicolous on *Alnus incana*, *Quercus petraea*, *Fagus sylvatica*, in deciduous forests (*Carpino-Fagetum*, *Carpino-Quercetum*), on acid brown and podzolic soils, July-December.

Romanian distribution (Fig. 2). Alba county: Blaj – GS 21 (Borza, Lupsa 1964). Cluj county: Fagetul Clujului - FS 97/98 (Silaghi 1961,1966). Iasi county: Bârnova – NN 41 (Chifu, Toma & Dascalescu 1965), [Herb. I, 100161]. Suceava county: Panaci – LN 73 (Toma 1975); Putna valley – LN 85 (Toma 1968)..

Hydnellum suaveolens (Scop.: Fr.) P. Karst. – mycorrhizal with *Abies*, *Picea*, in coniferous and mixed forests (*Piceetum montanum*, *Abieti-Fagetum*), on acid brown soils, July – September.

Romanian distribution (Fig. 4). Brasov county: Bucegi Mts. in Piatra Mare (Nature reserve) – LL 94 (László 1972). Cluj county: Vladeasa Mts. – FS 37/38 (Silaghi 1961); Pietrile Albe in Vladeasa Mts. – FS 38, Buscat Peak in Gilaului Mts. – FS 75 (Silaghi 1966). Maramures county: Baiut – GT 27/KN 77 (Salageanu A. 1970). Neamt county: Varatec – MN 42 (Chifu 1971). Suceava county: Rarau Mts. – LN 95 (Chifu, Dascalescu & Toma 1965); Vatra Dornei – LN 74 (Lungu 1971); Poiana Stampei in „Tinovul Mare” (Nature reserve) – LN 53, Cosna – LN 64, Sarul Dornei (Nature reserve) - LN 72/73 (Toma 1975).

Hygrocybe calyptiformis (Berk. & Broome) Fayod – saprotrophic, terrestrial, in grasslands (*Festuceto rubrae-Agrostidetum*, *Violo caninae-Nardetum*), on podzolic brown soils, September.

Romanian distributions (Fig. 6). Maramures county: Poiana Varatec in Lapus Mts. – GT 26/KN 76 (Salageanu A. 1970). Neamt county: Neamt depression – MN 33, MN 50 (Chifu 1971).

Hygrocybe laeta (Pers.: Fr.) P. Kumm. – saprotrophic, terrestrial, in grasslands (*Festuceto rubrae-Agrostetum tenuis*), on luvic brown soil, October.

Romanian distribution (Fig. 6). Salaj county: Zalau – FT 52/53/63 (Pázmány, László 1979).

Hygrophorus marzuolus (Fr.: Fr.) Bres. – mycorrhizal with *Picea*, *Abies*, *Pinus*, *Fagus*, in deciduous and coniferous forests (*Dicrano-Pinetum silvestris*, *Piceo-Fagetum*, *Abieti-Fagetum*, *Symphyto cordati-Fagetum* etc.), on acid brown and podzolic soils, February-May.

Romanian distribution (Fig. 7). Brasov county: Brasov – LL 85/95, Sacele – LL 95 (Silaghi, László 1968). Cluj county: Fagetul Clujului – FS 97/98 (László, Pázmány, 1976); Gilau – FS 87/88 (Pázmány, László 1982). Suceava county: Poiana Negri – LN 54 (Toma 1975).

Hygrophorus purpurascens (Alb. & Schwein.: Fr.) Fr. – mycorrhizal with *Abies*, coniferous forests (*Abieti-Fagetum*), on acid brown soil, September.

Romanian distribution (Fig. 7). Maramures county: Botiza – KN 88 (Lupoi 1964).

Hymenochaete cruenta (Pers. : Fr.) Donk – saprotrophic or weak parasite, lignicolous on *Abies*, *Picea*, in coniferous forests (*Abieti-Fagetum*), on acid brown soils, July-October.

Romanian distribution (Fig. 2). Bistrita-Nasaud county: Vinului valley – LN 36 (Silaghi, Lupoi 1963); Corongis Peak and Craciunel Mt. in Rodnei Mts. National Park) (Silaghi 1966). Maramures county: Tocila river – GT 27/KN 77 (Salageanu A. 1970). Prahova county: Sinaia – LL 81/82 (Kotlaba 1959). Suceava county: Poiana Stampei in „Tinovul Mare” (Nature reserve) - LN 53 (Toma 1975).

Laricifomes officinalis (Vill. : Fr.) Kotl. & Pouzar - a weak parasite or saprotrophic on *Larix decidua*, in beech woods with *Larix decidua*, plantation with larch, montanae *Pinus sylvestris* forests (*Saxifrago cuneifoliae-Laricetum*, *Seslerio rigidae-Pinetum silvestris*), on rendzina, July-October.

Romanian distribution (Fig. 4). Alba county: Nature reserve Scarisoara-Belioara – FS 44 (Spîrchez, Silaghi 1963, Csuros, Spârchez 1963); Vidolm (Nature reserve) – FS 44 (Silaghi 1966). Prahova county: Piatra Arsa in the National reserve Bucegi – LL 82 [BUCM,121985, leg. Negrean G., 1990]; Busteni in Urlatoarea Mare – LL 82/83 (Kotlaba 1959, Spîrchez, Silaghi 1963).

Leucopaxillus tricolor (Peck) Kühner – saprotrophic, terrestrial, in deciduous forests (*Quercu-Carpinetum*), on podzolic and acid brown soils, August.

Romanian distribution (Fig. 8). Brasov county: Stejaris – LL 85 (Babos, László & Silaghi 1968). Harghita county: Ruganesti – LM 52 (László, Pázmány, 1976).

Montagnea radiosa (Pallas) Sebek – saprotrophic, terrestrial, xerophilic, in xerophilic vegetation (*Ceratocarpo-Euphorbion steposae*), on alluvial or cernoziomic soils, May-August.

Romanian distribution (Fig. 8). Constanta county: Medgidia – PJ 09/PK 00 (Alexandri 1934, Turenschi, Mititelu et all. 1963). Ialomita county: Marculesti – NK 43 (Alexandri 1934, Turenschi, Mititelu et all. 1963). Iasi county: Iasi –NN 41 (Turenschi, Mititelu et all. 1963). Tulcea county: Babadag – PK 37 (Toma, Chifu, Vitalariu 1965); Delta Dunarii-Tulcea – PL 40 (Brândza, Solacolu 1932).

Myriostoma coliforme (With. : Pers.) Corda - saprotrophic, terrestrial, in deciduous forests, grasslands (*Carpino-Fagetum*, *Bromo sterili-Robiniatum pseudaccaciae*), on sandy soils. July-November.

Romanian distribution (Fig. 11). Buzau county: Râmnicul Sarat – NL 02 (Brândza, Solacolu 1932). Cluj county: Cluj-Napoca - FS 97/98/GS 08 (Silaghi 1966). Galati county: Hanul Conachi (Nature reserve) – NL 44 (Brândza, Solacolu 1932).

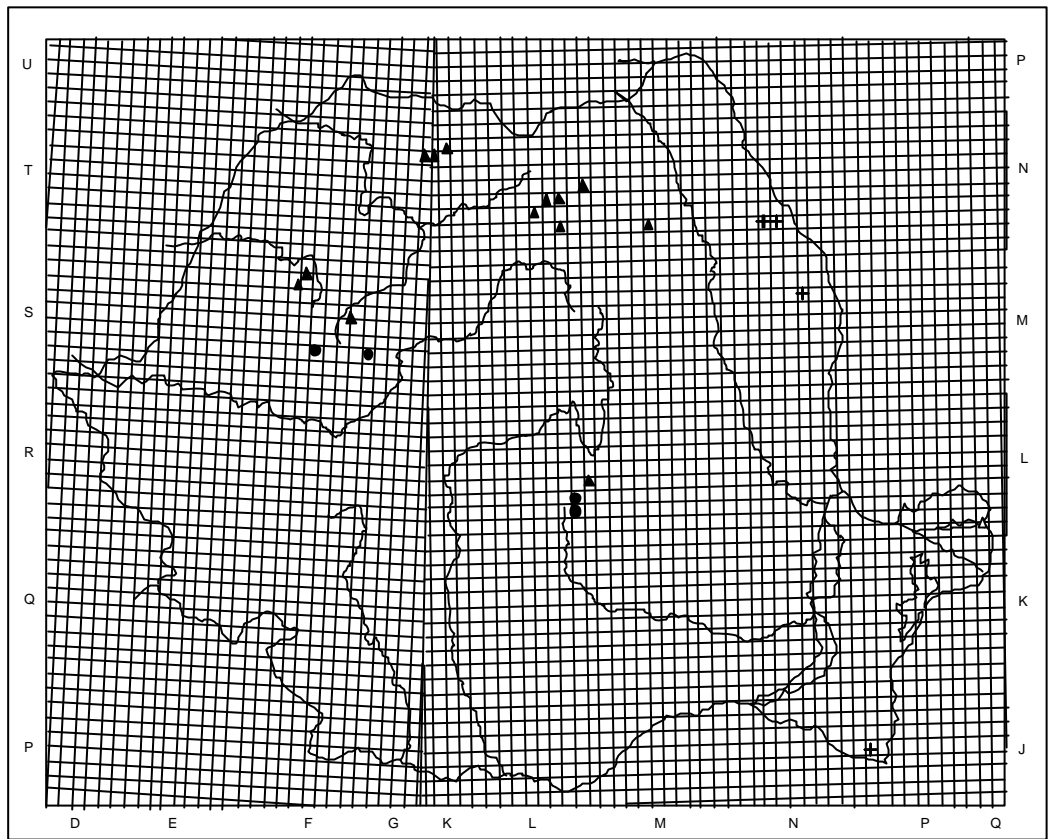


Fig. 4 ● *Laricifomes officinalis* + *Polyporus rhizophilus* ▲ *Hydnellum suaveolens*

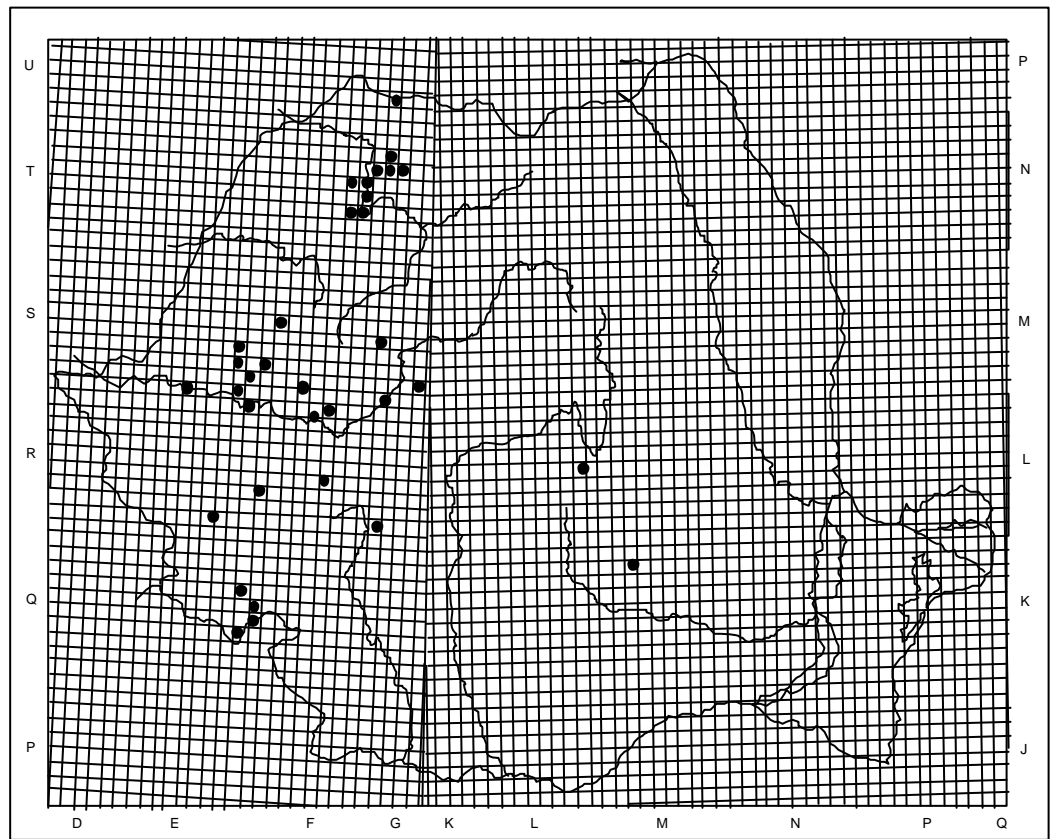


Fig. 5 ● *Amanita caesarea*

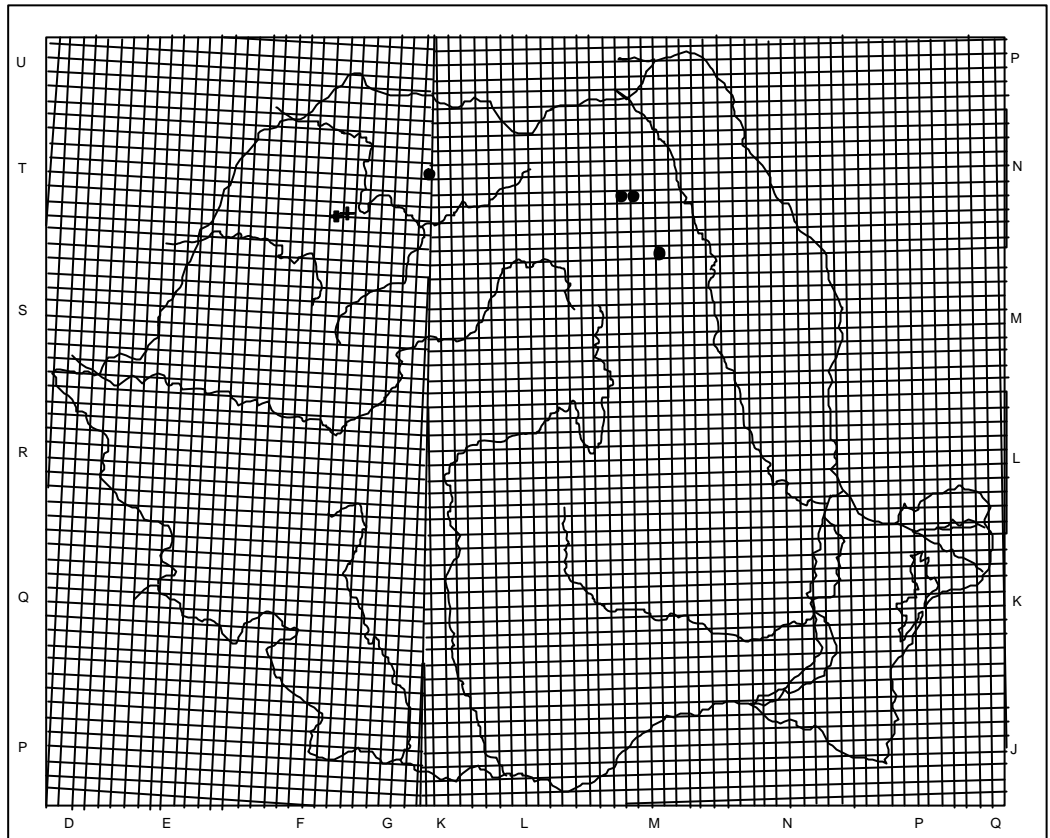


Fig. 6 ● *Hygrocybe calyptriformis* + *Hygrocybe laeta*

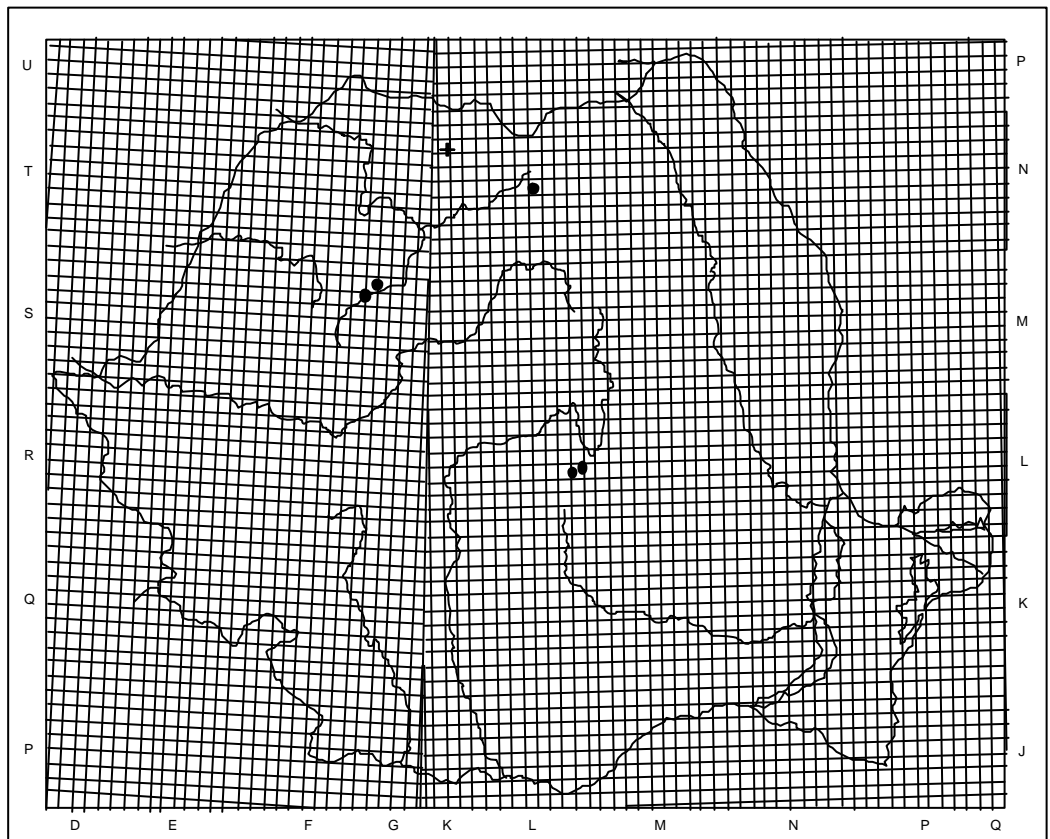


Fig. 7 ● *Hygrophorus marzuolus* + *Hygrophorus purpurascens*

Ialomita county: Dor Marunt - MK 91/92, Hagieni – NK 64 (Brândza, Solacolu 1932). Prahova county: Chitorani – MK 28/38 (Alexandri 1934). Vrancea county: Milcovul – NL 25 (Brândza, Solacolu 1932); Focsani – NL 15/16 (Brândza, Solacolu, 1932).

Panaeolus fimiputris (Bull. : Fr.) Quél. – saprotrophic, fimicolous, in meadows (*Festuco-Agrostetum tenuis*, *Scorzonero roseae-Festucetum nigricantis* etc.), on dung of herbivores, May-October.

Romanian distribution (**Fig. 9**). Bistrita-Nasaud county: Inaut Peak (Rodnei Mts., National Park) – LN 46, Corongis Peak (Rodnei Mts., National Park) – LN 36 (Silaghi 1966). Cluj county: Cluj-Napoca – FS 97/98/GS 08 (Silaghi 1967); Gilaului Mts.–FS 75, Vladeasa Mts. – FS 37/38, Calatele – FS 57/58 (Silaghi 1966). Maramures county: Poiana Varatec (Lapusului Mts.) – KN 88 (Salageanu A. 1970). Neamt county: Botoaia – MM 49/59/MN 50 (Tanase, Chifu 1999). Suceava county: Dorna-Arini – LN 74, Tinovul Mare in the Poiana Stampei (Nature reserve) - LN 54 (Toma 1975).

Phylloporus pelletieri (Lév.) Quél. – mycorrhizal with *Fagus*, in deciduous forests (*Carpino-Fagetum*), on acid brown soils, August-October.

Romanian distribution (**Fig. 9**). Bistrita-Nasaud: Rodnei Mts. (National Park) in Sacii valley – LN 17/27 (Silaghi 1966). Cluj county: Fagetul Clujului – FS 97/98 (Silaghi 1966). Maramures county: Lapusului Mts. in Roii valley - FU 91 (Salageanu A. 1970).

Pisolithus arhizus (Scop.: Pers.) S. Rauschert – mycorrhizal with *Picea*, *Quercus*, in forests, plantations, on sandy soils, July – September.

Romanian distribution (**Fig. 12**). Alba county: Ampoiului valley (Zlatna) – FS 70 [Herb. A. Pop, Cluj-Napoca, leg. A. Pop, 13.08.2001]. Galati county: Hanul Conachi (Nature reserve) – NL 44 (Brândza, Solacolu 1932). Maramures county: Baiut – GT 27/KN 77 (Lupoi 1965). Mehedinti county: Strehaiia – FQ 74 (Brândza, Solacolu 1932). Vrancea county: Milcovul – NL 25 (Brândza, Solacolu 1932).

Polyporus rhizophilus Pat. – saprotrophic, herbicolous (base of culms of *Poaceae*), xerophilic vegetation (*Stipetum capillatae*), May-August.

Romanian distribution (**Fig. 4**). Constanta county: Nature reserve Hagieni – PJ 14/15 [Herb. Negrean, leg. Negrean G., on *Dichanthium*, 22.08. 2002]. Iasi county: Lupului valley in Nature reserve „Valea lui David” – NN 42 [BUCM, 113038, leg. Negrean G., 1989]. Vaslui county: Gugesti – NM 67 (Toma, Vitalariu 1972).

Poronia punctata L.: Fr.) Fr. – saprotrophic, fimicolous, in meadows (*Festucetum sulcatae*, *Festuceto rubrae-Agrostetum* etc.), on dung of herbivores, April – December.

Romanian distribution (**Fig. 1**). Alba county: Detunata (Nature reserve) – FS 72 (Ghisa, Codoreanu et al. 1969). Arad county: Buteni – ES 83 (Toma 1967). Bihor county: Stâna de Vale – FS 27 (Bechet, Ratiu & Silaghi 1968); Suncuius – FT 10 (Bechet, Silaghi et al. 1966); Oradea – ET 61/70/71 (Simonkai 1890). Buzau county: Penteleu Mt. – ML 54/55 (Savulescu 1938). Bistrita-Nasaud county: Telciu – LN 05 (Toma 1967). Cluj county: Cluj-Napoca in Hoia forest, Fagetul Clujului – FS 97/98 (Silaghi 1957, 1966); Cluj – FS 97/98/GS 08 (Silaghi 1967); Baisoara Mt. – FS 75, Vladeasa Mts. in Poiana Frânturii – FS 37/38 (Silaghi 1966). Constanta county: Carpinis in Canaraua Fetei forest (Nature reserve) – NJ 57 (Toma, Chifu, Vitalaru & Dascalescu 1965); Cheia – PK 12 (Horeanu 1976); Agigea (Nature reserve) – PJ 28, Valul lui Traian – PJ 19 (Kotlaba 1959). Iasi county: Rediu – NN 32 (Dobrescu, Toma & Eftimie 1969); Cârliș – NN 42 (Chifu, Toma & Dascalescu 1964). Ilfov county: Baneasa – MK 33 (Savulescu 1938). Maramures county: Lapus – GT 26/KN 76, Poiana Varatecului – KN 88 (Salageanu A. 1970). Neamt county: Neamt depression – MN 42 (Chifu 1971). Prahova county: Cheia – ML 13, Chitorani – MK 28/38 (Savulescu 1938). Sibiu county: Casoltî – Kl 87, Sibiu – Kl 77/78 (Fuss 1878). Suceava county: Poiana Negri – LN 64, Sarul Dornei – LN 72/73 (Toma 1975). Tulcea county: C.A. Rosetti – QL 01/02 [Herb A. Pop, Cluj-Napoca, leg. Negrean G., on horse dung, 15.06.1990].

Sarcosphaera coronaria (Jack.) Boud. – saprotrophic (?), terrestrial, in coniferous forest (*Soldanello majori-Picenion*), on calcareous ground, acid brown soils, May-August.

Romanian distribution (**Fig. 1**). Brasov county: Barsov – LL 85 (László 1972). Bihor county: Stâna de Vale – FS 27 (Bechet, Ratiu & Silaghi 1968). Bistrita-Nasaud county: Inau in Rodnei Mts. (Nature reserve) – LN 42 (Silaghi 1966). Cluj county: Vadului valley in Muntele Mare – FS 85 (Silaghi 1963); Cluj-Napoca in Manastur forest – FS 97/98/GS 08 (Tucra 1994/95); Cluj-Napoca in Craiului hill – FS 97/98 (Pázmány, László 1979); Baisoara – FS 75 (Silaghi 1966). Harghita county: Lacul Rosu – MM 08 (Bánhegyi 1942). Maramures county: Baiut –KN 88 (Salageanu A. 1970). Neamt county: Ceahlau Mts. (Nature reserve) – MM 19 (Toma, Zanoschi & Carausu 1966); Pângarati – MM 38/39 (Chifu, Toma & Dascalescu 1965), [Herb. I, 100160, Leg. Toma M., 1961]. Suceava county: Vatra Dornei – LN 74 (Toma 1972, 1975); Pojorâta – LN 86 (Toma 1971).

Strobilomyces strobilaceus (Scop.: Fr.) Berk. – mycorrhizal with *Fagus sylvatica*, in deciduous and mixed forest (*Symphyto cordati-Fagetum*, *Carpino-Fagetum*, *Abieti-Fagetum*), on podzolic brown soils, July-October.

Romanian distribution (**Fig. 10**). Bacau county: Slanic Moldova – MM 51 (Chifu, Constantinescu et al. 1999). Bihor county: Padurea Craiului Mts. – FT 20 [Herb. A. Pop, Cluj-Napoca, leg. A. Pop, 30.08.1996]. Bistrita-Nasaud county: Vinului valley in Rodnei Mts. – LN 35/36 (Silaghi 1966); Arcalia – KN 90 [Herb. A.Pop, Cluj-Napoca, leg. A. Pop, 05.06.1995.]. Brasov county: Vulcan – LL 75 (Pop & Soltész 2001). Cluj county: Fagetul Clujului - FS 97/98 (Silaghi 1958, 1966). Maramures county: Dobricelul river – GT 16, Roii valley – FU 91 in Lapusului Mts. (Salageanu A. 1970). Neamt county: Manastirea Nemtului, Neamt depression – MN 42 (Chifu 1967, 1972, 1973). Salaj county: Ileanda - FT 94 [Herb. A. Pop, Cluj-Napoca, leg. A.Pop, 13.09.1998.]. Suceava county: Dornisoara – LN 53 (Toma 1975).

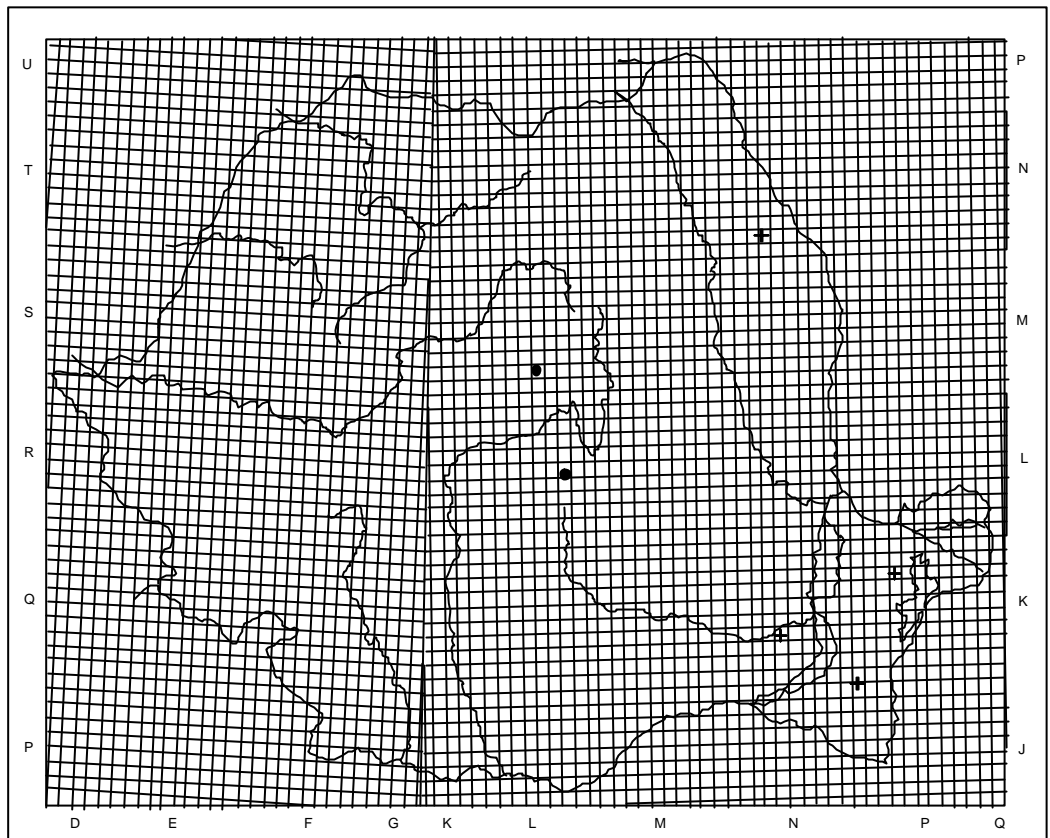


Fig. 8 ● *Leucopaxillus tricolor* + *Montagnea radiosa*

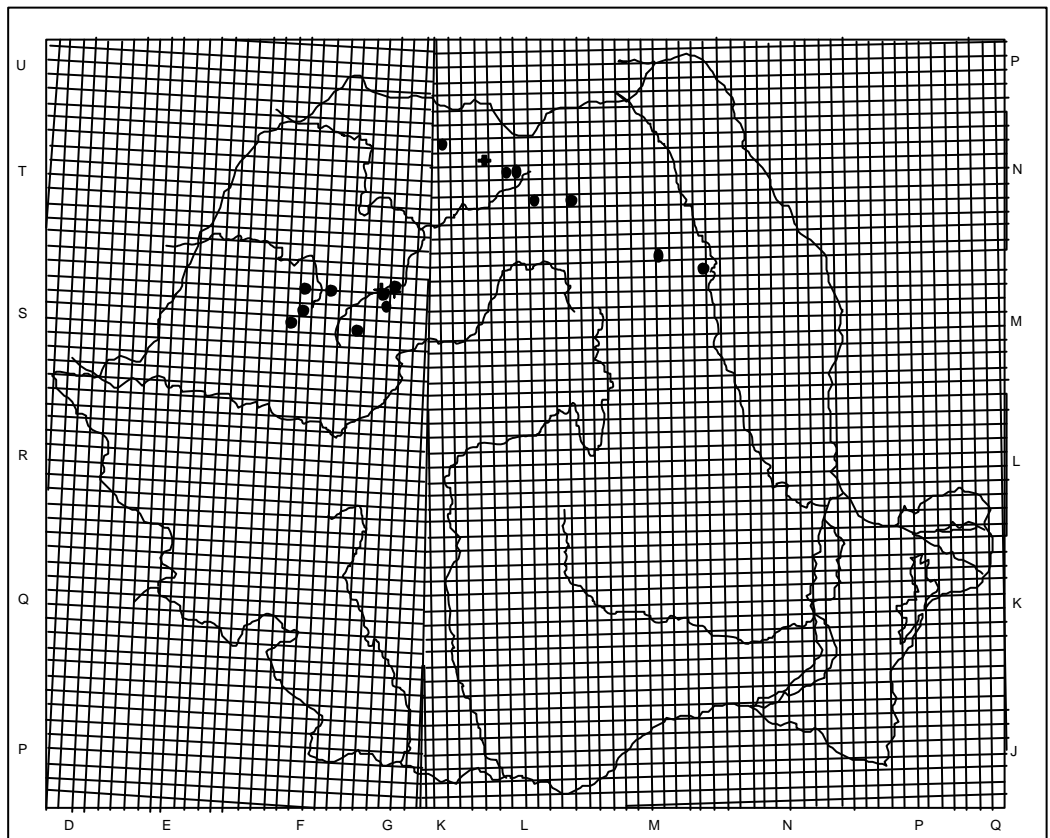


Fig. 9 ● *Panaeolus fimiputris* + *Phylloporus pelletieri*

Suillus flavidus (Fr.: Fr.) J. Presl – mycorrhizal with *Pinus*, coniferous forests (*Vaccinio uliginosi-Pinetum sylvestris*, *Eriophoro vaginati-Pinetum sylvestris*), on acid brown soils, peaty podzolic soils, August-September. Romanian distribution (Fig. 10). Harghita county: Mlastina (Peat bog) Mohos (Nature reserve), Sf. Ana Lake (Nature reserve) – MM 10 (Babos, László & Silaghi 1968). Prahova county: Sinaia in Nature reserve „Arinisul Sinaia” – LL 82 (Barbu 1972).

Conclusions

The mapping of the 26 rare fungal species occurring in Romania, threatened on European level, is considered as a basis for further investigation on their ecology, distribution and for developing conservation policy.

The species *Faerberia carbonaria*, *Helvella atra*, *Hygrocybe calytriformis*, *Hygrocybe laeta*, *Leucopaxillus tricolor*, *Polyporus rhizophilus* and *Suillus flavidus* recorded in only three localities are considered as very rare in Romania.

For the species *Batarrea phalloides*, *Hapalopilus croceus*, *Hygrophorus purpurascens*, *Laricifomes officinalis* and *Phylloporus pelletierii*, only data before 1970 were found.

11 species: *Bovista paludosa*, *Gomphus clavatus*, *Hapalopilus croceus*, *Hericium erinaceum*, *Hygrocybe calytriformis*, *Hygrophorus purpurascens*, *Laricifomes officinalis*, *Leucopaxillus tricolor*, *Myriostoma coliforme*, *Phylloporus pelletieri* are included in the candidates proposed for listing in Appendix I of the Bern Convention.

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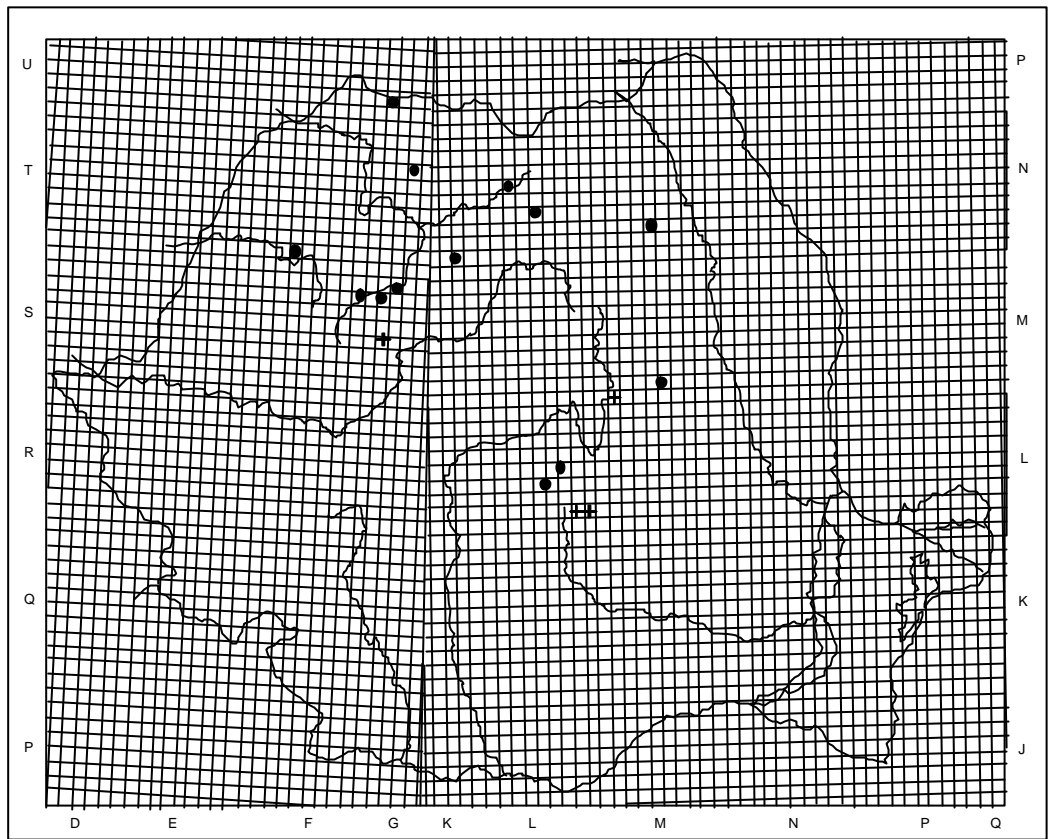


Fig. 10 ● *Strobilomyces strobilaceus* ✚ *Suillus flavidus*

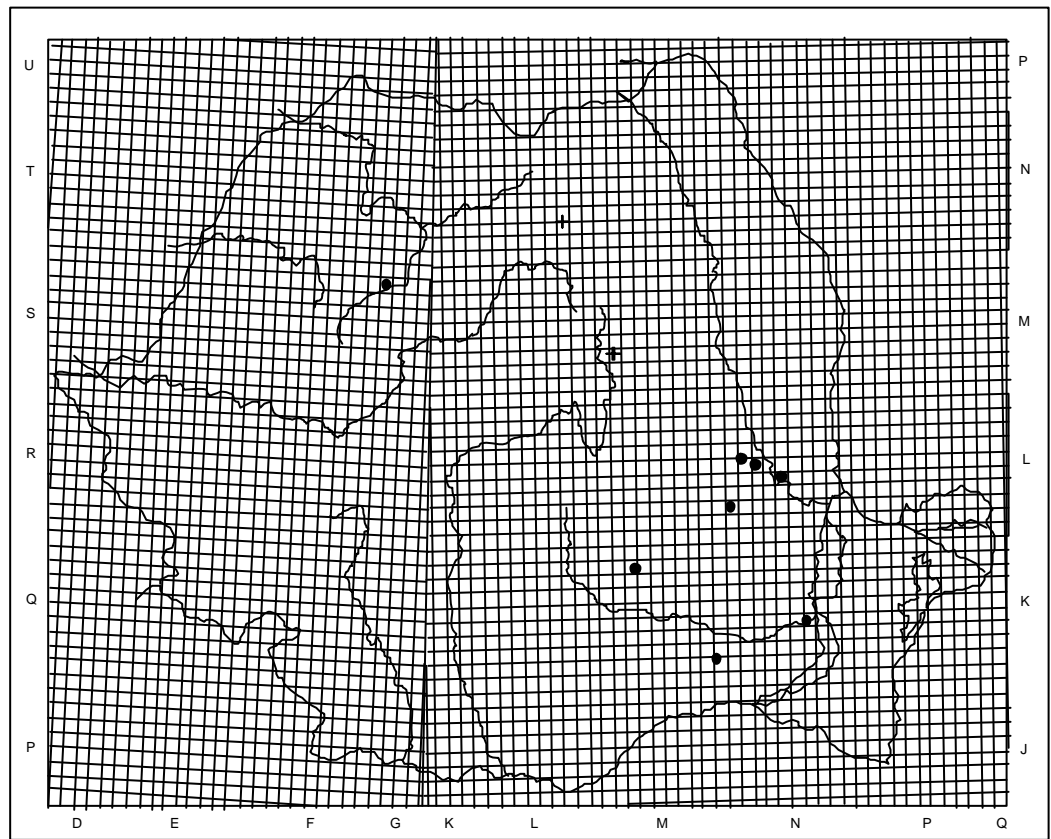


Fig. 11 ● *Myriostoma coliforme* ✚ *Bovista paludosa*

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Adriana Pop & Catalin Tanase, September 2003

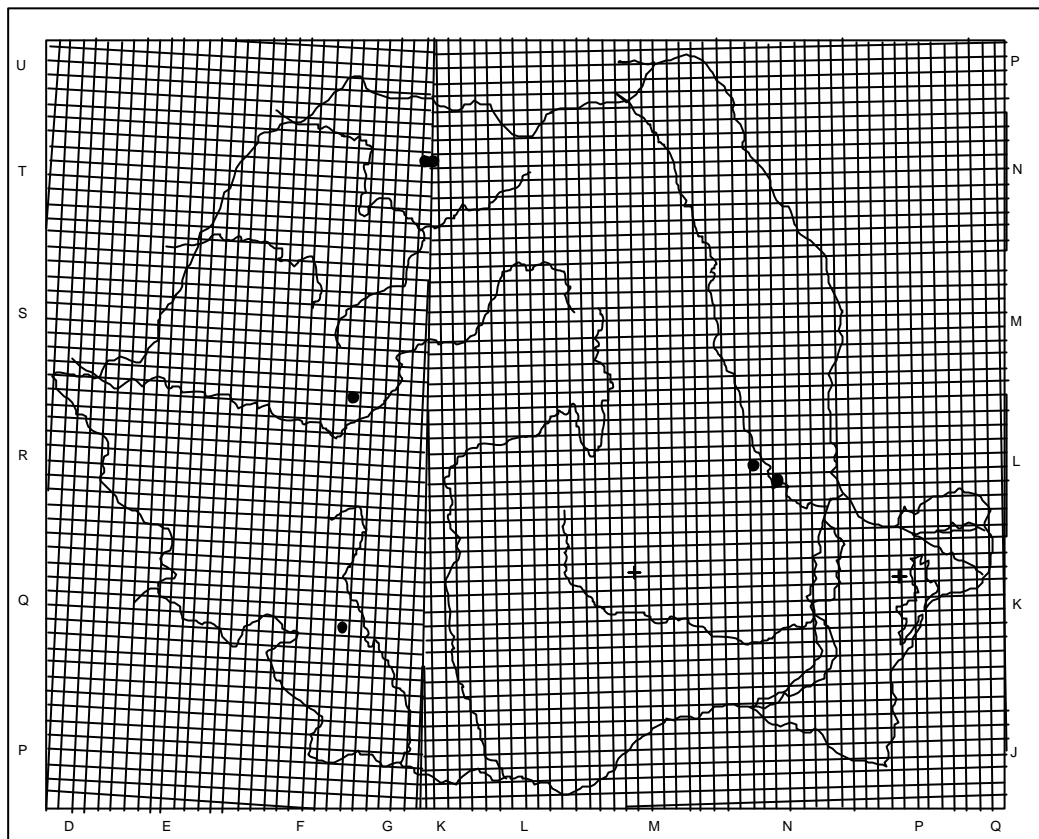


Fig. 12 ● *Pisolithus arhizos* ✚ *Batarraea phalloides*

Announcements

By Cvetomir Denchev

MYCOLOGIA BALCANICA

It is my pleasure to inform you that the website of the new mycological journal, MYCOLOGIA BALCANICA, has been created. I would like to invite you to visit our new website: <http://www.mycobalcan.com>

You and your colleagues are welcome to take a part as authors in MYCOLOGIA BALCANICA.

Cvetomir Denchev, editor of Mycologia Balcanica

By Boris Ivancevic

XI OPTIMA Meeting

The Natural History Museum will be hosting XI OPTIMA Meeting to take place in September 2004.

For some time now, there has been a Commission on Fungi, with Secretary: S. Onofri, and Members: F. Calonge, R. Courtecuisse, D. L. Hawksworth, D. Minter, J. Mouchacca, G. Venturella, S. Waser, G. Zervakis as part of OPTIMA (Organisation for the Phyto Taxonomic Investigation of the Mediterranean Area). Thus, one of the seminars at the Belgrade meeting will be dedicated to Fungi and Lichens. The moderator of the seminar will be S. Onofri, Viterbo, Italy.

During the six-day Meeting, oral presentations will be given by invitation, but everybody is welcome to do poster presentations. After the Meeting, there will be post-meeting excursions. Anyone can participate in the Meeting, not only OPTIMA members. However, OPTIMA members would be charged a smaller meeting fee, and it is very simple to join OPTIMA.

If you would like to participate in the meeting, and want to receive a preliminary information about the XI Optima Meeting, please contact Mrs. Olja Vasic, Natural History Museum, Njegoseva 51, P.O. Box 401, YU-11000 Belgrade, Tel/fax: +381 11 344 22 65, E-mail: oljav@beotel.yu

By Claudia Perini

European Mycological Association

During the XIII CEM at Alcalà de Henares (Madrid, Spain) in September 1999, Eef Arnolds of the Netherlands underlined the need of a "society to represent mycology at an European level". He together with David Minter of the UK and Reinhold Pöder of Austria worked on this proposal and suggestions, comments and views were asked throughout Europe. As foreseen at the XIV Congress of European Mycologists at Katsiveli (Yalta, Crimea, Ukraine) in September 2003, based on the analysis of the results of the survey (open paper included in the Abstracts book), following decision were taken:

The Congress agreed to establish the European Mycological Association!

The Congress resolves that the objective of the Association will be to promote all aspects of mycology within Europe by organizing periodic Congress and by other means as will from time to time be determined.

The Association will have a Constitution and the powers to make Rules for governance of the Association.

The initial membership are the founders members, namely those present at the XIV CEM.

The Initial Executive Committee is: President David Minter, Secretaries Tania Andrianova and Reinhold Poeder, Treasurer Stephanos Diamandis. This big decision may positively change the future of ECCF.

Compiled by BeatriceSenn-Irlet, [WSL](http://www.wsl.ch), CH- 8903 Birmensdorf, December 2003.