# ALICE software news

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SEVEN

## contents



## introduction

*Conservation is a recurrent theme that weaves its way through this latest (rather overdue!) issue of Alice Software News. We report on projects and institutions around the world that are using the Alice System to document, manage and disseminate biodiversity information. We report on the use of the system in the Visayas region of the Philippines, where the Darwin Database links the biodiversity knowledge of farmers and foresters, and is used also as a valuable teaching tool. In Brazil, we report on a project that is using the system to produce much-needed field guides that support local conservation and development needs. In South Sinai the staff of the St. Katherine protectorate are using the system to document information on native plants and animals and associated local knowledge, thus supporting biocultural conservation in the region. Linking with articles in the last issue of the newsletter (ASN6), we report further on two Alice System databases at the RBGK: the CITES orchid database and Rattan Database. The latter has been used in the production of an interactive CD ROM to the rattans of Brunei.*

The newsletter would not be complete without news of the latest developments in Alice Systems Software. We describe the Subscription Release 12 of System 2.1, which comes with improved programs, documentation, example webs, and a new version of the Alice Transfer Format for use when importing or exporting data. We are excited also to tell you, our users, about AWEB, a new program in the Alice software suite that lets you publish entire Alice databases or subsets, as webs for easy access via the internet. The program is easy to use and opens up all sorts of exciting opportunities for publishing data to a wider audience. As promised in ASN6, we describe the new functionality provided in Systems 2.1 and 3.0 for working with Names and Taxa. Finally, we remind readers of the option of subscribing to Alice Software, and describe the benefits of an annual subscription.

As ever, we want to hear from you, and we welcome news, comments and questions from all users (and potential users) of the Alice System, particularly if there are issues that you would like to see addressed in the next issue of the newsletter.

*The Editors*

# What is in Subscription Release 12?

*The latest releases of Systems 2.1 and 3.0 include a new program, improved versions of some existing programs, improved documentation, support for the latest version of the Alice Transfer Format (ATF), and some example webs created directly from real Alice databases.*

## A NEW PROGRAM

A royalty free version of the Alice database viewer, Aview, is included in the database author's and database administrator's editions. This makes it possible for database authors to distribute read-only versions of their databases for use by others. Recipients will be able to inspect your database and produce a restricted number of useful reports but they will not be able to alter your database in any way.

We are also offering to provide, on request, support in the production of a distribution 'kit' that includes your database and the database viewer.

## PROGRAM IMPROVEMENTS

Twelve bugs have been fixed and nine enhancements made that improve the reliability, ease-of-use and data validation of the system. Thirteen other changes have been made that improve data quality and the consistency and operation of the user interface. Changes have been made to the data entry module, the report writer, the Alice Query Engine, the database health checker and to the data export application. All applications in the Alice suite, apart from dbupdate, have been upgraded. A full description of all these changes is supplied with the software update notice supplied with Release 12.

## IMPROVED DOCUMENTATION

We have enhanced the documentation that accompanies the Alice System. Workarounds to solve difficulties found with the system have been documented. We have also produced a web-based 'knowledgebase' of articles that help you with issues like setting up the Alice System, troubleshooting and checking database integrity.

## A NEW VERSION OF THE ALICE TRANSFER FORMAT

The Alice Transfer Format (ATF) is a technology and database independent format for representing data for the import and export from Alice databases. This is one of the ways in which authors of Alice databases can share data with colleagues and exchange data with other programs.

Previous versions of ATF were only suitable for systems 2.0 and 2.1 and did not include a means of representing all of the data that can be held in an Alice database. It has also been possible to supply configurations of the Alice System that differ in their taxonomic hierarchies, taxon, use, place and name categories from those supplied by default. Previous versions of ATF do not include format definitions for this configuration information.

These shortcomings have been addressed in the latest version of ATF, version 3.0, which is supported in Release 12. The same transfer format can now, for the first time, be used with Systems 2.1 and 3.0. The new ATF definition includes format definitions for all Alice data types. The latest version of the Alice Database export program, Alex, included in Release 12 exports data in ATF 3.0. This makes it possible to export much more of the data held in Alice databases than is possible with ATF 2.0.

ATF 3.0 is an important step to providing data import and export tools that work across both systems and prepares the way for supporting different configurations of the Alice System.

For backwards compatibility, Release 12 of the Alice System still supports ATF version 2.0, which means you are still be able to use software that uses it. A full definition of ATF 3.0 is included on the distribution CD. ATF 3.0 is not compatible with Alice System 2.0.

## WEB PUBLICATIONS

Finally, as a taster, we have included a number of webs on the distribution CD, some generated from Alice databases created by users of the Alice System. We are very excited about the new Alice System product, Aweb, which can be used to create webs directly from Alice databases. These webs are highly indexed, easily searchable and ensure your data is readily accessible through web search engines to anyone with a web browser and an Internet connection.

For further information see the article on pages 8-11 of this newsletter.

## HOW DO I OBTAIN A COPY?

Release 12 is supplied free of charge to all Alice subscription holders. For sites with multiple licences, unlike with Release 11, only a single CD is required to upgrade all licences for each edition.

To become an Alice subscription holder please see details given on the backpage of this newsletter or on our home page, or contact us by email.

## WHAT ELSE DO I NEED?

For subscription Release 12 you must have an installed version of either Release 11B or 11C. Users of Release 11 will need to upgrade to Release 11C before installing Release 12.

# South American Users Forum

Here is good news for Alice users working in South America. Eduardo Dalcin, Coordinator of the 'Centro Nordestino de Informações sobre Plantas' (see ASN No. 6), has recently established an online forum for those people working with, or interested in, using the Alice System. The forum enables users to exchange ideas and experiences and to pose, or answer, questions about using the System in the context of Latin America and in Portuguese or Spanish. Also, the forum offers an opportunity for sharing ideas about managing biodiversity database projects and regional data standards.

Alice Software is excited at this initiative and warmly encourages Spanish and Portuguese speakers to participate and make use of this resource. We share with Eduardo the hope that by talking together, our users can more effectively communicate to us their wishes for future improvements or additions to the System.

Please visit the forum at:

**www.cnip.org.br**

# Alice and the Field Guides

*As a part of a three-year research project on the use and production of field guides, multi-disciplinary teams in Brazil are using the Alice System as an integral part of their exploration into the various ways of collating, organising, analysing and presenting data on plants, and of producing field guides.*

## FIELD GUIDES: WHY ARE THEY NEEDED?

What are field guides, what are they for, who uses them, and why? How effective are they? How can their production and use be improved? How can we ensure that field guides have an important role in conservation and development? These are the types of questions that are the current focus of a three-year research project, the Field Guides Project, funded by the UK's Department for International Development (DFID) Forest Research Programme (FRP). In fact, the Field Guides Project consists of two parallel research projects. One sub-project, coordinated by the Environmental Change Institute (ECI) working in Brazil and Bolivia in South America, is looking at the processes involved in developing a field guide. The other sub-project, coordinated by the Department of Plant Sciences at the University of Oxford working in Africa and the Caribbean, is focussing on technical botanical aspects of plant identification. These projects share the aim of helping authors find more effective ways of developing and writing user-friendly plant field guides. Together they will produce a Field Guides Manual that will be completed in September 2002.

The Field Guides Project has adopted the general definition of a guide, as 'materials that enable the user to identify and/or learn more about different species of flora', that reflects its overall focus on ways in which plant identification can help in conservation and development. Of course, there are many other ways to understand what a guide is and what it is used for; guides vary widely according to subject matter, intended readership and objective. There is no single 'ideal' format or structure for fields guide. Rather, it is important that each guide is tailored to meet the needs and demands of its proposed user group, and that it contains the kind of information, in an accessible and practical format, that suits its users. For example, a botanically technical plant guide comprising keys and line drawings may be appropriate for botanists but be totally inaccessible to farmers. Sadly, it is not unknown for guides to be produced that are not useable by those very people who would benefit most from them.

Aiming to resolve these problems and to improve the success and functionality of new field guides, the Field Guides Manual is aimed at all those people, scientists or non-scientists, wishing to produce field guides that are based on known user needs and are, as far as is possible, accurate, useful and easy to use. The Manual will detail the steps in planning and producing a guide, discuss the various decisions and options involved, and also will advice on political and funding aspects of guide production. Although the Manual will include case-history examples of specific field guides, its content will be applicable to the production of any type of field guide, whether it be a guide to the forage species, the insect pests or endangered plants of a particular area, the medicinal plants or edible plants of a certain community, or a guide for ecotourists.

To those who ask whether more field guides are really needed, the answer is very definitely yes. There simply are not guides for many groups of plants in many areas of the world. The project has identified enormous demand for guides, for a range of purposes, from many different user groups: agricultural extension workers, communities, biologists, and others.

PHOTOGRAPH: ANNA LAWRENCE

# Project in Brazil

Any field guide that enables people to identify species, to learn more about them and to put this knowledge into practice, has an important role to play in the conservation of biodiversity and its associated local knowledge, and in sustainable development and management. Depending on their content and purpose, field guides can be used to encourage the cultivation and use of medicinal plants or native tree species, to help communities conserve their traditional knowledge, to attract ecotourists to protected areas, to encourage people to value the natural environment through raising awareness of biodiversity, and to improve natural vegetation monitoring by assisting scientists with species identification. The benefits to conservation are as varied as the range of guides that could be produced.

## THE ROLE OF THE ALICE SYSTEM

What is the role of the Alice System in the Field Guides Project? As their work progresses, scientists working for the Field Guides Project use the Alice System to compile lists of plants and to store associated information. Obviously, they include scientific and local (vernacular) names, distribution and plant usage. Synonymy, though strictly not necessary for publication in a field guide, can help readers access further information about those species and so, depending on the target audience and the balance between identification and providing information, there may be a place for at least commonly used synonyms (certainly common names) in field guides. The primary role for the Alice System in this context, however, is as a tool for the authors of a field guide to collate, organise, analyse and present morphological diagnostic descriptions.

PHOTOGRAPH: ANNA LAWRENCE

## WORKING WITH DIAGNOSTIC DESCRIPTIONS AND IDENTIFICATION AIDS

Authors of field guides need to be able, firstly, to explore alternative formats and kinds of identification methods (e.g., polyclaves, tables, interactive identification aids) using their own data and, and, secondly, to be able to test the results with the intended user group of each field guide. As well as testing various formats the authors must, inevitably, try out and continually modify different sets of diagnostic characters and different formulations of individual characters used in the identification keys. Exploring different options, of character formulations and sets, with descriptions that are managed manually on paper is highly labour intensive and means either that such explorations are completely impractical, or at least very limited. The Alice System overcomes these limitations and therefore is an ideal tool for helping to manage, analyse and export species descriptions to other applications to create various different identification tools.

## INVOLVEMENT OF OTHER DATABASE PROGRAMMES

A number of authors worldwide have written, and make available, programs that create a range of different species identification aids. Significant subsets of these programs operate on descriptions that have been stored in the DELTA format, for example,

**www.biodiversity.bio.uno.edu/delta** and **www.herbaria.harvard.edu/computerlab/web_keys/navikey**.

Also, PANKEY
**www.rbge.org.uk/pankey.html**

and Lucid
**www.lucidcentral.com/**

DELTA is a coding format for handling diagnostic descriptions. DELTA is very popular and has been used in various applications offering a range of techniques and identification aids. However, DELTA descriptions must be created and edited by hand, which can be tedious and prone to error. Helping to overcome this problem of DELTA editing, the Alice System can export data subsets in DELTA format. Thus, users can store and edit species descriptions, as well synonymy information and other classes of data, in the Alice System, and then output them in DELTA format whenever necessary. To read more about the use of Alice with DELTA please see the Delta newsletters Nos. 3, 4, 5 and 6

**(See http://www.calm.wa.gov.au/science/delta/news/index.html).**

Regardless of whether a field guide is produced with DELTA, or other similar tools, the Alice System still has an important role to play. The most time consuming part in the authoring, testing and evolution of keys and identification aids, is the collation and management of the diagnostic species descriptions. Maintaining sets of what are often long lists of characters and their observations for many different taxa can be a major challenge. Similarly, reviewing the species descriptions keys is tedious and allows plenty of room for error, particularly as ideas evolve and views change on what are the best or easiest characters to use, and what are the most appropriate ways of describing and expressing particular characters and character states. Furthermore, these tasks only get more arduous and complicated as the number of species included increases. The Alice System helps users to face these challenges by keeping species descriptions compatible with one another, by detecting problem areas and by providing useful statistics for assisting in designing and making keys and/or tabulated character tables.

## FIELD GUIDE ACTIVITIES IN BRAZIL

The Field Guides Project team in Brazil has installed the Alice System and has been using it to manage data about the species with which they work. The goal is to produce two field guides to forage legumes found in 'caatinga' vegetation in the State of Bahia. In fact, this work continues on an earlier project (see ASN 6), run by Prof. Luciano Paganucci, which set up an Alice System database for the 256 species of legume with use, phenology and various macro morphological characteristics associated with the potential of these species as forage. One of the aims of this project is to bring together, in one place, traditional botanical descriptors with some of the characters and features that the local farmers use to distinguish between species.

The two guides have different purposes and target audiences. Guide A will cover ALL 256 species and will primarily be for identification purposes. The audience will be technical staff working in extension and development agencies with local communities and natural historians and those working in ecology, environmental sciences or forestry. Guide B is aimed at a more restricted audience comprising technical staff working in extension and development agencies with local communities and their partners. This second guide will cover only those 30 species of most potential for forage, and will contain far more information about use and management of each species described. The purpose of Guide B therefore is primarily to inform. It would be inappropriate to have keys, or other forms of artificial identification, to a small subset of the region's legume taxa, but each species account will include a short diagnostic description listing the principal differences between that species and all others that may be confused with it (through morphological similarity or through sharing the same common name).

The project team in Brazil is using their Alice System database to manage nomenclatural and distributional records, observations about use, phenology, forage characteristics, management features and morphological descriptors and descriptor states. The database also contains free text descriptions of those species to be included in Guide B. Information comes from the literature, herbarium specimens and field studies by botanists and through participatory field visits and working sessions with farmers and their families. The project team is exploring how best to manage links to their image collection within the database.

## USING AWEB IN BRAZIL

A recent development has been the use of the Alice System Aweb program to generate html descriptions from the existing partially completed database. The project team in Brazil is a large one, and spans several institutions and sites; therefore the ability to view the database contents easily through the Internet, without everyone (including project coordinators) becoming familiar with use of Alice, has been helpful. Aweb has helped the team also to think about the alternative formats for presenting the information; namely, interactive CDs with 'DELTA-like' keys in the longer term and easily searched well-indexed web publications in the shorter term. Finally, Aweb has helped the team to identify gaps in the descriptor list, and to appreciate the importance of careful wording, in the definitions of descriptors and their states, to producing a final publication that is functional and easy to use. Often, this wording needs to be changed from one format (a dichotomous key for example) to another (a web publication).

**Here is a short list of EXAMPLES of some of the tasks that Alice will perform to assist in the creation of the identification aids**

**1) Helping to maintain DATA QUALITY, Alice...**

- keeps track of alternative common and scientific names and does not permit unintentional duplication of names
- prevents storing more than one description for any taxon
- lists those taxa for which a descriptor has NOT yet been recorded
- ensures consistency by checking that ALL of the observations for a given descriptor, descriptor state, use, place name etc., have identical spellings!
- prevents a taxon being recorded for more than one state of a non-variable descriptor (e.g., Making it impossible to record "Tendrils present" AND "Tendrils absent" simultaneously for the same plant - unless of course this variability occurs in nature. In which case you can redefine the Alice descriptor Tendrils as "variable")
- records, if you choose to, the source of every observation, thus enabling you to check back if you have doubts later

**2) Facilitating data entry, Alice...**

- allows you to copy old descriptions (e.g. of those species that are very similar to one another) and edit the differences
- saves typing of descriptor and state names, of reference sources etc
- allows you to enter the data in the order in which it is most convenient to do so

**3) Exploring your data to generate keys and identification aids, Alice...**

- lists taxa recorded for a descriptor
- lists taxa recorded for a descriptor state
- lists taxa recorded for one of a list of descriptor states (flowers yellow or cream or white)
- lists taxa recorded for all of a list of descriptor states (flowers yellow AND plant a tree)
- lists taxa which are NOT recorded as having a particular descriptor state
- finds lists of diagnostic characters for each taxon
- exports taxon descriptions to DELTA
- exports taxon descriptions to statistical packages for more sophisticated analysis

**4) As an identification tool, Alice...**

- lists all taxa with a given common name
- lists taxa for which a given descriptor state is UNIQUE
- offers the powerful search capabilities of Aquery to identify specimens – testing the completeness and reliability of your data or indeed allowing colleagues to test the data.
- allows use of the SCOPE criterion, including taxa for which data observations are "Missing", to effectively make Aquery a simple form of interactive online identification
- uses Awrite to generate printed descriptions of the taxa.
- uses Aweb to publish highly indexed descriptions in html format for publication on the Internet.

**Contacts:**
**The multi-disciplinary field guides team in Brazil is coordinated by Maite Sopena Stradmann, of SASOP (Email sasopguias@e-net.com.br), and includes staff from the Universidade Estadual de Feira de Santana (UEFS) [Prof. Luciano Paganucci and Teonildes Nunes along with botanist Jorge Costa and students, Nadja S. Cruz and Anderson S. Costa]; from three NGOs: Serviço de Assessoria a Organizações Populares Rurais (SASOP) [Coord. Carlos Eduardo de Souza Leite and Agronomist Ana Paula Lopes Ferreira], Assessoria e Serviços a Projetos em Agricultura Alternativa (AS-PTA) [Marcelino Lima]; and from the Associação Plantas do Nordeste (APNE) [Frans Pareyn]. The project also counts on the very valuable support and input from Gwil Lewis at the Royal Botanic Gardens, Kew – author of a 'Checklist of Legumes in the State of Bahia.**

# Publishing Alice databases

*One of the common purposes of anyone building a database is publication, for their personal use or for use by a wider audience. Over the years many useful publications, including books, have been produced from Alice databases. Alice Software now offers a new program, Aweb, which allows users to publish databases on the web.*

The Alice System includes a powerful report writer that gives a database author great flexibility over the scope and content of reports. We would not claim, however, that these reports could be published directly. Polishing of the text is often necessary (see article on CITES, pages 12-13). We supply tools and support to help users produce reports, using the report writer, that are more suitable for conventional or electronic publication.

Although the demand for paper publication remains high, increasingly database authors are interested in making their publications available on the Internet. Would it not be wonderful if there were a means of directly publishing subsets or entire Alice databases as webs for easy access via the Internet? Well-constructed webs can be a straightforward way of viewing and reviewing information. They are also an excellent means of sharing information with colleagues. Simple to use, ubiquitous standard technology, the web browser is available for viewing webs. Complex manuals are not required to understand how to use a browser or to view webs. They can be viewed on many devices ranging from personal computers to Personal Digital Assistants (PDAs). Webs can be placed on a web server and accessed through a variety of wired or wireless devices. Webs can be accessed across intranets and extranets.

Alice Software has added a new application to the Alice software suite that lets you do precisely this. The new program is called Aweb.

Aweb makes the generation of webs easy. It is fully integrated into the Alice System. If you are already using the Alice System for managing biodiversity data, you will have no difficulty in using Aweb. Alice databases can be accessed directly as with any other Alice application. The same simple concepts and menu interfaces are used as for all other Alice programs.

To create a web you select the database that you wish to publish, then, using the Alice Query Engine you select exactly those taxa that you wish to include in your publication. Next, you design your web format; you can select the information that you wish to be included in each description and the order in which the

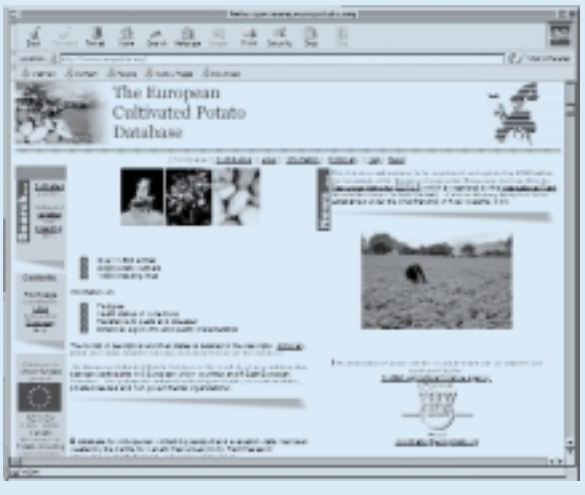
**WOULD IT NOT BE WONDERFUL IF:**

**You could create webs from your Alice databases?**

**The webs that you publish were so easy to search that information of interest could be found quickly and easily?**

**Complex and expensive technology was not required to make such webs available?**

**Publication could be automatic, and you did not need a technical wizard, knowledgeable about how to use web page editors, to create webs for you?**



# on the web

data types will appear. As with Awrite, the conventional report writer, you can save your favourite report formats for future use. Finally, you are given the option of adding personal information for inclusion in your web; examples include a copyright notice, the author's contact details and institutional homepage and hidden keywords that facilitate the web pages being picked up by search engines. Aweb does the rest.

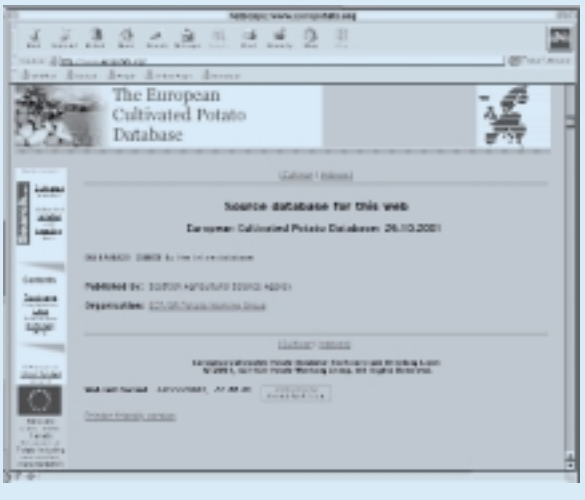
Aweb is available for Alice System 2.1 or 3.0 so that web generation from Alice databases is possible whether you are interested in publishing information about species, cultivated plants or any subset of taxa that is, or could be, described within an Alice database.

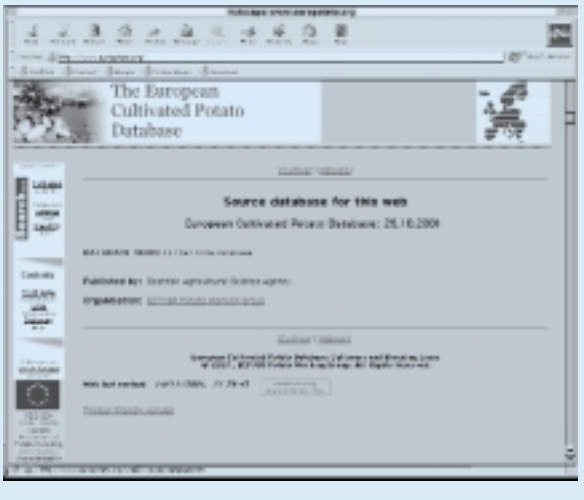
Webs produced by Aweb can be viewed using any web browser. You do not require any browser add-ins. Great care has been given to the interface design to make it clear and consistent and easy to navigate.

At the heart of webs produced by Aweb is a set of taxon descriptions. However, Aweb webs include two features that make them much more useful than a paper catalogue of taxon descriptions.

Firstly, Aweb webs are highly searchable. Unlike books that have a limited set of indexes, normally restricted to scientific and common names, Aweb webs can be searched using many indexes.

Synonymy, of course, is fully supported. If you select a synonym rather than a preferred name you are directed to the correct taxon description. More excitingly, if your Alice database includes descriptors like 'flower colour', with states such as 'red' or 'yellow', and you choose to include descriptors in your web, Aweb generates an index of descriptors and descriptor states. Clicking on the descriptor state 'red' takes you to a list of preferred names for taxa with 'flower colour', 'red'. Clicking on the descriptor 'flower colour' takes you to a list of preferred names for taxa with *any* records for 'flower colour'. This makes it easy for someone browsing a web, to search for all taxa linked to any particular descriptor or descriptor state. All descriptors, use, habitat, distribution and taxonomic group are searchable in this way.



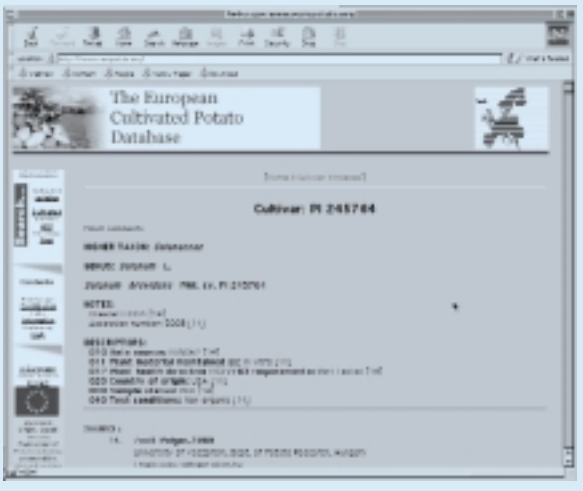
# Publishing Alice databases on the web
## continued

The second feature is of particular interest where there are many contributors collaborating in the construction of a database and wishing to review and perhaps revise the data or information that they have supplied across the Internet. Each taxon description in a web produced using Aweb includes a link to your e-mail client. Provided that you enter your e-mail address as part of the 'user data' supplied when specifying your web, then simply clicking on the e-mail link in a taxon description invokes your e-mail program. The preferred name of the taxon is automatically placed in the subject box. You can enter comments or corrections into the body of your e-mail, possibly after cutting and pasting from the taxon description into your email message, and send them directly to the database author. This provides a simple, inexpensive and elegant means, using standard and widely available technology, of collaborating in the construction of databases.

This technology can be used in a variety of exciting ways for personal or institutional use. Webs on a personal computer with a browser can provide a convenient way of reviewing information held in an Alice database. Webs can be placed on a web server and made available in a searchable form to a wider audience across the Internet. Care has been taken in the design of Aweb to facilitate the efficient indexing of the webs produced; so as to increase the likelihood that search engines will retrieve them. Webs can be placed on local servers in information centres.

Although ideal for personal publication, the web layout used by Aweb is based upon a configurable template. This makes it possible to generate webs that are consistent with any institutional style.

We are very proud of Aweb. It is simple to use, very robust and has been highly tested. Aweb has already been used to publish Alice databases. A few examples and a technical specification can be found on our web site at **http://www.alicesoftware.com.** The latest versions are version 3.0 for System 2.1 and version 4.0 for System 3.0. Both are supplied with example webs based upon the demonstration databases supplied with the Alice System and with full user documentation. Demonstration versions of the software are also available.

Delivery of the latest versions of Aweb is just the beginning. We have three major goals. Firstly, we intend to extend the data types supported by Aweb to include images and data sources external to Alice databases. This will allow database authors to create information-rich web publications around a hub of high quality nomenclatural and descriptive information held in an Alice database. Secondly, and in the longer term, we hope to provide a simple mechanism for the web publication of biodiversity data sets from sources other than Alice databases. Finally, we intend to provide tools that allow users to customise the format of the webs produced using Aweb and to make it easy to integrate such webs into institutional webs.

## Aweb and AliceWeb

AliceWeb, written by Eduardo Dalcin, is a third party application that is successfully being used for web publication (see ASN No.5). Visit (**www.cnip.org.br/cnip/db/index.html**) to view an excellent example of what AliceWeb can do. Recently, the International Legume Database Information Service (ILDIS) has selected AliceWeb to generate its legume database as a web that will be distributed on CD.

### WHAT ARE THE DIFFERENCES BETWEEN ALICEWEB AND AWEB?

There are significant differences in System compatibility, how the program is used, web format and content.

AliceWeb works with data sets built using System 2.0 or 2.1, whilst Aweb will operate with databases built with System 2.1 or 3.0.

Aweb is generally easier to use, particularly for existing Alice users, since it is fully integrated into the Alice System and operates exactly like any other Alice program. Aweb runs directly from your database while Aliceweb requires that you first export the required data set into the ATF format using the data export program, Alex. Aliceweb has a graphical user interface available in English or Portuguese. User documentation is only provided with Aweb.

Aweb offers users more control over the web format, since users can change the order of the data included in each taxon description. The webs produced are also generally simpler in structure and use the same search and navigation mechanisms throughout. They are also built on templates, simplifying the process of matching the look and feel to that of your institutional web. Aweb goes much further in allowing web authors to label their webs with explicit or hidden metatags containing keywords, copyright information and links to institutional homepages.

Aweb produces webs that contain the free text descriptions of the taxa included in your Alice database. AliceWeb is currently unable to do this. The indexes included within published webs are similar regardless of which program was used. Aliceweb, however, does have useful features for database authors that are not currently available in Aweb. Aliceweb generates detailed statistics for particular data types and includes indexes that let readers work backwards from a data source to find out which taxa include data records from that data source for each data type.

A detailed list of the differences between these two programs is available as part of the Aweb documentation.

# Controlling and monitoring the trade in

*The CITES Orchid Databases at the Royal Botanic Gardens, Kew, store nomenclatural and distribution data on those orchid species most commonly found in international trade. To date, the databases include all species of some 34 genera. The major outputs of the databases have been the CITES Orchid Checklists, which now act as the standard reference texts to the names of orchids in trade.*

Established in 1973, the Convention on International Trade in Endangered Species (CITES) exists to control and monitor the international trade in species that are, actually or potentially, threatened in the wild by such trade. In the UK, the CITES Management Authority (MA) is the Department of the Environment, Food and Rural Affairs (DEFRA), to which two designated CITES Scientific Authorities (SAs) report. The SA responsible for plant species is the Royal Botanic Gardens, Kew (RBGK). In simple terms, the role of the Conventions and Policy Section (CAPS) at RBGK, as the UK CITES SA on plants, is to advise the UK Government and help ensure that CITES legislation on plants is based on accurate scientific information. Thus, CAPS's responsibilities range from providing independent advice on applications for CITES permits (c. 6000 per year), to undertaking research into key plant groups affected, or that may become affected, by trade or by CITES legislation.

## CITES AND ORCHIDS

Including many highly-prized, rare and endangered species, the orchid family is subject to both legal and illegal trading activities and therefore is a major focus for the CITES Plants Committee. Although by no means all orchid species are endangered, rare or threatened, they are all CITES-listed (mostly on CITES Appendix II), which means that they cannot be traded without first obtaining the appropriate CITES permits. The reason for this is that the orchids are mostly traded out of flower and therefore closely allied species are difficult to distinguish. Thus a rare species might be traded under the name of a more common species. By using a permit system, CITES can attempt to monitor and quantify the global trade in orchids.

But how can CITES be certain that orchid species are being traded under the correct name, or that endangered orchid species are not being traded under the names of unendangered species? Clearly, CITES depends upon access to expert advice and reference material on identification and nomenclature of the orchid species. A standard reference text to the names of orchid species is needed to ensure that everyone refers to any one species by a commonly accepted name and to improve understanding of the trade in orchids and of the possible impacts on natural wild populations. In 1992 the CITES Plants Committee requested Noel McGough, as Vice-Chairman of the CITES Nomenclature Committee, to be the co-ordinator of checklist production for CITES.

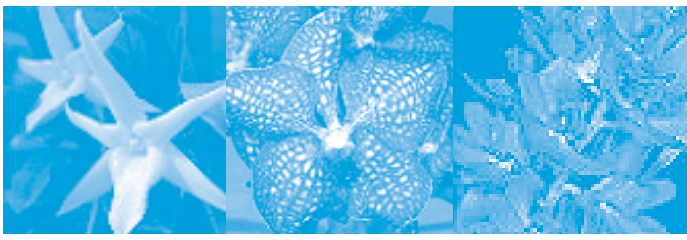
At any one point in time, each plant species is correctly referred to by a unique scientific name (e.g., *Dendrobium aphyllum*), which is deemed by taxonomists to be the 'accepted name'. However, this may not be the only name associated with the species. It is often the case that different taxonomists disagree on the usage of names and therefore have used different names to refer to the same species. This could be due to undetected misidentifications, the emergence of new data that changes the taxonomic status of the species, to the description of the same species under different names in different geographical areas, or to differences of opinion with regard to species delimitation. Thus it is common for a single species to be linked to several names, all of which may have been published validly but of which only one, at any one time, can be classed as the accepted name. Names that are no longer accepted are referred to as synonyms. A synonymised checklist to a particular group of organisms includes all those names that are used, or have been used previously, to refer to members of that group. Generally, a checklist will comprise an alphabetical list of all accepted names, under each of which will be the appropriate synonyms (see Box 1.)

**Box 1: Extract from the CITES Orchid Checklist Vol. 2 (1997)**

| | |
|---|---|
| **Dendrobium calcaratum** A. Rich. | Accepted Name |
| *Dendrobium achillis* Rchb.f. | Synonym |
| *Dendrobium separatum* Ames | Synonym |
| *Dendrobium triviale* Kraenzl. | Synonym |
| *Pedilonum triviale* (Kraenzl.) Rauschert | Synonym |
| *Pedilonum separatum* Ames | Synonym |

**Distribution:** Papua New Guinea, Samoa, Solomon Islands, Tonga, Vanuatu

# orchid species



PHOTOGRAPHS: PHIL CRIBB

## PRODUCTION OF THE CITES ORCHID CHECKLISTS

To compile a checklist of all orchid species in trade was deemed too ambitious a task, thus a list of more than 30 genera were put forward as priorities for nomenclatural action. Eleven of these genera are included in Volume 1 of the CITES Orchid Checklist published in 1995, a further five genera (including the speciose genus, *Dendrobium*) are included in Volume 2 published in 1997, and 15 genera will be in Volume 3 to be published in late 2001. Volume 4 will be the final one and will include a further six genera.

Each volume of the Checklist was generated from CITES Orchid Databases that were compiled, in a five stage process (outlined in Box 2), using the Alice System (initially with System 2.0 and later with 2.1). To date, these databases have been used to store only nomenclatural and geographical data since these are the only categories necessary to the functional purpose of the Checklist. To ensure that the Checklist could not be misused in ways that would threaten orchid species, no habitat information has been included and geographical information is limited to 'Country'. No local names have been included, and no use has made of the Alice System's capacity for managing botanical descriptor information.

**Box 2: Production of the CITES Orchid Checklist**

**Stage 1:** Information on orchid taxonomy, nomenclature and geographical distribution was gathered from literature sources, herbarium specimens, and from various experts.

**Stage 2:** Data was entered into the Alice System CITES Orchid Databases. All databases are updated regularly as new data becomes available.

**Stage 3:** Reports, comprising all associated names for each genus were produced. These draft outputs were reviewed by an International panel of orchid experts; each genus was reviewed by a panel chosen specifically for that purpose. This draft process was repeated five times, to allow full consultation with the Panel on the list of accepted names, synonymous names and distribution for each genus. Majority verdicts were accepted for contentious names.

**Stage 4:** CITES Orchid Databases were updated with reviewers' comments and opinions on the current status (accepted or synonymous) of those names and distributions included in the database.

**Stage 5:** Publication. Using Awrite, the Alice report writer was used to generate text reports. The option to include embedded format codes was used, which then allowed the documents to pass through some Word macros to produce the final product for going to press.

## WHO USES THE CITES ORCHID CHECKLISTS?

Intended as a quick reference for checking accepted names, synonymy and distribution, the CITES Orchid Checklist's primary users are CITES MAs and SAs, CITES enforcement agencies including the dedicated CITES team at Heathrow Airport (UK) responsible for monitoring the provenance and identity of incoming plant material. By linking all synonymous names with the appropriate accepted names and with geographical distribution, the Checklist helps users to detect material with suspect provenance and identity. When advising on permit applications for orchid species, CAPS uses the Checklist to check that the names are included. Customs & Excise staff uses the Checklist in conjunction with European Union regulations to check names on invoices and shipping documents that arrive with imported plants, and to ascertain whether or not the species are subject to CITES controls. C&E staff from around the UK are supported every year by training from RBGK on plant identification and using the Checklist, and on how to read CITES Appendices.

CITES Orchid Checklists have also been adopted as standards for names of horticulturally important orchid genera, for example, by the American Orchid Society and the Royal Horticultural Society.

## WEB PUBLICATION

There have been calls from users of the CITES checklists for web access, and it is certainly hoped that this will happen in the future. This will be possible using recently developed Alice System software [AWEB, see pages 8–11 of this Newsletter].

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# Conservation of the environmental and cultural

*Committed to studying, protecting and conserving the biocultural diversity of the St. Katherine protectorate, in South Sinai, and working with local Bedouin communities, the protectorate's staff are planning to use the Alice System to manage wide-ranging information on the plants and animals of the region and associated local knowledge.*

Created in 1996 by the Egyptian government as a conservation area of national and international importance, the St. Katherine protectorate is a 4350 km$^2$ area, which includes virtually the entire high mountain area of south Sinai. Saw-edged mountain peaks of ancient crystalline rocks, rising to over 2000 meters above sea level, dominate the landscape of St. Katherine and sometimes snow can be found covering the high altitude ecosystems with their surprising diversity of habitats and wild species. Sited at the meeting point of three continents and forming a natural bridge between Africa and Asia, the origins of many of the plants and animals of the Sinai are diverse and widespread, for example, the Sinai rose finch has come from Asia, the ibex and the wolf from Europe, and the striped hyena from Africa.

Its geographical position has, many times, conferred great strategic importance on the region but it is, perhaps, the incredibly rich religious history of the Sinai that makes it so well known. Mentioned in both Christian and Islamic holy books, Sinai is the land where Moses talked with God and where pre-Christians took refuge during periods of persecution. It is also home to two areas that have been principal Christian pilgrimage sites since the fourth century. Mount Sinai, where Moses received the Ten Commandments from God is now a major tourist attraction, and each day several hundred people come to watch the sunrise from the summit. At the mountain's foot, sits the longest continuously-occupied monastery in Christendom, St Katherine's monastery, which with its an rich heritage of Byzantine art and culture is still home to a resident community of monks.

Sinai's fascinating historical and archaeological heritage attracts increasing numbers of visitors each year, including tourists, pilgrims and researchers, who are also drawn by the sheer beauty of the landscape, environment and wildlife. Welcome as these visitors are, the protectorate has to work hard to reduce the tourism-related threats to the area's culture and environment, particularly the ancient traditions of the monastery and the biodiversity of the region. Many of the native plants and animals are now rare or endangered and, in recent years, it has been noted that many of the pastoral plant species are threatened by the severe impact of human activities such as excessive grazing by stock animals, and overharvest of medicinal and fuel plants. The protectorate is taking positive steps towards conservation by setting up enclosures to protect rare and endemic species, by initiating an '*Acacia* species regeneration program' that incorporates various seed germination and tissue culture activities, and by undertaking grazing research that will help ensure that future grazing pressure does not exceed the carrying capacity of the available pasture land.

*St. Katharine's Monastery at the foot of Mount Sinai*
PHOTOGRAPH: TAMER ALI M. KHAFAGA

## ACTIVITIES AND RESEARCH

Faced with conserving the fascinating biological, cultural, archaeological and historical heritage of the Sinai, and ensuring its continuing survival, the staff of St. Katherine's protectorate are working through five main programs:

**1. Biological program:** general and specific status surveys of target species and ecosystems; monitoring biodiversity, particularly with respect to management interventions and environmental impact assessments (EIAs)

**2. Geological program:** regulation of quarrying activities; monitoring water quality and supplies; supervising construction of the catchment's dams and wildlife water points; supporting and assisting with EIAs

# heritage of the South Sinai

**3. Health program:** supporting front line health services for Bedouin communities, various health programs, and emergency services for visitors and protectorate staff

**4. Veterinarian program:** provision of veterinary services to communities at remote wadis, which are poorly served by government veterinary services; increasing the veterinary medical awareness of the Bedouin; control of disease transmission from domestic stock to wildlife; eradication of feral animals


*The Sinai Hawthorn (Crataegus x sinaica)*
PHOTOGRAPH: TAMER ALI M. KHAFAGA

**5. Anthropological program:** liaison with local communities; employment of community guards; promoting participatory management; facilitating and monitoring various community projects

Heritage is not only what we have inherited from the past, but what we live with today and what we will pass on to future generations. Thus, whilst trying to conserve the heritage of the Sinai's past, the protectorate is looking also to the future, and is active in its support of the seven Bedouin tribes living in the area. The presence of the Bedouin presents the protectorate both with management challenges and with exciting opportunities to promote and develop sustainable development practices. With a rich culture, an enviable reputation for hospitality, and a profound knowledge of their land, the Bedouin are playing an important role in the management of the protectorate, particularly those individuals appointed by their communities to work for the protectorate as 'community guards'. In addition to overseeing and reporting on activities within their own particular areas, community guards are also involved in other work, as and when it arises, such as upkeep and cleaning of important sites, repairing the trails that guide environmental researchers into the mountains, providing information on vernacular names of different plant species, and liasing with local communities.

## THE ALICE SYSTEM

All five of the protectorate's work programs depend upon the ability to document, manage and access good quality information about the plant species found in the protectorate. Four plant families, the Compositae, Zygophyllaceae, Leguminosae, and Labiatae, encompassing nearly 900 plant species, dominate the flora of Sinai. Many species are endemic to the region. Particularly characteristic trees and shrubs include: *Crataegus x sinaica*, *Ficus palmate,* and *Pistacia khinjuk* at high elevations, and *Acacia sp., Salvadora persica, Nitraria retusa, Lycium shawii* and *Moringa pergrina* at lower elevations. With its relatively wet climate and unique habitats, the St Katherine Mountain represents a precious harbour of endemism within the greater Sinai region. Approximately 316 higher plant species have been recorded within the protectorate, of which 19 species are endemic.

The protectorate's staff work hard to ensure the conservation of the region's natural biodiversity and the health of its ecosystems, and the continuing survival of its cultural heritage and diversity. To do this they require rapid and easy access to information about the plants found in Sinai. Good quality information held in a database is an ideal way of storing and providing such information. The Protectorate has selected the Alice System for this purpose. The immediate objective of the database project is to systematically document local knowledge about species used by the Bedouin for medicinal purposes. A longer-term objective is to create a flora for South Sinai, and eventually for the whole Sinai region. The protectorate staff will not be the only audience for the information stored in the Alice System database; rather, it will be available to all interested scientists.

The establishment of the St Katherine's Flora database is still in its early stages, and staff members are currently receiving training in the scope of the system, how to use the software and how to create appropriate data categories to ensure that they include all of the various types of information that they wish to use and publish. Once this stage is complete, they will start building the database, establishing their data standards and inputting data.

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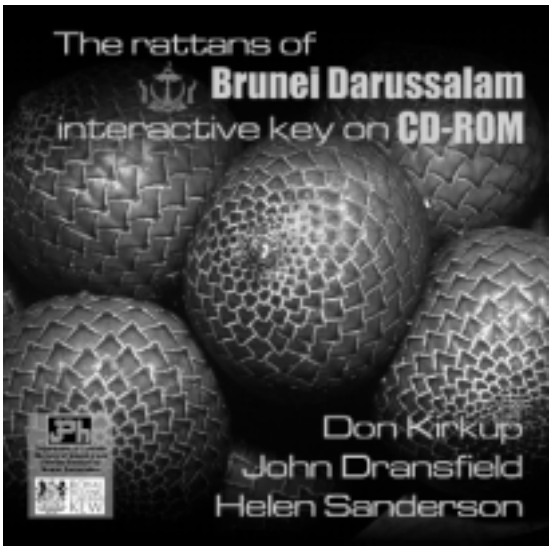
# Brunei Rattan interactive key and CD ROM

*In the last issue of the Alice Newsletter (ASN6), we reported that the palm research team at the Royal Botanic Gardens, Kew (RBGK), has used the Alice System to build a database of palm species. Here we report on how this database was used to create an interactive key on CD ROM.*

## THE PALM DATABASE, RBGK

The Palm Database at RBGK focused initially on the rattan palms. Comprising some 600 different species belonging to 13 genera, the rattans are climbing palms that are economically important at local, national and international levels. After several years of data-input, the resulting Palm Database now comprises all validly published names of rattans, with information on the distribution, habitat and ecology, uses and vernacular names of the species. The database has been incredibly useful, allowing research staff and visitors to access easily a wide range of information on rattans, and to answer queries that would otherwise be complex or time-consuming to resolve. The completion of the database marked the end of the first stage of development of the rattan component of the Palm Database. Whilst this stage primarily used the database as a tool for storing and accessing data, the second stage maximized its capacity as a data management tool, in particular, for managing and exporting species descriptor information. A perfect opportunity for experimenting with this aspect of the database arose with the request, from the Royal Government of Brunei, to produce an interactive key to the rattan species of that country. With the collaboration of Don Kirkup, at RBGK, and using the Alice System in conjunction with CSIRO DELTA programs and the key authoring system, LUCID,



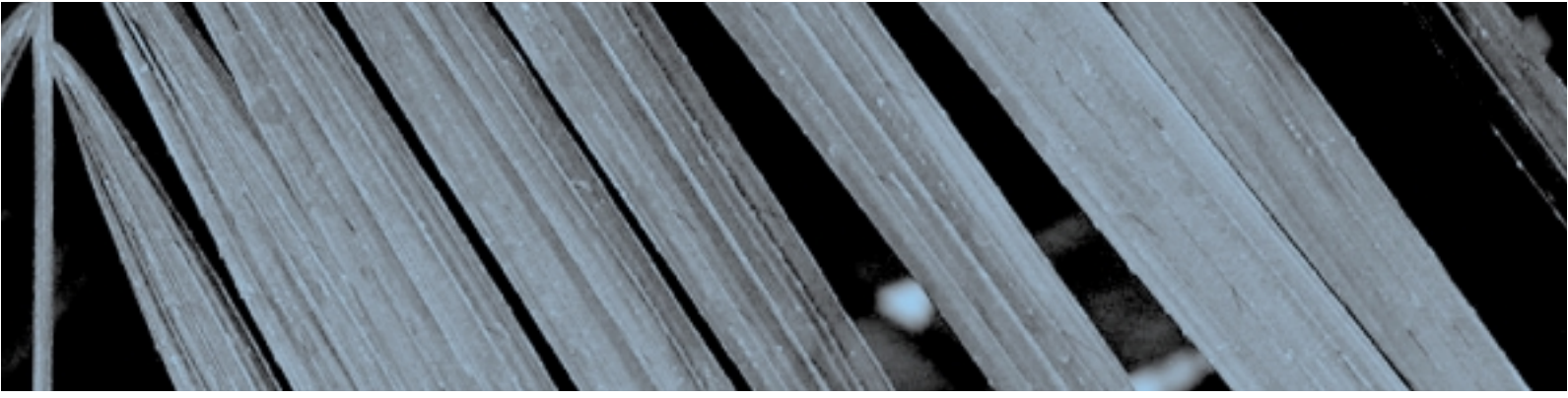

the final interactive key was published as *The rattans of Brunei Darussalam – interactive key on CD ROM* (Kirkup, Dransfield & Sanderson, 1999).

## WORKING WITH BOTANICAL DESCRIPTORS

The first step towards producing this CD ROM was the definition of more than 90 morphological characters useful for differentiating the rattan taxa (species and varieties) of Brunei. Some of these characters already existed in the Alice Palm Database, and therefore the morphological descriptions of these taxa, and the descriptors themselves, needed to be exported from the Alice Palm Database in a format that could be used by key authoring software. There are a number of readily available computer programs for the construction of interactive keys that are based on the DELTA data standard. Adopted by TDWG (the Taxonomic Databases Working Group), the DELTA standard is a way of encoding into a database the morphological, anatomical or chemical characters exhibited by taxa. Therefore, DELTA was chosen as the format in which to encode the rattan taxa descriptions, and LUCID was chosen as the 'front end' for the key because of its ease of use.

The Alice System supports the DELTA data format and the Alex program was used to export the rattan descriptor data from the Alice Palm Database. Whilst this process was in itself straightforward, some problems were encountered owing to minor variations between the syntax of the Alice-DELTA output and the output expected by LUCID. These problems were overcome using Don's knowledge of the DELTA syntax (which is tedious to work with manually) and some text manipulation macros to automate the required changes in the descriptor definitions.

Perhaps the most difficult aspect of building, or combining, datasets of *taxon x character* descriptions lies in ensuring that the characters are defined in a consistent manner between the different datasets. This is particularly difficult when several authors are involved. Although the Alice System and the DELTA format both provide standard ways of encoding *taxon x character* information, there are no constraints as to how the authors define and use characters. The only way to ensure 100% consistency is to have one set of character definitions and to ensure that all authors strictly adhere to this. Although this is



possible, it is difficult to achieve because people interpret terms in different ways. In an attempt to minimise possible differences between authors' interpretations the Brunei rattan project sought to impose some consistency in how the character definitions were arrived at in the first place. The original Palm Database descriptors were redefined so as to follow an *organ–property–value* schema (where a 'leaf' would be an organ which might have the property of 'shape', the value of which might be 'ovate'). Although it is not possible to directly encode such representations of the characters in either DELTA or Alice, this formality when defining descriptors helped achieve consistency between authors.

## LOOKING TO THE FUTURE

As well as the keys themselves, there is clearly a large database of *taxon x character* information for rattans being created at RBGK. It is anticipated that this will continue to grow as other new datasets are added in the future, thus leading to a large Palm Database. As the number of datasets to be incorporated grows, however, so do the difficulties in maintaining the database. Maintenance is complicated by the fact that no interactive key software store data in a properly designed relational database, unlike the Alice System. Don Kirkup said that he "hopes that sharing data with collaborators and transferring information between DELTA and a well organized relational database will become easier once the new architecture planned for the Alice System is implemented". [See Box 1 for the reply from Alice Software]

No attempt has yet been made to import updated DELTA information back into the Palm Database. The CSIRO DELTA programs export data files in the format for input into the Alice System (ATF). However, it is unfortunate that by using the ATF format Version 2.0 many of the links to the image and other multimedia files used in the interactive keys would be lost upon transfer.

The great success of the Brunei Rattan CD ROM, has led to applying the project model to the production of keys to rattans growing in other parts of SE Asia. Notably, work on the *Interactive key to the rattans of the Lao PDR* (Evans and Kirkup) is now complete and a CD ROM containing the key will follow the publication of Tom Evan's fine printed field guide to Lao rattans. Work continues also on the rattans of Borneo, and it is expected that coding of the descriptions for those remaining Bornean rattan species, not already included in the Brunei key, will be completed in late 2001. This will open the way for production of a key, and thus a published CD ROM, to all the rattan species of Borneo.

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## Box 1: Comments on data transfer

As Don Kirkup points out Alice is a well-organised relational database system. The good news is that it was designed with collaboration in mind.

Efficient data transfer between systems requires documented, well-defined standards (that are accepted and adhered to) and compatibility between standards.

A great deal could be written about the use of standards for biodiversity data. For a variety of reasons, some cultural others structural, these notions are not well entrenched. Don is correct: users have an important responsibility. We strongly encourage our users to agree and adopt standard definitions for their descriptors before embarking on a project. They should also look to use accepted standards where ever possible. Combining data is difficult and expensive if you don't. Organisations like TDWG have a role to play in establishing the credibility and importance of well-designed standards.

Those providing software tools also have a responsibility to support accepted standards to ease data transfer between systems. At Alice Software we are strongly committed to supporting established standards and are particularly committed to DELTA!

Don may be pleased to know that enhanced support for DELTA is a candidate for improvement in the next release of the Alice System. We are also reviewing what other standards we should be supporting. Any comments from users would be welcome.

Also relevant to Don's experience are our current explorations of the possibility of enhancing the Alice data model to support an interface that will allow users to attach 'objects' to taxa and potentially other Alice entities. This would allow users to point to, or to attach, images, documents, spreadsheets or even URL links to taxa in other databases.

*The Darwin Database at the Visayas State College of Agriculture (Leyte, The Philippines), holding data on more than 400 plant species, plays important roles in linking the knowledge of farmers and foresters, and in encouraging the inclusion of biodiversity and conservation into the forestry curriculum.*

# Strengthening biodiversity capacity in the forestry curriculum in the Visayas, Philippines

Established in 1998 in the Forestry Department of the Visayas State College of Agriculture (ViSCA), the Darwin Database is one of the outputs of a three-year project funded by the UK Government's Darwin Fund. At the project's core were two fundamental and linked realisations. Firstly, that sustainable development depends upon conservation of biodiversity not only in protected areas but also in farming systems. Secondly, that there is a great difference between foresters' knowledge and farmers' knowledge of plant species. Whilst foresters tend to have technical knowledge on using fast-growing timber species, farmers tend to have greater awareness and appreciation of the value of a much wider range of species. Aware of the great wealth of biodiversity cultivated on-farm in the Visayas region of the Philippines and of the depth of the local knowledge on this diversity and how to manage it, the project's coordinators (Dr. Anna Lawrence, then of Agricultural Extension and Rural Development Department, The University of Reading, and Eduardo Mangaoang of the Forestry Department, ViSCA) launched activities to strengthen biodiversity capacity in the forestry curriculum by ensuring that biodiversity and local knowledge are valued, integral components in all forestry teaching. Central to the project was a belief that it is only by integrating biodiversity into the forestry curriculum, that a new generation of foresters can be produced who have the knowledge, attitudes and skills to meet the challenges of achieving biodiversity conservation and sustainable development in the Philippines.

## DOCUMENTING FARMERS' KNOWLEDGE

In its early phase, project staff visited local communities on the islands of Leyte and Bohol to document farmers' knowledge and use of biodiversity. It was found that farmers are familiar with the uses of over 200 tree species, most of which are native and some are endemic. It was clear to the researchers that these farmers do plant trees and, in the case of fruit trees, farmers both select and develop those varieties that best meet their needs. These findings provided useful case studies for the project's curriculum strengthening process because they illustrated both that farmers' knowledge about trees is extensive and that this knowledge is of great use to foresters. The research also generated a large amount of data. Looking for a way to manage these data that would make it easy for staff, students and other researchers to access, use and analyse them, the project staff chose to use the Alice System to build a species database.

## THE DARWIN DATABASE

The 'Darwin Database of Economically Important Plants of Leyte, Western Samar and Bohol', created using Alice System 2.1, currently holds nomenclatural, botanical, ecological, silivicultural and conservation data on over 400 plant species. The database acts as a crucial link between farmers' knowledge and foresters' knowledge. By bringing these two complementary knowledge sets together for the first time, the Darwin Database has helped to improve communication, understanding, and knowledge transfer between farmers and foresters in the Visayas. A good example of the database's linking capacity relates to the management of plant names. Foresters throughout the Philippines refer to timber trees with a standard set of names in the Tagalog dialect. In contrast, the farmers of the Visayas have their own names, in their local dialects (Waray-waray, Cebuano, etc.) for these species. Clearly, it is important to differentiate between these different types of names, and so the database classes them as Common Names and Local Names, respectively. For example, the Common and Local Names of *Alphonsea arborea* (Annonaceae), a species endemic to the Philippines, are *Bolon* and *Buyon*, respectively. All Alice databases use the Scientific Name of a species as its unique identifier, and thus all data on a species is stored under its Latin binomial (e.g. *Alphonsea arborea*). In this way, the Darwin Database has been able to link information from a variety of sources, including both farmers and foresters, about each species. This has been of enormous use to the ViSCA forestry department in its teaching and research capacities.

## THE DARWIN DATABASE AS A TEACHING TOOL

One of the most interesting aspects of the Darwin Database is that it has been used in an educational context and is actively used by students and teachers. The addition of new data to the database is on-going, with data from student projects or field trips added to the database periodically. The realisation that their data contributes to a wider body of real and useful data can have a strong motivational and educational effect on students. It also helps them to appreciate how many 'types of knowledge' exist, and encourages them to view these different 'types of knowledge' (particularly those of foresters and farmers) on a more equal basis. The structure of the database ensures that all items of knowledge, whether from foresters or farmers, are presented as equally important and there is no hierarchy in the database that places one type of knowledge above another. Alice also helps ensure that the source of every data item is properly recorded.

The database has also been used to impress upon students the importance of herbarium specimens to research. By making a herbarium specimen of a particular plant species, students will be ensuring that any information about this species, obtained at the same time as the specimen, will be forever linked to it. This is particularly important in situations where the identity of a species is uncertain. Any knowledge (local name, use, silvicultural needs, etc.) collected with the specimen will be safely linked to it until such time that plant taxonomists can provide a scientific name for the species. Once the species has been identified, the associated knowledge can be input into the database under the correct scientific name. By linking knowledge about species to herbarium specimens of these species, the ViSCA team can be certain that all information, whether it has been obtained from foresters or farmers, is stored together under the correct species name. These herbarium specimens, stored in the Forestry Department herbarium, also act as a useful tool for obtaining further information, or verifying existing information, about species in the future.

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# Subscriptions

**Have you subscribed yet? Back in January 2000, we launched a subscriptions scheme for users of the Alice System**

### WHAT IS A SUBSCRIPTION?

In return for an annual fee we guarantee that you will receive one release of the system per year, regular updates, technical support, copies of the Alice Newsletter and reduced fees for fixing problems. Not only is subscription better value than buying the Alice System in a 'once-off' purchase, it also gives you a good opportunity to influence our development strategy and to make sure that your voice is heard and your database needs are well catered for. 'Once off' purchases can still be made, and it is possible to upgrade from a 'Once Off' purchase to a subscription licence (we will offer preferential rates if you upgrade from versions of the Alice System prior to System 2.1/3.0).

### HOW DO SUBSCRIPTIONS WORK?

Subscriptions run annually from the 31st January. We will notify you when we deliver subscription components and remind you at the end of a subscription year that your subscription is due for renewal.

### WHAT SUBSCRIPTION PROVIDES:

**A voice in influencing our development strategy for the Alice System;**

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**Manuals, technical documentation and examples printed, or on CD, as they become available;**

**Help Desk Support: up to 15 hours technical support;**

**One release of the system a year;**

**Reduced charges for database health checks and upgrading databases**

### HOW DO I FIND OUT MORE?

Contact Alice Software, preferably by e-mail at: **subscriptions@alicesoftware.com.**

## HOW TO REACH US

We urge all our readers to correspond with Alice Software via e-mail. Our email address is

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The latest information about Alice Systems can be found on our web site at

**http://www.alicesoftware.com**


## Alice software news

### EDITORIAL AND DISTRIBUTION POLICY

This issue of Alice Software News (ASN) has been edited by Sasha Barrow, with Bob Allkin and Peter Winfield. It is distributed free of charge to users of the Alice System and others that wish to be informed about developments of the System. Anyone may send articles or letters to be considered for publication in ASN. We reserve the right to edit and reduce contributions. Any changes to text will be agreed with the author before publication.


## NEXT ISSUE

In the forthcoming issue of the ASN we plan to include recent developments with the European-wide potato cultivar project and to include articles on data import, on developments of our website including the new web-based documentation: 'the Alice knowledge-base' designed to help you with installation, troubleshooting and checking database integrity **and much much more.**

Why is your project a success? What do you long for the Alice System to do? Tell us what **you** think! Email us your thoughts, comments and ideas as soon as possible and we will try to include them in the next issue of the ASN. Any articles for inclusion in the next issue should reach us (on disk or by email) no later than 1 February 2001.