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Report on
Scientific Publishing in Natural History Institutions

Meeting held

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Introduction

In the digital era of today the field of scholarly publishing is rapidly changing. Publishing staff and departments in natural history institutions (NHIs) need to respond to new opportunities and new strategic questions concerning visibility, access, format, and financial structure of their titles. Some developments are generic for academic publishers, yet some are specific for natural history sciences. The occurrence of new technical and strategic issues was the main reason for the scientific publishing department of the Muséum national d'Histoire Naturelle (MNHN) and European Distributed Institute of Taxonomy (EDIT) to organise a second meeting[1] on scientific publishing in NHIs 22-23 of June, 2009 in Bratislava.

The MNHN is scientific publisher since 1802 and now publishes four research journals (mainly devoted to taxonomic descriptions) and seven series of monographs e.g. in Botany, Earth Sciences, Zoology, Biodiversity management, and Humanities. The content is essentially based on the collections of the museum. Within the MNHN the whole publication process is handled by the Scientific Publishing department, which deals with the manuscripts from the peer-reviewed process, the technical preparation to the management of back issues, subscriptions and sales of the titles. This is the work of a team of professional publishing staff that processes a total of around 7000 pages a year. Today the MNHN Publishing department faces several challenges, related to the digital era. For this reason it would like to share its experience and questions with other natural history publishers and publishing experts from outside to develop a thoughtful and strategic decision-making model beneficial to the field.

The second organiser, EDIT is a network of 28 natural history museums, herbaria and botanical gardens. The network supports and facilitates integration of research infrastructures in taxonomy and biodiversity research at different (institutional) levels. Journals, Monographs, Flora's and Fauna's are part of the taxonomic research infrastructure. Among the EDIT institutions over more than 124 titles are published of which at least 79 are research journals, most covering taxonomy and systematics. EDIT recognises that the scientific journals and series produced by NHIs are a window to the work of taxonomists and to the research on collections. They are a valuable infrastructure for the taxonomic community, but they can play a much more efficient role if integration of information, access, and quality are further optimised.

The EDIT scientific publishing meeting aimed to act as an expertise platform for those working in scientific publishing and libraries in EDIT institutions, want to be a sounding board and set agenda points for the EDIT steering committee and the EDIT directors and beyond. The meeting was a grassroots initiative from a collective of different publishing departments in NHIs in Europe and was sponsored by the EDIT consortium.

Electronic publishing of scholarly information

In the last decade electronic publishing has changed the scholarly publishing landscape for publishers and readers of scholarly information. Already in 1998 the merits of electronic publishing for scholars were summarised nicely by Terry Rohe (1998). He observed how researchers do not have to come into the library to use journals anymore and have access to publications 24/7 wherever they are. Constraints on publishing, including speed and distance, are being removed by the Web. Faculty members have become more connected to researchers in other parts of the world. Full texts for materials are more easily accessible on the Web than they are on paper (moving images and models, full colour option, zoom options etc). According to Rohe, scholars are rightfully excited by the offer of unprecedented speed of publication and the possibility of going directly from a subject index reference or a footnote to the source

[1] A first meeting was held December 8, 2008 in Paris (see also report EDIT, 2009)

material (see also section 2.2 on Tools and Services). For publishers e-publication offer a new medium which has improved dramatically the access of scientific information they publish, which speeds up the publication process so information gets out in the public domain much quicker and offer their readers additional services as those mentioned above. Yet new developments come with new questions for users and service providers such as publishers and libraries, and more will arise as the technologies further develop (see also section 3: Challenges). Publishers of scholarly information and libraries will have to adapt their workflows and business models to these new technologies with significant implications for their organisations (c.f. European Commission, 2006). Other challenges are related to the differences between the electronic version and the paper version that lead scholars to ask which one is the authoritative text when there is both an electronic and a paper form (see also section 4.2 Intellectual Property Rights). These and other aspects were addressed in Bratislava by different invited speakers from the publishing world and by experts from EDIT institutions.

Format of the meeting

The setting of the meeting in Bratislava was a one and a half day of presentations and discussion sessions. The meeting gathered 35 participants, from 9 countries, among which were 10 invited speakers and 25 representatives (publishing and library departments) form 14 EDIT institutions. The agenda was drafted during a first meeting on December 8, 2008 (EDIT, 2008).

On the agenda in Bratislava were the following subjects: 1) the state of the art of scientific publishing in NHIs; 2) Electronic publishing and Open Access; 3) Electronic publishing, barriers and solutions 4) Electronic publishing and tools; 5) Best publishing practices (see appendix). The meeting aimed to:

- Discuss optimisation of dissemination and access to taxonomic journals published by EDIT institutions.
- Inform and share experiences on the different scientific publishing services, tools and strategies applied.
- Discuss how these services, tools and strategies can help further optimise scientific publishing production output.
- Discuss how NHIs can organise themselves in the future to decrease fragmentation and continue to learn from each other.
- Formulate recommendations on dissemination and access, at two levels:

  – to the publishing level in EDIT institutions (staff working on scientific publications)

  – to the EDIT Steering Committee and Board of Directors

1 Discussion and outcomes of the meeting

In the following sections, the report summarises the issues presented and discussed at the meeting, the 22-23 June, 2009 in Bratislava. The report does not follow a chronological but a logical order and is structured around the themes as they where on the agenda.

1.1 Scientific publishing in NHIs, state of the art

Publishers in natural history sciences are confronted with the same opportunities and challenges as other publishers yet have to deal with some specific issues related to the field of natural history sciences. Here follows a brief summary on publishing in NHIs by looking at what happens in EDIT institutions.

Why do NHI publish? NHIs have a long tradition of publishing their own scientific journals. The journals serve to communicate scientific and technical knowledge in the field of natural history, taxonomy and systematics in specific. The dissemination formats used are journals, monographs, checklists and

books, in hardcopy or electronic form. Traditionally the journals are used to validate the in-house collections. Moreover, today the journals have become an important means of exchange titles in global library exchange programmes between institutions. By publishing its own journals and monographs an institution is able to set conditions and control (a part of) the dissemination of the research information in the field. Furthermore, there is evidence that non-for-profit publisher's price their products 3 times lower than for-profit-publishers (European Commission, 2006), which eases the access to information for research taxonomic institutions.

How do NHI publish? On the technical site of the publishing process NHIs do not differ from scholarly publishers in other scholarly fields. Like other publishers they deal with print technologies, copy editing, layout, managing print-runs, proofreading, work with international standard numbers (ISSN, ISBN, DOI), manage the peer-review process, work on obtaining ISI impact factors for their journals, optimisation of dissemination processes, have know-how on intellectual property rights and fair-use. Yet, natural history publishers are distinct because they are non-for-profit publishers, while most scholarly publishers are commercial businesses. They have a distinctive core mission namely to disseminate research results in natural history sciences and make the information accessible and discoverable for everyone who needs it. In short, NHIs who publish fulfil (alike publishers in other fields) a role of professional publisher. Additionally they certify research results (specific to scientific publishers) and they are in charge of the dissemination of scientific, publicly funded information (specific to non-for-profit publishers). Finally, specific to the field is the necessity to deal with the use of nomenclature rules in publications, a long tradition of inter library exchange programmes of their titles with other NHIs, and the long shelf life of taxonomic publications.

How NHI differ in publishing? EDIT institutions use a variety of economic models for their journals like pay-per-view *vs* Open Access *vs* subscription or hybrid models combining subscription based and Open Access (OA) models. Also their dissemination models may differ. Thirty eight percent of the 79 journals are available online (OA or as a subscription model), 28% are covered by an ISI impact factor (of which 58% is < 1). Some of the institutions have professional publishing staff, in other institutions journals are published by one scientists or a group of scientists who carry out publishing responsibilities along side their research work.

What NHIs have in common? NHIs apply similar editorial processes. Their editorial policies support the in-house material and their publishing departments have strong relations with the international (natural history) libraries to sustain library exchange programmes. In general, the journals published by NHIs are long standing journals[2] with a low print-run (between 50 and 500 copies). They share in common the need to respond to new technological and strategic developments and trends that have entered the publishing domain. One of these challenges is that scholarly publishers including NHIs have to find suitable cost models for their services. Open Access publications bring new questions to the use of cost models. Although different studies have been carried out on the costs of scholarly publications, there is no consensus yet about which model is most cost efficient for public expenses (c.f. Houghton et al, 2009; Wellcome Trust, 2004). However, we know that cost structures do differ and that for each cost model public money is spent in different sections of the publishing chain. An overview of publishing sections where public funding is allocated to is listed in Figure 1, for a for-profit model, not-for profit business models and the OA models.

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[2] In the EDIT network (30% of the journals are at least 60 year-old journals and 16% > 100 year old) (e.g. *Zoosystema*, *Adansonia*, *Geodiversitas* (formerly *Bulletin du Muséum national d'Histoire naturelle*) published since 1895; *Kew Bulletin* published since 1887 (formerly *Bulletin of miscellaneous information*); *Annales historico-naturales Musei Nationalis Hungarici* published since 1903).

Table 1. Publishing activities and access of scholarly information. Workflow sections financed with public funding.

	For-Profit model	For-Profit model OA	Not-For-Profit model	Not-For-Profit model OA
RESEARCH by author	YES	YES	YES	YES
REVIEW process	YES	YES	YES	YES
EDITING	NO	YES*	YES	YES
LIBRARY subscriptions	YES	NO	NO	NO

***author-pays (= institution, but not always)**

What do NHIs publish? In the EDIT network we have counted until so far 124 scientific titles, of which 79 journals and 45 scientific series (monographs, flora, fauna's) most of them devoted to systematics and taxonomy, 25 of the EDIT's institutions are publishers (own at least one title). Several of the EDIT institutions also publish books and other material targeted at the general public.

2 Opportunities of electronic publishing of scholarly information

Currently electronic publications are available in different online formats as subscription package via the institutional library behind a central portal page, as pay-per-view, or as an OA document on the Web. The online subscription structure still resembles the traditional relationship between publisher, library and reader. The publisher's customer is often a library, who purchases subscriptions of journals. The library then offers access via a portal to end-users where they can download articles. Access is paid for by the institution, the employer of the research staff. An alternative model is the pay-per-view structure which allows end-users to buy online access and the right to download for personal use a specific article or journal volume and so go around the library access.

Because scientific publications are the fruits of public funded research, there is a growing support that scholarly publications should be made accessible, freely to all. The OA movement gains more and more support in the research community and gave birth to collective declarations such as the Budapest and Berlin declarations[3]. The OA model breaks the traditional relationship between publisher, library and reader by giving information away for free. OA articles are available to everyone with access to the Web. This new way of disseminating scientific information brings new questions to publishers and libraries that were used to charge users for their services.

In Bratislava two experts talked about the merits and challenges' for publishes and readers that come with publishing in OA. Their talks are summarised in the following paragraphs.

2.1 Trends: the Open Access publishing model

Representatives from Open Access Scholarly Publishing Association (OASPA) and openaccess.net presented their expert views on the OA publishing model and discussed consequences and considerations of the models for publishers. More information on OA issues is available on the organisations' websites[4].

[3] Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003) http://oa.mpg.de/openaccess-berlin/berlindeclaration.html
Budapest Open Access Initiative (2002). http://www.soros.org/openaccess/read.shtml
[4] OASPA - http://www.oaspa.org/
openaccess.net - http://www.open-access.net/de_en/homepage/

The following definition for OA is commonly used:

- No subscription or license required to access the electronic edition of the journal
- Licensing agreement that allows free use and re-use (downloading, sharing, printing copies, use of tables and figures, possibility for text mining, etc.) at least for non commercial/ scholarly purposes

The talks stressed that OA brings the electronic publishing to another level and introduces to us a new world with new publishing trends. Currently electronic research journals still look like paper versions, using the article as a central unit. In the traditional subscription model knowledge is formulated in terms of property. Sutton suggested we look at knowledge as a network or as an infrastructure for data. According to her property claims on knowledge have created fences instead of being inviting to read. This is different for OA documents. Sutton highlighted that OA generates trends for alternative ways to measure impact. OA publications are read and used at an article level. Therefore information on the quality of the article is more relevant to people than the impact factor of the journal. According to her, the impact factor as calculated by the ISI and used in numerous evaluation contexts, could be seen as a tool rooted in the old world based on the journal as an entity and not specifying for the impact of the individual elements of the content.

Sutton envisaged that metrics based on a diversity of Web use statistics will become more important in the near future. An example of a new trends triggered by OA publishing is the open-access journal *Public Library of Science ONE* which started an "articles-level metrics project". The journal posts usage data, page views and citations from Scopus and CrossRef, social networking links, press coverage, comments, and user ratings for each of *PLoS ONE*'s thousands of articles (see also Dolgin, January, 2009). A metric that is able to count the overall Web usage offers new opportunities for scientific fields that use different types of OA publications like e-books, online series and online checklists, as is common practice in systematics. For instance OA and new impact measurement will in particular be useful for the systematic field to get insight in the uptake of checklists, taxonomic keys and field guides by different professional uses.

Besides these new trends and possible benefits of OA for systematics the following pro's and con's of OA were discussed.

The merits of publishing Open Access for scholarly information (more at openaccess.net):

- *Increase of visibility and impact of publications:* OA articles are more widely read than those which are not freely available on the Web. Depending on the field in question, OA articles achieve up to three times higher citation rates and they are cited much sooner (Lawrence Steve, 2001)
- *Promotion of international and inter-disciplinary cooperation*: OA increases collaborations and knowledge networks because it is stimulating as information becomes quicker available OA eases access to scholarly information for the South therefore decreases the global digital divide.
- *Model suits public funded organisations*: Through OA, the results of publicly funded research are freely available online and do not have to be bought (back) from the publishers by the scientific and scholarly institutions. The fact that the public sector has to fund research three times is often criticised. Public money is spent on: (1) researchers are paid by public money; 2) peer reviewers and 3) the

subscriptions of journals by libraries are paid for with public money)[5].

- Copyright: OA documents are *protected by copyright in the same way* as conventional publications. In publishing agreements with OA publishers or journals, authors typically grant only non-exclusive rights of use, thereby retaining the right to exploit their own work.
- "OA will broaden your landscape and not give your just a view through keyhole" (Karin Ilg-Hartbecke, openaccess.net)
-

Challenges of publishing Open Access for scholarly information:

- OA publications do not (yet) receive proper recognition in grant applications.
- *Traditional impacts metrics* do not always keep up with novel ways of publishing. OA journals are often new publications and not yet visible on the ISI radar because of their recent introduction. IF in general is criticised
- *Fundability*: someone somewhere has to pay for the work and the infrastructural services. The question OA models prompt is - should this be the libraries, the publishers or the authors? Several OA journals currently use an "author-pays model". This cost model involves a change in the financial burden on individual universities and research organisations. If authors rather than users have to pay for publication, then research-intensive organisations with high publication rates would have to pay more than those organisations who publish less.
- *Long-term availability, authenticity of OA documents*: authors and readers want to be sure that, over the course of time, the content has not been changed or corrupted and that the object was generated by the said author, at the said time. The question of document authenticity is therefore of great importance for repository operators and editors of OA journals. Document repositories can take measures to ensure the authenticity of archived documents for instance by asking a digital signature.

2.2 Tools and services

Electronic publishing and technological innovations go together. It is challenging for publishing departments and individual scientist working on a journal, to keep up with these developments. The meeting in Bratislava aimed to bridge this knowledge gap and inform participants about the latest developments that can help to improve access and discoverability of their journals. Representatives from different publishing platforms were invited to report to the publishing representatives on the services that are available for publishing activities. Here follows a short summary of the presentations and discussions on tools assisting to publishers[6].

2.2.1 CrossRef

CrossRef offers several services for scholarly publishers. It is one of the official DOI registration agencies[7] for scholarly and professional publications, including journals, books, and other content types. CrossRef

[5] A fourth debit item is the editing and type setting by commercial or non-profit publishers, see also Table 1.
[6] More information is available on the websites of the services they speakers represented. The slide shows of presentations can be downloaded from EDIT website.
[7] DOI is the identifier string that specifies a unique object (the referent) within the DOI System and is used for the Web to track content items (digital files, physical objects, abstract works, and articles).
http://doi.org/registration_agencies.html

was set up as a strategic organization, a not for profit association of primary publishers. CrossRef's basic assumption is that references are a key part of scholarly communication. Someone can click on a reference and immediately go off to the content - often another journal. Before, at the beginning of online publishing publishers ran into problems linking references because each online article would come from a different publisher. Publishers started to sign bilateral linking agreements with one another, creating codes where they would figure out the URL schemes and this was all a lot of work and resulted in an increase of broken links, often referred to as "link rot". As more and more publishers started going online there were more and more broken links. This was not good for end-users and the standing of online publications.

CrossRef prevents link rot. Their mission can be best explained by a post office box analogy. If a person moves he can change his address in one place or just go to the post office and pick up the letter and then one does not need to worry about the letter going straight. For science e-content CrossRef is the post box and keeps a directory on where the content of its members is. To track the content a DOI is used that gets read through the central directory of CrossRef and than that can be linked across to publisher's site and if it moves to a different URL it will still link. One of the benefits for the publishers is that they just have to keep the URL up-to-date in one central directory. So CrossRef keeps metadata records but not the content itself.

CrossRef's role is to remind publishers to keep their links up-to-date and track and check if and where links break. They use an annual membership fee or a one time fee option. They accept DOIs for conference proceedings, technical reports, thesis's, back files, databases and database components. They offer collective arrangements, for platforms of organizations like BioOne and OASPA they count as one member. Other services are: CrossRef works with open access publishers, with subscription publishers.

- *CrossRef Cited-by Linking:* a service that allows publishers to discover how their publications are being cited and to incorporate that information into their online publication platform – in exchange for the metadata listing of the works that *their* publications cite.
- *CrossCheck:* a plagiarism detection tool filtering academic content screened against full-text literature

2.2.2 BioOne

BioOne is an aggregated database of 160 journals in the biological, ecological, and environmental sciences and offers free services for independent publishers (providers) to get their journals online. Over 1200 institutions worldwide subscribe to BioOne, with an additional 2500 institutions receiving free access through developing world programs. Journals interested in participating in BioOne will be evaluated on criteria like an Impact Factor (IF), peer-review, a regular publication schedule, and an international focus and editorial board. BioOne publishers will profit from *strategic and financial benefits*. For example, BioOne fully contributes/offers:

- Global dissemination and exposure for participating publications
- Free conversion to XML from articles PDFs
- CrossRef membership and ongoing deposit of article DOIs
- Revenue share for ppublishers based on number of pages deposited and full text downloads
- Surplus share for publishers if organizational surplus
- Optional ancillary revenue programs including pay-per-view and Copyright Clearance Centre participating
- More – see "Benefits to Publishers" on the BioOne website, here: http://www.bioone.org/page/publish/benefits

2.2.3 IngentaConnect

IngentaConnect is an aggregated platform that provides access and e-commerce models and allows publishers to go online and manage and sell their publications. IngentaConnect delivers 14.000 publications, approximately 60% are peer-reviewed journals, the remainer are conference proceedings, reports, statistical information and monographs. Around 25.000 institutions are registered on IngentaConnect to access online content. They offer different arrangements for publishers. They can be the sole hosts and the primary platform for publishers so their content is only on IngentaConnect. But they have also arrangements with bigger publishers of whom they are dual hosts they have the primary source of the content they act as a gate way to send traffic to them. This also helps business continuity if something happens to their main system they can point the link to IngentaConnect. Additionally IngentaConnect offers to publishers among other:

- a content management portal
- management of subscription facilities
- advise, help building publishing strategies
- user statistics
- dissemination
- content enhancement/branding filters ByDesign
- For libraries: possibility to build collections/communities [allowing specialist libraries to expand their holdings in specific subject areas at consortia prices. Free trials may also be available, enabling libraries to assess the value of a collection before licensing] also more convenient to manage for libraries]
- Fees for publishers are available on request

2.2.4 uBioRSS and uBioRSS.Novum

David Remsen presented two tools that are developed under the uBio project that can help journals to increase the visibility and dissemination of their articles. The tools are based on the RSS feed technology. RSS - Really Simple Syndication feeds benefit readers who want to subscribe to timely updates from favoured websites or to aggregate feeds from many sites into one. By installing RSS reader software (free ware) on the journals website, the journal feed will be harvested by the uBioRSS reader and parsed for new nomenclatural declarations such as new species or new combinations. Every follower who signed up for uBioRSS can specify on what feed or taxon groups he/she want to stay informed will send them - every time (weekly) when something gets published on their taxon of interest - an email with the meta data of the article the taxon name appeared in (title, abstract, author, journal name and vol). These applications make it easy for researchers to stay informed and offer journal publishers an enhanced dissemination tool.

3 Challenges of electronic publishing of scholarly information

As discussed in the previous sections electronic publishing has a lot to offer to NHIs. But new uses and technical developments also bring new questions for the established conventions in scientific publishing. On the first sight going e-only seems attractive for scientific publishing departments. It reduces the production costs and publication time by cutting out the print process. However, the integrated costs of e-publications are not yet well studied. Electronic publishing services and IT applications are not free and text formats and text layout needs to be adjusted to the online criteria. Going electronic asks for different skills of publishing staff and raises specific questions that have to be studied before paper copies can replaced. In the Bratislava meeting three barriers of publishing e-only were identified.

First, the journals published in natural history are long-standing titles with a long shelf life. This means that the sustainability of the online support and the access to the journal archives has to be studied before going electronic. The second issue concerns the library exchange programmes. Going e-only would mean that the institutional libraries would not be able to acquire publications for "free" as they are used to, because institutions that go e-only cannot provide their exchange partners with a hard copy to exchange, except if they are able to give out free online access. Moreover, it is necessary to define what "exchanging for free" means because the exchange programmes do have a cost to institutions. The third barrier for going e-only is the current use of nomenclature rules in systematics. Until today nomenclatural descriptions have to be printed in order to be valid.

Three experts shed light on these barriers. Their talks are summarised in the following paragraphs.

3.1 Electronic Archiving : Biodiversity Heritage Library for Europe

Biodiversity Heritage Library for Europe (BHL-Europe) is an initiative funded by the European Commission to improve the interoperability of European biodiversity digital libraries. It will not carry out or fund the scanning activities but will create an infrastructure to support and optimise scanning activities by libraries of NHIs. Next to books also scientific journals are an important source. By sharing metadata or full content with BHL-Europe publishers have an additional communication channel where their content can be searched at word and phrase level. All digitized content will be held in one place with clear bibliographic structures: journals, online by title name, year, volume, issue and article. Because BHL-Europe is covering biodiversity literature their portal enables taxonomic journals to reach out to a wider audience and to be searched for by everyone looking for biodiversity information. BHL-Europe provides a long term e-storage structure. BHL-Europe member institutions concentrate in their efforts on opening up access to older literature[8]. However, there is much to learn from this process for contemporary publishing practices, such as embed metadata into PDF, etc.

3.2 Library exchange programmes, example from NHML

Library exchanges programmes have a long standing tradition among NHIs. The Natural History Museum, London (NHML) for instance has been doing exchanges for over 100 years and about 35% of its current library titles are obtained by bilateral exchanges. These titles are a significant addition to what comes in by paid subscriptions with commercial publishers. If the library had to purchase these titles it would have costs the NHML between £200,000) and £300,000 (€219,358 and €329,037[9]) per year. Although the exchange programmes are cheaper than purchasing access it is not a free service. For instance, the NHML allocates £65,000 per year (€71,291) to cover personnel costs of managing the programme and shipping costs of its library exchange programme and if an institution is printing its own journal s these costs also need to be added.

Trends observed at the NHML: the total number of hard copy exchanges has dropped with 9%, whereas the electronic exchanges have increased over the latest 6 years. If this trend continues, within 5 years 66% of the exchanges will be e-exchanges (Fig. 1). If this is a trend everywhere in Europe, then this raises an issue for developing countries who largely depend on hard copies because the network capabilities in a number of countries are still poor. The experience of NHML is that as an institution is working with a commercial publisher, the publisher has been willing to give out a number of additional passwords to be used by "friends of the institution" – as defined by the NHML

[8] Mostly for pragmatic reasons related to IPR

[9] Based on Euro foreign exchange reference rates of 0.91175 as at 16 October 2009 European Central Bank

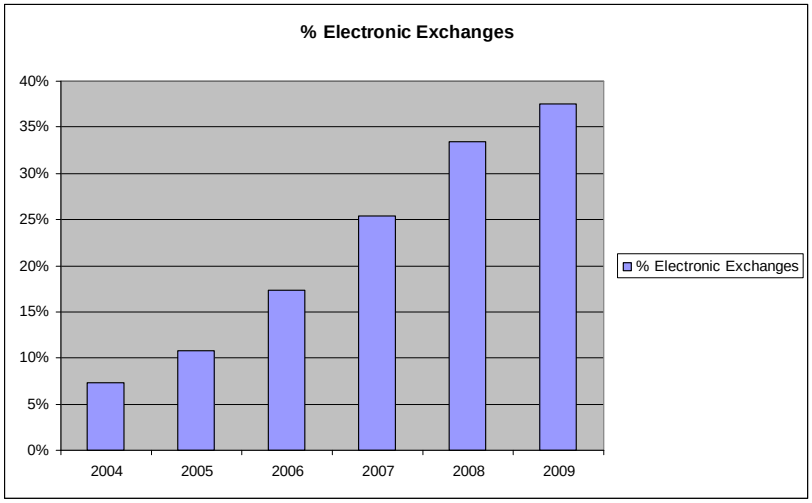

Figure 1. Increase of electronic exchanges 2004-2009, Natural History Museum, London

The presentation generated a discussion on the following items: trend to move to e-publishing only; but what will be the affect be for the exchange programmes? How should NHIs respond? How can NHIs continue to share their scientific output and guarantee free access to institutions in developing countries? If NHIs want to take action to protect the exchange programmes a declaration/agreement will be needed. Use the EDIT to drive the discussion agenda?

3.3 Nomenclature issues

The *International Code of Zoological Nomenclature* (ICZN) and the *International Code of Botanical Nomenclature* are the systems of rules and recommendations adopted in order to promote stability and universality in the scientific names of animals and plants and to ensure that the name of each taxon is unique and distinct. Nomenclature is a procedure of assigning names to the kinds and groups of organisms listed in a taxonomic classification and is based on rules. Taxonomy is different from purely process science (e.g. medicine) where literature older than 5 years is essentially obsolete. Reference to original work, accessible primary literature in its original unaltered format is the first step to taxonomic description.

The scientific names of species are crucial to effective global communication about biodiversity, and hence its use for conservation. The ICZN rules governing availability of species names require publication in a sustainable medium. To date, "durable medium" has been interpreted as including paper and 'hard" digital media such as CD-ROMs, but this has become increasingly questioned as electronic publication have become more common. To address this issue the ICZN is considering an amendment to the Code that will permit electronic publication of new names and nomenclatural acts. A proposed amendment has been communicated in several taxonomic journals (e.g. ICZN, 2008). For the zoological code the process for change consists of a year-long period community input, after which a final amendment will be drafted and voted upon by the Commission. A summary of the amendment issues are:

- Electronic-only publications should be allowed, if mechanisms can be found that give reasonable assurance of the long-term accessibility of the information they contain.
- Some method of registration should be part of the mechanism of allowing electronic publication of names and nomenclatural acts.
- Physical works that are not paper-based (e.g. CD-ROMs, DVDs) should be disallowed.

The botanical nomenclature is regulated by the current edition of the *International Code of Botanical Nomenclature* which is the Vienna edition published in 2006. A name of a taxon has no status under the Code unless it is validly published. The article 29.1 states that "publication is effected, under this *Code,* only by distribution of printed matter (through sale, exchange, or gift) to the general public or at least to botanical institutions with libraries accessible to botanists generally". At this stage electronic publication is thus explicitly not allowed. As the Code is published each 6 years, the next version is due to be published in 2012. For now, no modification is being considered so as to allow the validation of a species which would be published otherwise than print. A start to go electronic in botany would be to develop a botanical global name register. Lessons could be learned from Fungoforum and Zoobank and from the changes now proposed for the Zoological code.

4 Good practices

One of the objectives of the meeting in Bratislava was to create an opportunity for publishing and library representatives to exchange the challenges they meet but also to discuss new opportunities, good practices, and solutions that they apply. Below is a summary of two examples.

4.1 New print technologies

Gina Fullerlove from the Royal Botanic Gardens, Kew (RBGK) talked about their experience with digital printing and 'print on demand' services. In addition to two scientific journals the RBGK publishes up to 20-30 new book titles each year. RBGK was the only institution present at the meeting currently using digital print technology for some of their book titles. They have currently 550 titles in print of which 70 are printed digitally. Their experience is that digital print works well for, black and white publications with a relatively low print run (not more than 400) and for some specialized field guides, where there is a low demand but where there is a need for printing in colour. The field guides are in a transitional phase as it is anticipated that as technology develops these publications will be used in preference on mobile devises in the field. Books are printed from pdf files with data often exported from databases.

Lighting Source[10] is one of the 'print on demand' (POD) digital printers that RBGK works with and who offer a combined print on demand and sales fulfillment service A customer can order a book on the Web e.g. via Amazon. Lighting Source both prints the book, a single copy at a time and then ships the order. They take a commission and transfer the rest of the revenue to RBGK on a monthly basis. For the titles printed by Lighting Source, RBGK is not involved in the sales side of the process and more importantly does not have to be concerned about warehousing of printed copies. Print on the demand is also available for journals and in particular can be useful for online journals where only a very small number of paper copy deposits are required for nomenclature regulations.

Yet shifting to digital print needs an investment from a publishing department and individual staff. For instance, finding a good quality printer that can do the job as you would like them to may turn out not to be easy, according to RBGK experiences. During the last years numerous printers have shifted to digital printing, yet because the technology is so new, have not been able to recruit experienced, skilled people to ensure the output of high quality product. In addition, there are some design and layout issues one has to be aware of – which work well in traditional print but will cause problems for digital print. For instance complex designs, and particularly heavily inked borders on pages, and images that are 'bled-off' the page may cause digitally printed pages to swell and distort bindings. Therefore intensive, knowledgeable, production monitoring of quality control and consultation with the printer is required to get good results.

[10] http://www.lightningsource.com/

One short run digital print success story was for a book that had been out of print for several years: *The Genus Cypripedium*. Antiquarian copies were for sold on the Web for £200, so there was clearly a demand. RBGK got hold of an original copy, scanned it and using digital print brought back on the market and into the literature (for £60). The quality of the images turned out to be excellent, even better that the original edition.

4.2 Scientific publishing and Intellectual Property rights

A recurring issue in scholarly publishing is intellectual property rights (IPR) of publications. Not only because of the impact of new technology on copyright but also because many of the articles involve complicated copyright questions such as: does an English author who has published in a French journal an article in which he reproduced a drawing previously published in a Dutch journal by a German author could re-use its own article in a Spanish website, without asking any permission? Providing that your answer is no: To whom should he ask the permission?

Willi Egloff (Plazi) had accepted the difficult task to give an overview on European copyright as far as scholarly publishing is concerned. In most countries, copyright protects works of arts and literature, which does not depend on quality or value. Copyright protects the form of presentation, not the content. It does not protect taxonomic information, but articles and books, as far as they are original. Except in UK where copyright is not only guaranteed for works but also for "typographical arrangement of published editions". Nevertheless, keep in mind that this is the exception, not the rule.

It does not matter if there is a copyright sign on the text or not: a text or an illustration that does not qualify for a work is not protected by copyright, even if there is a huge copyright sign on the publication. In most European countries 70 years after the author's death, the protection expires. For every publication that does qualify as a work and whose protection has not expired, there is a copyright protection. This means: you need an authorisation if you want to make use of it. You can get this authorisation by two means: by an individual use of the work not if you only consume it. It means one is allowed to read a book, see a film or listen to music but one is not allowed to copy it, distribute it, and make it available to the public without the right holder permission. Now, things have changed in the digital world: reading an electronic article or book is copying it. Indeed, when one downloads an article from the net in order to read it, one copies the files. So, what was consumption of works in the traditional scientific world becomes use of works in digital and audiovisual procedures. And for this use, you would need an authorization, which is nonsense if you think of the fact that the purpose of scientific publishing is to disseminate the results of scientific research to the largest possible audience. According to Willi Egloff, the best way to conciliate these modern forms of publishing with scientific research would be to introduce legal licences for research purposes.

The EU-Directive on the harmonization of copyright in the information society contains two or three of such legal licences for research purposes. Section 5, par. 3 allows the member states expressly to introduce an exception for the use of works for research purposes, as long as this research activity has a non-commercial character. Unfortunately, this possibility is not always transferred into national law. You can find a general exception in the copyright laws of France, Malta and the Nordic countries.

His recommendations are of different forms:

- exercise political pressure in order to have national copyrights act completed by a general exception for any use of works for research purposes;
- publish within non-commercial publishers. Make your publications available via open access in order to not restrict their re-use– except for others' commercial use;
- launch any common journal in a country that has a far-reaching legal licence for scientific publishing, such as France, Malta or the Scandinavian countries. And

more generally, make use of the fact that, even if copyright is internationally harmonized, there are still important differences between the copyright legislations of different countries. So organise your international research work, your publications and the information exchange in order to avoid as many copyright problems as possible.

Discussion

The format of the meeting in Bratislava was a combination of plenary presentations and discussions. Some issues were brought up several times and some generated a lively debate. A summary of the main discussion items is listed in what follows.

In several talks and during the discussions the importance of decreasing fragmentation of access to taxonomic journals and other taxonomic literature was clearly highlighted. The representatives agreed that improving collaboration between institutions on publication activities would be beneficial for the visibility and discoverability of taxonomic publications. The launch of a community mailing list and yearly meeting(s) were said to make a positive contribution to the publishing problem solving and decision making procedures.

In the light of future collaboration of scientific publishing staff of different institutions Koen Martens (RBINS) presented a collaborative publishing project under the name Towards a European Journal of Zoology. The idea addressed the launch of a joint journal in descriptive taxonomy by merging some of the current zoology journals published by EDIT institutions. He argued that there is a need to have a place where descriptive work can be published, that this would improve the level of professionalism in the publishing process of small journals, increase visibility and offer the possibility for obtaining an ISI impact factor, would offer a true non-commercial alternative to the commercial existing journals and would have the potential to better fulfil the mission of dissemination of scientific information. It was stressed that such a journal would send a strong, political message coming from NHIs about the relevance of descriptive taxonomy. Ideally the journal should follow the format of an online, OA journal.

Representatives at the meeting agreed in a first phase to study the idea of creating a joint journal on descriptive taxonomy and in a second phase to fill in the business model details if the directors said yes to the principal idea. But not after several participants had stressed that we should take into account the negative implications of merging journals for:

- the library exchange programmes
- the possible loss of individuality and visibility of institutions who would lose the opportunity to present themselves as centres of expertise; use of journal as business card, to be distinctive

Second prominent subject of discussion focused on the possible implications of electronic publishing, OA publications and a possible merger of journals – on the existing library exchange programmes. The concern was that electronic titles, OA and merging journal titles would put an end to the exchange programmes. All institutions represented in the meeting confirmed they participate in a journal exchange programme but only a few monitor the costs of their institutions' participation. This makes it difficult to predict the consequences and the costs for institutions if the exchange programmes were to change. Additionally, it was stressed that many books and journals obtained by the exchange programmes were never consulted and at the same time take a lot of storage space. Yet it was added that for scientific reasons it is relevant to keep a hard copy of each title in circulation. It was suggested that it would be good to have a coordinating mechanism tracking which institution keeps copies of what titles. This should

prevent duplication of hard copies of little consulted titles and at the same time guarantee and facilitate access to the physical volumes[11].

Additionally, it was brought up in the discussion that exchange programmes are important for institutions in developing countries and OA journals are not always a good alternative because of unreliable Web connection or snail speed bandwidth in some countries (views were divided on this issue if this was indeed the case or not). Altogether a number of participants had the feeling that the traditional exchange programmes for journals would disappear in the future and that hard copy journals would be replaced by (OA) online journal exchanges. If this was to happen, institutions with difficulties to access online journals should still be able to continue to receive paper versions of the titles, these could be printed on demand and be given away. Funding for giving away copies would become available because of the costs saved by not having to manage the exchange programmes anymore. However, because in the current situation NHIs still publish paper journals (in the EDIT network 62%) and the shift to online publishing still has to be made, the full impact on the exchanges of going e-only with journals is not yet clear. To be able to foresee the consequences for libraries it was agreed that all institutions, present in Bratislava, would investigate the number of titles send out and received in exchange, and the number of exchange partners they work with, and try to estimate costs and number of man hours applied to manage (tracking, accounting, and shipping) their institutions' exchange programme .

A third topic discussed in Bratislava was the question "do taxonomic journals published by NHI need an ISI impact factor[12]?" There were very many views on this among the participants. For instance it was highlighted that a number of journals published in the EDIT network are struggling to get an ISI IF and are threatened with to disappear if they are not able to obtain one in the near future. One of the participants stressed that the ISI IFs are creating a vicious circle. For the reason that some taxonomic journals might disappear because they do not have an IF. At the same time these journals are unable to attract the highly cited articles they need to obtain an IF because researchers do not want to publish in journals without an IF. Also it was mentioned that the overall access and availability to taxonomic information was worrisome and likely to be related to the weight given to publications in high impact journals. Someone brought up that whole discipline of taxonomy is disappearing from universities and that the main reason is that taxonomists are not publishing enough in high IF journals. Universities are weighting publications and articles with an IF and those lower than 2 are not even counted. Someone else suggested that the situation was rather the following: "taxonomy is not considered as a proper science and therefore less and less people do it". In that case a low IF is the result of that situation and not the cause. Again another view was that low IF for taxonomic journals results from the way the IF formulae is designed (see footnote 12). Different from other disciplines taxonomy has a long shelf life (+/- 25 years). Unless the ISI changes its formulae for the IF and adds a computation of citations over 25 years or more - the IFs will not represent an appropriate indicator of impact of a (descriptive) taxonomic journal. The question discussed was if there are perhaps alternatives, other impact measures that suit taxonomic publications better.

Then again, as one of the participants emphasised "taxonomists are not going to change the way they do things to increase their IF because this does not make sense for their field". Currently the IFs scores in

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[11] This issue was earlier discussed within EDIT and a proposal to develop a coordinating protocol, a master catalogue, will be studied by BHL-Europe.

[12] In a given year, the impact factor of a journal is the average number of citations to those papers that were published during the two preceding years. Now also an alternative measure of 5 years is calculated by Thomson. Taking in consideration a longer impact period does more justice to taxonomic publications but 5 years is still not enough as taxonomic articles are cited over a much longer period with an average of 25 years with exceptions going back to 250 years.

the field are obtained by people who do phylogenetics, yet NHIs are also conducting descriptive taxonomy, publish conservation assessments and provide information to the general public, something IFs have nothing to do with. Articles in high ranking IF journals are only one of the products of NHIs and therefore only one of the things that should be measured to get a good view of the impact of taxonomic publications. One of the invited speakers suggested not to focus too much on getting IF factors for journals as in an online publishing environment journals as entities will become less and less important and the individual articles and data will become the central entities for measuring impact of the future. One if the conclusion of the discussion was that not a IF itself was the problem but the fact that that they are so often used as the only impact indicator (also by directors and peers), while there is a general agreement among taxonomists that the indicator is very limited in quantifying the quality and impact of the field as a whole.

In short, the current ISI IFs were generally seen as a burden and not as an appropriate impact measure for taxonomy. The presentations of OASPA and CrossRef had highlighted the possibility of applying alternative Web metrics to measure impact of taxonomic publications. It was emphasized that, even though, alternative impact measures cannot be used to compare impact of taxonomy with research from other fields – it is important to be able to demonstrate to funding bodies, the general public and to peers where and how taxonomic data is used.

Conclusion and next steps

The main issues that rose in the presentations and the discussion of the meeting in Bratislava have been listed below:

- International collaboration and exchange of expertise between publishing representatives in NHI is crucial. It will help to increase access and to control of (part of) the dissemination of taxonomic research.
- Not only as producers but also as consumers of taxonomic information it is in the interest of NHIs to continue to provide access to information under their own set of conditions that are favourable to the research of the field.
- Among taxonomists there is a demand for a journal dedicated to descriptive taxonomy. A joint published journal, by several EDIT institutions will send a strong political message on the importance of descriptive taxonomic research.
- A merger of existing journals would improve the visibility of taxonomic information that is now published in small journals that are not easy to discover. Yet a merger of journals will take away from institutions one of their communication channels and it will affect the current library exchange programmes.
- In the majority of institutions the costs and benefits of the library exchange programmes are not (yet) transparent enough to make a proper cost benefit calculation on the effect of going all-electronic.
- Adopting the OA publishing model would fit the publishing mission of NHIs but will have consequences for current cost models and library exchange programmes.
- Also in the future NHIs should guarantee free access to their journals for institutions in the South. This service is (and should continue to be) one of the core missions of the NHIs in the developed world.
- Electronic achieves of taxonomic literature will facilitate access and create storage space, however it is important to keep (some) hard copies of each title in

circulation. A coordinating mechanism is needed to prevent duplication and guarantee access.

- Obtaining an ISI IF is important for taxonomic journals because this makes them more attractive for researchers.
- At the moment the ISI IF is the most common used impact measure. Quantifying the impact of taxonomic publications is important, but not necessarily exclusively by using the ISI IF. Also criteria like: means of dissemination; accessibility and publications speed are important indicators for researchers to help them decide where to publish their work.
- Currently the ISI IF is a journal based measure, though measuring the impact at the level of articles will become more important and publishing online offers opportunities to develop such an article-based metric[13].
- Useful Web metrics exists to measure the impact of online taxonomic publications. Editors and institutions have the possibility to choose those that suite them best. These could be used next to or instead of the ISI IF. Generic Web metrics will provide insight in the impact of taxonomic information in a wide variety of fields in and outside science.
- Digital printing offers possibilities in the transitional phase moving from paper to online publications and for publications with low print-runs, but quality issues and costs benefits should be studied for each publication individually.
- There are numerous electronic tools and services available that can help journals to improve their online visibility and discoverability.

Recommendations

Based on the meeting in Bratislava the organisers would like to make to following recommendations related to access, dissemination and discoverability of taxonomic information published by NHIs.

To publishing representatives in natural history institutions

- Reinforce collaborative partnerships in order to constitute a network which can face the technological change and weight on strategic decisions to promote dissemination of scientific information in natural history sciences.
- Go online, go online, go online
- Make your journals visible and easy accessible electronically by using services that are out there and suit your publishing model (e.g. BioOne, IngentaConnect, others etc.)
- Make the content of your journals easy and sustainable citable by using DOIs
- Guarantee sustainable, long term access make sure this is covered if working with commercial publishers.
- Take measurement of content impact into your own hands by integrating a web statistics tool, or using impact services provided by BioOne, IngentaConnect or CrossRef, others.
- Communicate and involve the library in your institution's in decision making and development of publishing strategies

[13] See for instance the Plos One article-metric project http://article-level-metrics.plos.org/

- Use the expertise of the network, participate in meetings, mailings list, post your questions, share your experiences.

For libraries in NHI

- Administrate journal exchanges, track records and costs and benefits for the institution
- Support the development of a protocol "master catalogue" to coordinate access to hard copies and to avoid duplication

To EDIT directors

- Encourage and facilitate financially and politically the collaboration between publishing and library staff in your institutions.
- Encourage and facilitate financially and politically that your institutional publications go online and use the appropriate platforms and tools to increase dissemination and discoverability of the journal content.
- Encourage and facilitate financially and politically the use of a non-commercial and/or OA publishing model to be able to control, access, dissemination, and IPR that serve best the research interests of taxonomy.
- Encourage and facilitate financially and politically the implementation of Web metrics to measure the impact of taxonomic information beyond high impact journals in order to get a broader view on the impact of taxonomic data has in science and on society in general.

*

Acknowledgements

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For questions on the meeting or the meeting report, please contact the organisers:

Laurence Bénichou
Editorial manager, Muséum National d'Histoire Naturelle
benichou@mnhn.fr

Daphne Duin
EDIT – Stakeholder Liaison Officer
duin@mnhn.fr

References

Rohe, T. A. (1998). How does electronic publishing affect the scholarly communication process? *The Journal of Electronic Publishing, 3,* 3, pp . [DOI 10.3998/3336451.0003.308]

Steve, L. (2001). *Online or invisible*? NEC Research Institute. http://citeseer.ist.psu.edu/online-nature01/- Retrieved August 20, 2009,

Dolgin, E. (2009, January 19). New impact metric. *The Scientist*. Blog post, http://www.the-scientist.com/blog/display/55343/ - Retrieved August 20, 2009

European Commision (2006). Study on the economic and technical evolution of the scientific publishing markets in Europe. *2nd report.* URL: http://ec.europa.eu/research/science-society/pdf/scientific-publication-study_en.pdf Retrieved August 20, 2009

International Commission on Zoological Nomenclature (2008). Proposed amendment of the *International Code of Zoological Nomenclature* to expand and refine methods of publication. *Zootaxa* 1908, pp. 57–67. *URL: http://www.mapress.com/zootaxa/2008/f/zt01908p067.pdf* Retrieved 11October, 2009

European Distributed Institute of Taxonomy (EDIT) (2008). Report of the first EDIT meeting on Scientific Publishing by NHIs. URL: http://www.e-taxonomy.eu/files/C4.3.6_report_on_scientific_publishing_in_EDIT_institutions.pdf

Houghton, J., Rasmussen, B., Sheehan, P., Oppenheim, C., Morris, A., Creaser, C., Greenwood, H. Summers, M., & Gourla, A. (2009). *Economic Implications of Alternative Scholarly Publishing Models Exploring the costs and benefits.* JISC EI-ASPM Project. http://www.jisc.ac.uk/media/documents/publications/rpteconomicoapublishing.pdf Retrieved October, 19, 2009.

Wellcome Trust (2004). Costs and business models in scientific research publishing. http://www.wellcome.ac.uk/stellent/groups/corporatesite/@policy_communications/documents/web_document/wtd003184.pdf Retrieved October, 19, 2009.

ANNEX 1 - Acronyms

BMC	BioMed Central
CABI	CAB International
DOI	Digital Object Identifier
EDIT	European Distributed Institute of Taxonomy
GBIF	Global Biodiversity Information Facility
ICZN	International Commission on Zoological Nomenclature
IF	Impact Factor
IPR	Intelectual Property Right
ISI	ISI Web of Knowledge
MfN	Museum für Naturkunde
MNHN	Museum National d'Histoire Naturelle
NHI	Natural History Institution
NHML	Natural History Museum, London
OA	Open Access
OASPA	Open Access Scholarly Publishing Association
POD	Printing on Demand
RBGK	Royal Botanic Gardens, Kew
RBINS	Royal Belgian Institute of Natural Sciences
uBio	Universal Biological Indexer and Organizer
XML	eXtensible Markup Language

ANNEX 2 – Meeting Agenda

Agenda on
2nd EDIT meeting
Scientific Publishing in Natural History Institutions
Exchanging know-how, dissemination and access to **taxonomic journals**

June 22-23, 2009 Bratislava, SUZA Conference Centre
Hosted by the Comenius University, Bratislava

TIME	MIN	ITEM		
			Lunch served 12:30-13:15 RESTAURANT	
			DAY 1	
			START 13:30 meeting room: MALA AULA	
13:30	**SESSION 1**		**INTRODUCTION - setting the stage** **Chair: Gina Fullerlove**	
13:30	10	1	Welcome - what is EDIT ?	Simon Tillier, MNHN
13:40	35+5	2	Scientific Publishing in Natural History Institutions	Laurence Bénichou & Daphne Duin, MNHN
14:20	**SESSION 2**		**Electronic publishing – Open Access** **Chair: Gina Fullerlove**	
14:20	20+5	3	Open Access Publishing: models, merits, and challenges	Karin Ilg-Hartbecke open-access.net
14:45	30+5	4	Open Access, trends and challenges from a publisher's perspective	Caroline Sutton, OASPA
15:20	20+5	5	BioMed Central- Scientific publishing and the creative commons licence	Bryan Vickery, BMC
15:45	30		COFFEE/TEA BREAK	
16:15	**SESSION 3**		**Electronic publishing – barriers and solutions** **Chair: Gina Fullerlove**	
16:15	10+5	6	Library Exchanges – Impacts of e-Publishing	Graham Higley, NHML
16:30	20+5	7	Nomenclature in zoology “electronic publications”	Ellinor Michel, ICZN
16:55	20+5	8	Nomenclature in botany “electronic publications”	Paul Kirk, CABI
17:20	30+5	9	Biodiversity Heritage Library for Europe: Improving the interoperability of European biodiversity digital libraries	Henning Scholz, MfN
17:55	20	10	**Summary Day 1 - Graham Higley**	
18:15			**Day 1 closes**	
20:00			**Dinner in city centre**	

DAY 2 – START 9:00

meeting room: MALA AULA

TIME	MIN	ITEM		
9:00	**SESSION 4**		**Electronic publishing – tools and services** **Chair: Graham Higley**	
9:00	20+5	11	BioOne at Ten Years: An Update on the Initiative's Achievements and Future Plans	Steve Smith, BioOne
9:25	20+5	12	IngentaConnect and the semantic web	Natasha Oostergetel, Publishing Technology
9:50	20+5	13	uBio	David Remsen, GBIF
10:15	20+5	14	CrossRef: Scholarly Citations and Content Visibility Online	Ed Pentz, CrossRef
10:40	30		COFFEE BREAK/TEA BREAK	
11:10	**SESSION 5**		**Sharing publishing practices** **Chair: Graham Higley**	
11:10	20+5	15	Scientific publishing and copyright	Willi Egloff, Plazi
11:35	20+5	16	RBGK – printing on demand	Gina Fullerlove, RBGK
12:00	20+5	17	Towards a European Journal of Zoology: a joint effort in taxonomic publication	Koen Martens, RBINS
12:30	90		**LUNCH BREAK - RESTAURANT**	
14:00	**SESSION 6**		**Discussion + Conclusions + Recommendations** **Chair: Gina Fullerlove** ▪ Launching a joint taxonomic journal? ▪ Other discussion topics (to be decided) **Meeting closes +/- 16:00** **Reception 16:00-17:00 - Foyer**	

ANNEX 3 – List of participants

	First Name	Name	Organisation
1	Laurence	Benichou	Muséum National d'Histoire Naturelle
2	Vanessa	Demanoff	Muséum National d'Histoire Naturelle
3	Steven	Dessein	National Botanical Garden of Belgium
4	Vincent	Detienne	Muséum National d'Histoire Naturelle
5	Daphne	Duin	Muséum National d'Histoire Naturelle
6	Willi	Egloff	Plazi
7	Gina	Fullerlove	Royal Botanic Gardens, Kew
8	Isabelle	Gerard	Royal Museum for Central Africa, Tervuren
9	Andras	Gubanyi	Hungarian Natural History Museum
10	John	Harris	Royal Botanic Garden Kew
11	Graham	Higley	National History Museum, London
12	Karin	Ilg-Hartbecke	open-access.net
13	Rudy	Jocqué	Royal Museum for Central Africa
14	Paul	Kirk	CAB International
15	Zoulika	Labghiel	Muséum National d'Histoire Naturelle
16	Denis	Lamy	CNRS - Muséum National d'Histoire Naturelle
17	Ruth	Linklater	Royal Botanic Gardens, Kew
18	Karol	Marhold	Institute of Botany, Slovak Academy of Sciences
19	Julien	Marmayou	Muséum National d'Histoire Naturelle
20	Koen	Martens	Royal Belgian Institute of Natural Sciences
21	Angela	Matuszka	Hungarian Natural History Museum
22	Ellinor	Michel	International Commission on Zoological Nomenclature
23	Michèle	Ballinger	CNRS - Muséum National d'Histoire Naturelle
24	David	Middleton	Royal Botanic Garden Edinburgh
25	Natasha	Oostergetel	Publishing Technology
26	Eva	Patzschke	Museum für Naturkunde, Berlin
27	Ed	Pentz	Crossref
28	Laszlo	Peregovits	Hungarian Natural History Museum
29	David	Remsen	Global Biodiversity Information Facility
30	Henning	Scholz	Museum für Naturkunde, Berlin
31	Steve	Smith	BioOne
32	Arnold	Staniczek	Staatliches Museum für Naturkunde Stuttgart
33	Eduard	Stloukal	Comenius University, Bratislava
34	Caroline	Sutton	Open Access Scholarly Publishing Association
35	Simon	Tillier	Muséum National d'Histoire Naturelle
36	Godard	Tweehuysen	University of Amsterdam - Zoological Museum
37	Nicole	Voogd, de	Naturalis