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International Working Group on Taxonomic Databases

International Union of Biological Sciences
Taxonomic Database Working Group (TDWG)

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TDWG Newsletter

IUBS Taxonomic Databases Working Group
Number 11 / June 2001
ISSN 1012-7607

TDWG Web page: http://www.tdwg.org

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TDWG Meetings

TDWG 2001:
The 2001 meeting will be organised by the Royal Botanic Gardens Sydney, and held in Sydney from 8th to 11th
November in conjunction with several related meetings such as Species 2000 and IOPI, forming a "Biodiversity
Knowledge Management Forum".

The proposed overall theme for the TDWG meeting is '**Biodiversity Information on the Web: Making it Work**',
and current plans are:
Thursday 8th November 5 to 7pm - registration, followed by mixer reception (jointly with participants from
Thursday's Global Species Databases workshop).
Friday 9th November - plenary sessions and business meeting.
Saturday 10th November - subgroup sessions, followed by TDWG dinner.
Sunday 11th November - final morning session of 2001TDWG meeting.

For further, more up-to-date information on the TDWG meeting, and the whole Sydney "bioForum", please see
the"bioForum" web site http://plantnet.rbgsyd.gov.au/bioforum/index.html
(there is also a link through the TDWG web site http://www.tdwg.org). Announcements will be also made through mailing lists such as the TDWG list and Taxacom.

TDWG 2000 - The Highlights:
The 2000 meeting was held at the Senckenberg Museum, Frankfurt, Germany from the 10th - 12th November, 2000.
It was well organised by Michael T□rkay of the Senckenberg and Walter Berendsohn of the Botanic Garden and Botanical Museum Berlin-Dahlem, with the theme "Digitizing Biological Collections". There were 4 keynote speakers, unusually for TDWG, but this represented the diversity of the topic. Linda Hill kick-started the meeting with a talk describing the digital gazatteer of the Alexandria Digital Library Project; Charles Copp talked about the UK Biodiversity Network Data Model and its implementation in Recorder 2000; Stan Blum discussed his work with Anton G□ntsch on "The biological collection profile" which could be a basis for integrating collection information systems; and Simon Owens revealed what he had discovered about intellectual property and copyright through his work as Keeper of the Herbarium at Royal Botanic Gardens, Kew.

A traditional feature of TDWG meetings are the subgroup working sessions, and the reports back to the main meeting. The 2001 meeting saw the formation of a Spatial Data Standards subgroup, with the aim of looking at existing GIS systems and gazetteers to see if they could develop a

transfer format in XML - see http://www.tdwg.org/tdwg2000/SpatialData.htm for further details. Other subgroups meeting in Frankfurt were the zoology subgroup, geography subgroup, structured data description subgroup (reporting a very lively discussion) and the accessions subgroup. Further details of the discussions and reports can be found in the report of the meeting at http://www.tdwg.org/rep2000.html, and under the subgroups section on the web site.

The meeting also elected a new executive committee, listed in full at http://www.tdwg.org/exec00.html. Jim Croft was elected as the new chairperson, and Walter Berendsohn as treasurer.

CODATA Working Group on Biological Collection Data Access: A joint CODATA and TDWG initiative approved by the CODATA Executive

The objective of the work group is to foster accessibility of existing and emerging biological collection data banks
at the international level by developing proposals for data and metadata standards. The group's long-term objectives
are:

Foment standardisation of the terminology used to model biological collection information.
Collect and make public documents providing standards used in,or of potential use for, biological collections.
Contribute to a general format for data exchange and retrieval for biological collections.
A short term objective is to provide an XML DTD for data access to biological collections databases.

As envisioned during the Accession Subgroup meeting in Frankfurt, the members of the group will come together in
a workshop in June 2001 with the objective of preparing the base for an XML Document Type Definition for biological collection data. A top-down, core-objects-first approach will be used to deliver results as rapidly as possible. The group is liased to several projects, which, to a certain extent, pursue parallel aims. The discussion in the task group will take advantage of this broad cover to achieve consensus or at least mutual recognition of parallel concepts and their relationship.

Walter Berendsohn,
wgb@zedat.fu-berlin.de

Report on the June Meeting:
A joint TDWG-CODATA Working Group on Biological Collection Data Access was held at the National Center
for Ecological Analysis and Synthesis (NCEAS) in Santa Barbara, CA, from June 11-13, to develop a common
specification for distributed collection data, and to develop a common software architecture to support distributed
queries across collection databases and portals.

The data specification will be provided in XML-based methodology, and the software architecture will be based
on SOAP (Simple Object Access Protocol).

Walter Berendsohn (BGBM) and Lois Blaine (ATCC) co-chaired the working group, which included representatives from four existing distributed query systems: The Species Analyst (TSA), the Red Mundial de Informacion sobre Biodiversidad (REMIB), the European Natural History Specimen Information Network (ENHSIN), and the Australian Virtual Herbarium (AVH).

These systems each provide a single portal to multiple biological collections data providers and enable users to formulate queries against simple shared concepts of collection units, to broadcast queries to multiple data providers and return to the user a single structured data set, which can be viewed on line in a variety of ways, or downloaded for local processing.

At the meeting, participants separated into two groups to address the data specification and the software architecture.

The data group made significant progress toward the specification using a combination of top-down conceptualization and bottom-up use of existing relevant specifications (e.g., the BioCise data model, and the TDWG endorsed standard, HISPID). The working group determined that the data specification should be cast as an XML schema and that is should be both comprehensive and general, including the broad array of collection database concepts, and a narrow core of functional elements. The first public draft will be available before the TDWG meeting in November 2001 (Sydney, Australia).

The software architecture group specified a "search" protocol http://www.gils.net/search.html, combining elements of SOAP, ANSI Z39.50, and UDDI. Portals will broadcast queries to providers as XML documents, in which the query semantics have been "marked up" as XML elements. Each providers will convert the query into SQL and pass it to the local database, and return the result to the portal as an XML document where it will be merged the documents from providers into integrated views or data. Important aspects of this architecture is the decoupling of portals and providers and that both portal and provider software can be built in modules, using an open-source model enabling programmers to share code.

Generous support for this workshop was provided by:
CODATA - http://www.codata.org/
The All Species Foundation - http://www.all-species.org/
The National Science Foundation - http://www.nsf.gov/
National Center for Ecological Analysis and Synthesis (NCEAS) - http://www.nceas.ucsb.edu/

A fuller report on the meeting can be seen at :
http://www.bgbm.fu-berlin.de/TDWG/Codata/SBWorkshop.htm

Jim Croft, Walter Berendsohn & Stan Blum

BioGIS: a Prototype for an Intelligent Biodiversity Information System

Biological collections form the basis of our knowledge about the taxonomy and geographical distribution of all
kinds of organisms. Traditionally, information obtained from biological collections has been made available to the
public by various kinds of 'hard copy' publications, particularly floras and faunas. Recent advances in computer and information sciences have opened new possibilities for the integration and harmonization of data obtained from biological collections. However, until now, most of these efforts have concentrated on information compiled from 'secondary' data sources (i.e., floras and faunas) rather than on treatment of the primary information (i.e., the original specimen data).

BioGIS is a multifunctional biodiversity information system that was designed by a team of scientists at the Hebrew University of Jerusalem in an attempt to fill this gap. A unique feature of BioGIS is the integration of record-level information, species-level information, and geographical information in a unified GIS environment, which is completely and readily accessible through the Internet, and equipped with user-friendly, state-of-the-art tools for data analysis and visualization. Record-level information (e.g., collector name, collection date, determinator, etc.) is compiled from the original label of the specimen. Species-level information (e.g., taxonomic data, chorotype, growth-form, fruit type, etc.) is compiled from external sources, mainly floras for plants and faunas for animals. Geographical information (e.g., rainfall, temperature, soils, conservation status, etc.) is obtained from digital maps stored in the GIS.

A variety of query tools allow the user to easily select, analyze and visualize (map) records based on specimen-level attributes (e.g., specimens collected between 1950-1980), species-level attributes (e.g., geophytes with red flowers), and/or GIS attributes (e.g., specimens collected on sandy soils not more than 2 km from the nearest reserve). Further interactive map tools enable the user to zoom in and digitize any area of interest on the map (e.g., a particular hill or a buffer zone around a road) and then perform queries related to the selected area. Another feature of BioGIS is the ability to produce predictive distribution maps of selected species by using bioclimatic models based on user-specified variables.

BioGIS has been developed using a combination of software tools including ESRI's ArcView Internet Map Server (IMS), MapCaf, (a built-in set of Java routines), MS SQL Server, IIS, PHP, and Matlab. In contrast with most Internet applications, which are 'stateless' (i.e., the system returns to its original state after each operation), BioGIS retains the selected records between successive operations by storing them within the SQL Server database along with a session ID for each user.

The first version of BioGIS was recently implemented in Israel as a prototype for a National Biodiversity Information System (www.biogis.huji.ac.il). The major objectives of the next phase of the project are the development of collaborations with other projects dealing with databasing of collection data and the extension of the system already developed into other regions and more diverse taxonomic groups. Researchers interested in such cooperation are invited to contact Dr Ronan Kadmon, the project leader, at kadmon@vms.huji.ac.il.

ETI's World Taxonomist Database

This is an online taxonomists directory service that allows you to find colleagues' addresses, taxonomic specializations, e-mail addresses and even web pages. The WTD is located at http://www.eti.uva.nl/database/WTD.html

Registration is a straightforward and fast process, so ETI invites you to join the 2500+ taxonomists that have already entered their data. Please take extra care of the description of your specialization, as this is what people are often looking for!

The more taxonomists and specialists are listed in the WTD, the more useful the database will be. Please pass on
this information to colleagues who haven't registered yet, so that they become aware of this free service. Thank you!
Ruud Altenburg, (ETI) ruud@eti.uva.nl

Biological Specimen Imaging

The system of biological specimen imaging of the Berlin-Dahlem Herbarium, demonstrated at the TDWG meeting in Frankfurt by W. Berendsohn is now accessible through the World Wide Web under the URL
http://ww2.bgbm.fu-berlin.de/herbarium/default.cfm. The system is exceptional since it provides high speed access to high resolution images (image size currently around 40 MB, soon to be raised to 130 MB). This is achieved by using the FlashPix format, which allows to zoom in on the pictures using html or java clients.

Walter Berendsohn, BGBM, wgb@zedat.fu-berlin.de

Economic Botany

The Economic Botany subgroup is in the process of rebuilding past connections and compiling a new mailing list. Participation in discussions is already helping determine what revisions to the Economic Botany Data Collection Standard might be beneficial. We hope to be able to advise those who have not yet implemented the Standard and desire to do so, as well as easing any difficulties current users have encountered. If you wish to be included in the subgroup mailings, please contact Daphne Christopher at dchristopher@nybg.org or economicbotany@nybg.org.

Geography

At the last TDWG meeting two new co-ordinators of the TDWG Geography subgroup were elected: Neil Brummitt
and RafaNl Govaerts, both of whom are based in the Herbarium of the Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, U.K. We aim to carry on the committee, allowing for the necessary retirements and replacements, very much as before, keeping on top of enforced name changes and ISO codes and circulating these amongst committee members on an annual basis.

In addition, a second edition of the TDWG Geography Standard has now been prepared by one of the outgoing conveners, R.K. Brummitt. This has now been sent to the publishers, the Hunt Botanical Institute in Pittsburgh,
U.S.A., by the editor Paco Pando; though we have not yet heard an exact date for its publication (we hope it will be
by the end of June 2001). A complete electronic version of this second edition in MS Access, including the full
gazetteer, will soon be available from Neil Brummitt at Kew.

The gazetteer could be usefully expanded to include political subdivisions of geographically complex BRU's
such as the Philippines, more local synonyms, and particularly historical names no longer used. As regards
the future and a possible third edition - since 1994 TDWG has not confined its membership to plants, so our main
activity should be to extend the coverage to include marine habitats in a biologically meaningful way. As the
committee is currently made up of botanists, additional (non-botanical) members are required!

Neil Brummitt and RafaNl Govaerts
n.brummitt@rbgkew.org.uk, r.govaerts@rbgkew.org.uk

Membership

Annual membership of TDWG is €170 for institutions and €60 for individuals. (You can check, e.g., the Currency

Converter at http://www.xe.com/ucc/ for equivalents in other currencies.) Members in good standing are entitled to free copies of TDWG publications (newsletters and those standards published by TDWG), reduced congress
fees for the TDWG annual meetings, and the right to vote on acceptance of standards and other issues concerning
TDWG.

Details on membership, and application forms, are available from
http://www.tdwg.org/membership.html.
Alternatively, contact Walter Berendsohn, TDWG Treasurer, Botanical Museum Berlin-Dahlem, Koenigin-Luise-Str.
6 - 8, 14191, Germany; or email him at wgb@zedat.fu-berlin.de for further details.

Communications

To keep up-to-date with what is happening within TDWG, please look at the web site http://www.tdwg.org for
details.

There are also three email lists set up to help communications:
TDWG@USOBI.ORG for matters of general interest to TDWG members.
See http://usobi.org/archives/tdwg.html on how to join the list.

TDWG-Proc@USOBI.ORG to discuss the TDWG Standards Process. See
http://usobi.org/archives/tdwg-proc.html on how to join the list, and
http://www.tdwg.org/process/tdwg99_blum.html on the reasons for the discussion.

TDWG-SDD@USOBI.ORG to discuss the Structure of Descriptive Data, helping the TDWG SDD subgroup to analyse the requirements for a new standard for descriptive data based on XML. See http://usobi.org/archives/tdwg-sdd.html on how to join the list, and read the archives.

Please use these resources to make your views known, and help make TDWG a more effective organisation.

Newsletter

Please send your contributions and ideas to the Newsletter Editor:
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2000 - 2001 Executive

TDWG Executive 2000-2001:

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