El papel de las colecciones de historia natural en los estudios moleculares

María P. Martín

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Scientific Collections are a **national treasure** and a **global resource**. They serve as sources of data for new insights for year to come and as a legacy we pass on to inspire future generations of scientists, engineers and explorers. (Arden L. Bement , 2009)

Método Científico

Mycol Progress (2010) 9:585–596
DOI 10.1007/s11557-010-0666-5

ORIGINAL ARTICLE

Morphological and molecular studies of *Hyphodermella* in the Western Mediterranean area

M. Teresa Telleria · Margarita Dueñas · Ireneia Melo · María P. Martín

Mycologia, 102(6), 2010, pp. 1426–1436. DOI: 10.3852/09-242

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IMA FUNGUS · VOLUME 4 · NO 1: 21–28

Molecular analyses confirm *Brevicellicium* in *Trechisporales*

M. Teresa Telleria[1], Ireneia Melo[2], Margarita Dueñas[1], Karl-Henrik Larsson[3], and Maria P. Paz Martín[1]

[1]Real Jardín Botánico (RJB-CSIC), Plaza de Murillo 2, 28014 Madrid, Spain; corresponding author e-mail: telleria@rjb.csic.es
[2]Jardim Botânico (MNHNC), Universidade de Lisboa, CBA/FCUL. Rua da Escola Politécnica 58. 1250-102 Lisboa, Portugal
[3]Natural History Museum, University of Oslo, P.O. Box 1172 Blindern, 0318 Oslo, Norway

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[2]Jardim Botânico (MNHNC), Universidade de Lisboa, CBA/FCUL. Rua da Escola Politécnica 58. 1250-102 Lisboa, Portugal
[3]Natural History Museum, University of Oslo, P.O. Box 1172 Blindern, 0318 Oslo, Norway

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Institutional Acronyms and Collections Codes

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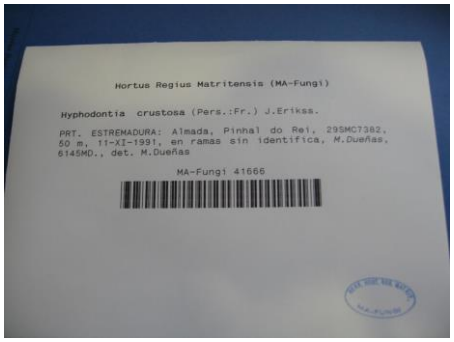
Linking Sequence Data Records to their Voucher Specimens

Contact Information :

Contact Person :	Dr. Margarita Dueñas, Curator of Cryptogams
E-mail :	mduenas@rjb.csic.es
Phone :	[34] 91/ 420 3017.
Fax :	[34] 91/ 420 0157.
URL :	

Método Científico



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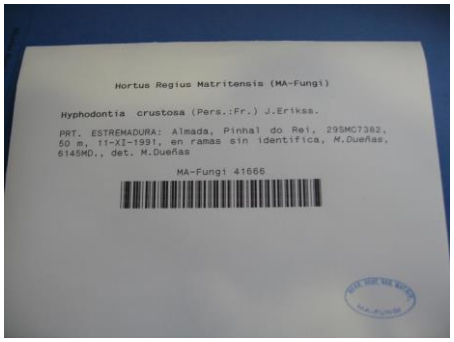
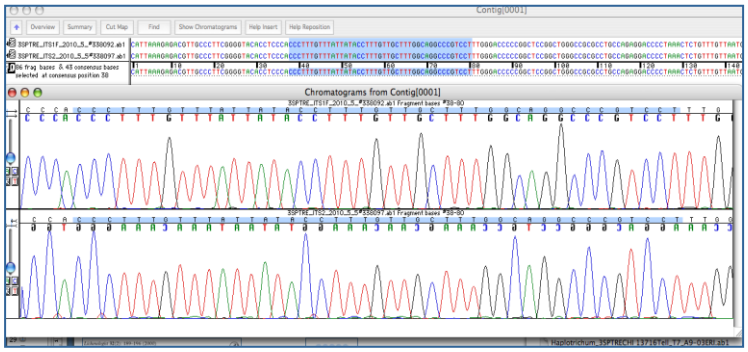
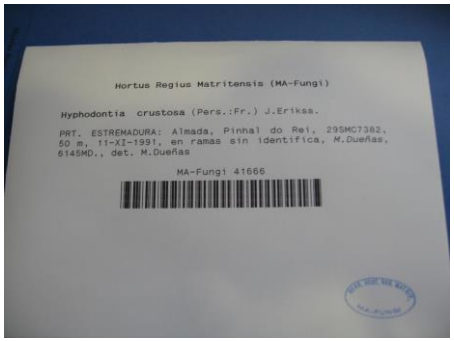
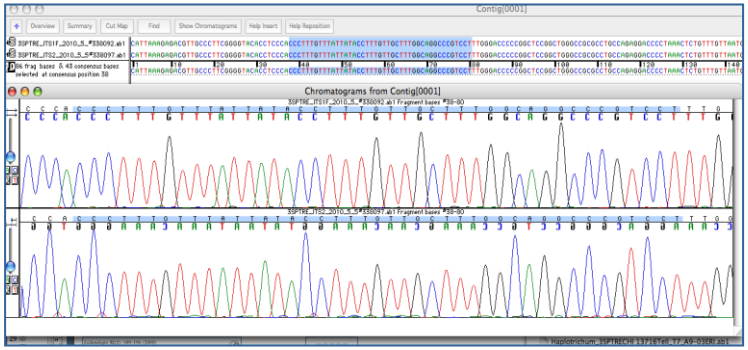




Barcoding of Life

Método Científico





Especie 1

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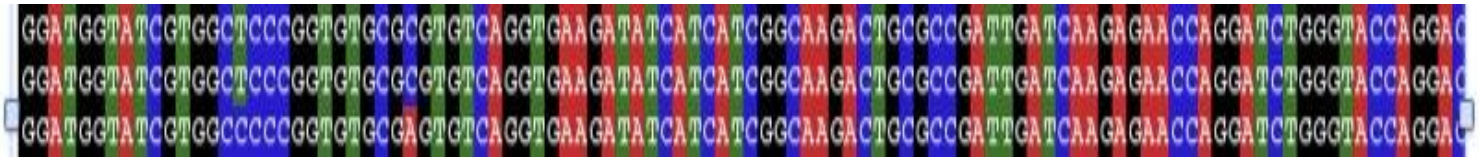
Especie 2



http://www.barcoding.si.edu

pero, se ¿pueden verificar todos los estudios moleculares publicados?

2008

Molecular Phylogenetics and Evolution 48 (2008) 369–371

Contents lists available at ScienceDirect

Molecular Phylogenetics and Evolution

journal homepage: www.elsevier.com/locate/ympev

Short Communication

Phylogenies without roots? A plea for the use of vouchers in molecular phylogenetic studies

F. Pleijel [a,*], U. Jondelius [b], E. Norlinder [a], A. Nygren [c], B. Oxelman [d], C. Schander [e,f], P. Sundberg [c], M. Thollesson [g]

[a] Department of Marine Ecology, Tjärnö Marine Biological Laboratory, Göteborg University, SE-452 96 Strömstad, Sweden
[b] Department of Invertebrate Zoology, Swedish Museum of Natural History, Box 50007, SE-104 05 Stockholm, Sweden
[c] Department of Zoology, Göteborg University, Box 463, SE-405 30 Göteborg, Sweden
[d] Department of Plant and Environmental Sciences, Göteborg University, Box 461, SE-405 30 Göteborg, Sweden
[e] Department of Biology, University of Bergen, Postbox 7800, NO-5020 Bergen, Norway
[f] Centre for Geobiology, University of Bergen, Allegatan 41, 5007 Bergen, Norway
[g] Department of Evolution, Genomics and Systematics, Evolutionary Biology Centre, Uppsala University, Norbyvägen 18C, SE-752 36 Uppsala, Sweden

by individual identification numbers. Of 205 relevant papers published that year, 46% included designated vouchers, either since the studies were based on already deposited specimens, or because specimens were newly deposited for the purpose. Consequently, for 54% of the studies there were no specified vouchers, meaning that more than half of the studies were published without any possibility for other systematists to asses the origin of the data.

205 artículos
2006

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205 artículos
2006

46 % ejemplares testigo

54 % sin ejemplares testigo

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NCBI/NLM/NIH/….

Published in final edited form as:
Mol Phylogenet Evol. 2009 October ; 53(1): 357–358. doi:10.1016/j.ympev.2009.04.016.

Comments on the paper by : vouching for GenBank Pleijel et al. (2008)

Scott Federhen, **Carol Hotton**, and **Ilene Mizrachi**
NCBI, NLM, NIH, 8600 Rockville Pike, Bethesda MD, USA

Scott Federhen: federhen@ncbi.nlm.nih.gov; Carol Hotton: ; Ilene Mizrachi:

museums or other institutions. Furthermore, at GenBank there is currently no dedicated field for specification of vouchers. Without

NCBI/NLM/NIH/….

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Scott Federhen: federhen@ncbi.nlm.nih.gov; Carol Hotton: ; Ilene Mizrachi:

/specimen voucher
/strain
/tissue_type

1998

museums or other institutions. Furthermore, at GenBank there is currently no dedicated field for specification of vouchers. Without

Rhizopogon roseolus strain BCC-MPM 1511 5.8S ribosomal RNA gene, partial sequence; and internal transcribed spacer 2, complete sequence

GenBank: AF115840.1

FASTA Graphics

Go to:

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  JOURNAL   Mycotaxon 71, 267-283 (1999)
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  AUTHORS   Johannesson,H. and Martin,M.P.
  TITLE     Direct Submission
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NCBI Resources How To

Nucleotide

Nucleotide

Limits Advanced

Display Settings: GenBank

Send to

Rhizopogon roseolus strain BCC-MPM 1511 5.8S ribosomal RNA gene, partial sequence; and internal transcribed spacer 2, complete sequence

GenBank: AF115840.1

FASTA Graphics

Go to:

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DEFINITION  Rhizopogon roseolus strain BCC-MPM 1511 5.8S ribosomal RNA gene,
            partial sequence; and internal transcribed spacer 2, complete
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  AUTHORS   Johannesson,H. and Martin,M.P.
  TITLE     Cladistic analysis of European species of Rhizopogon
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  JOURNAL   Mycotaxon 71, 267-283 (1999)
REFERENCE
  AUTHORS
  TITLE
  JOURNAL

FEATURES
     sour

     rRNA

     misc

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  TITLE     Direct Submission
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NCBI/NLM/NIH/….

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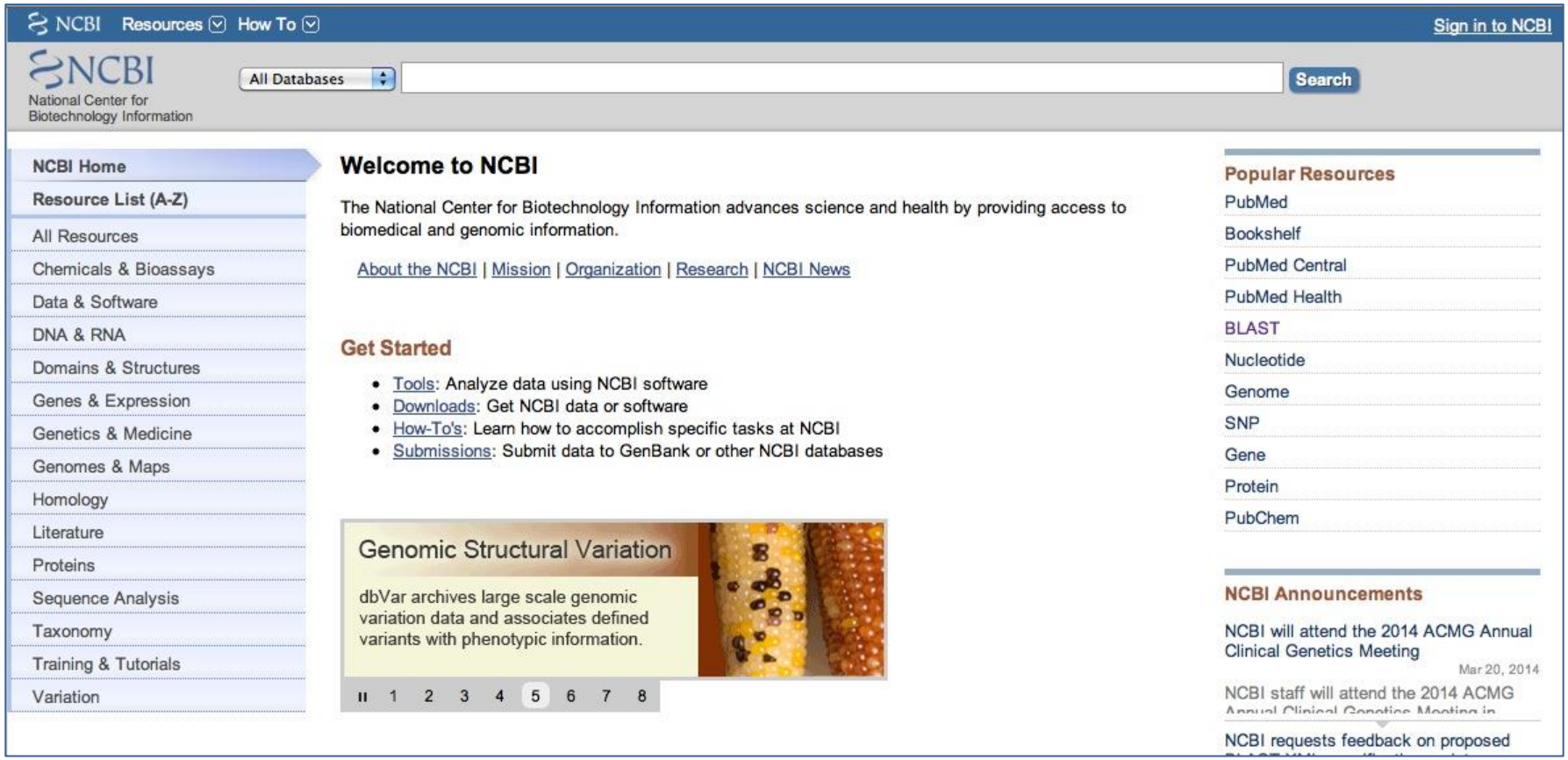

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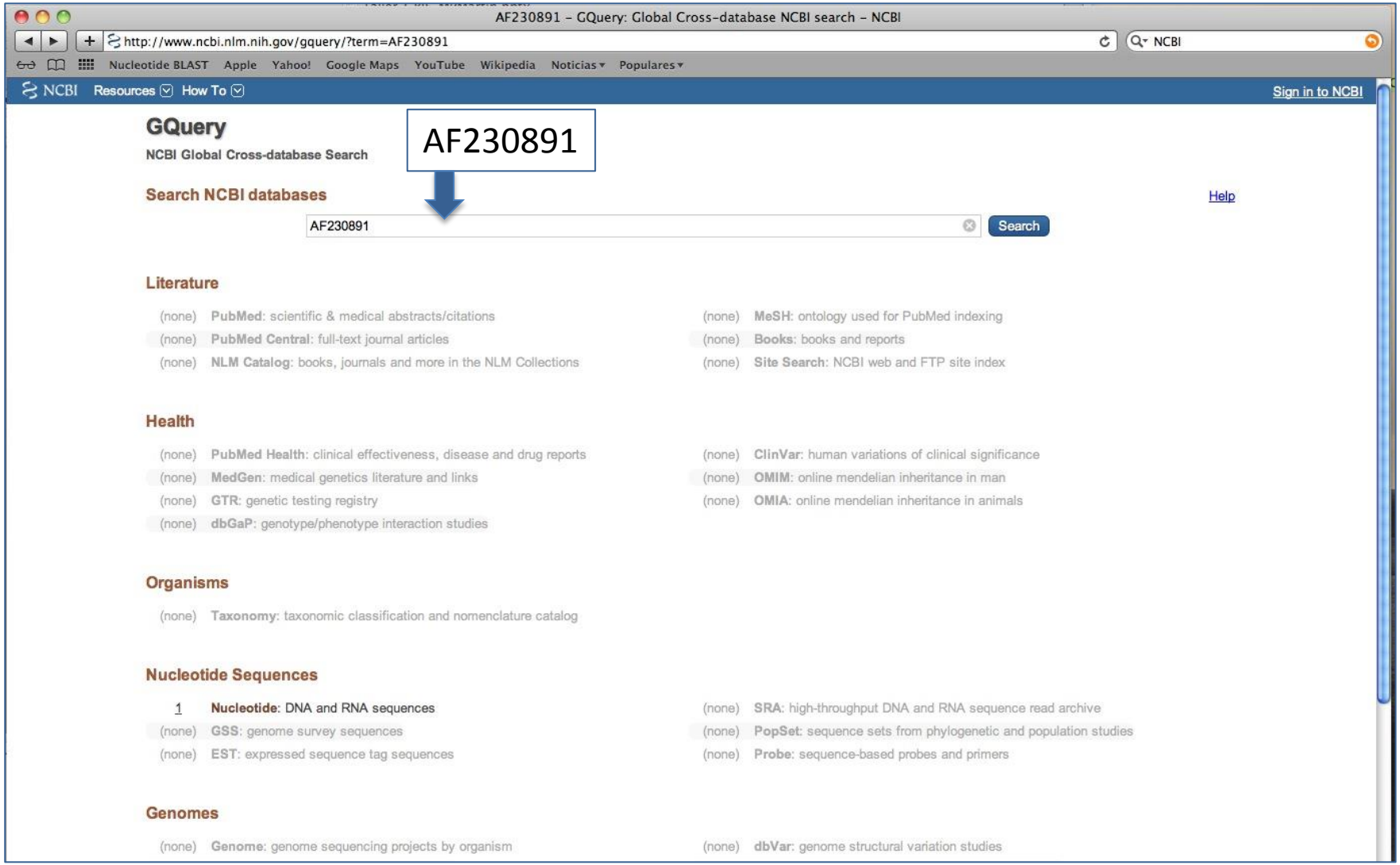
LinkOut … 19.2.2003 … /specimen voucher …. Herbarium MA (MA-Fungi)



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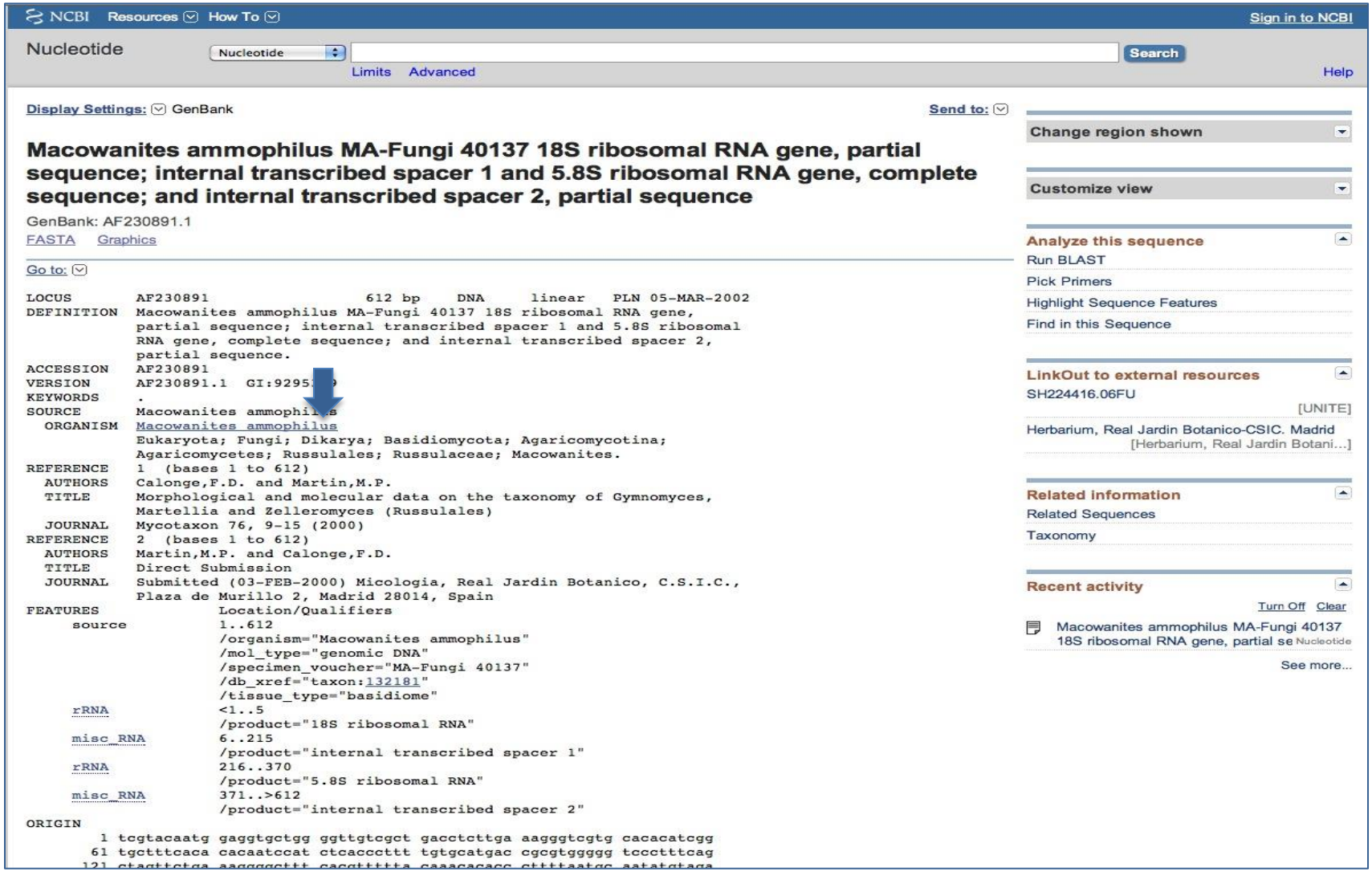

NCBI Resources How To — Sign in to NCBI

Nucleotide — Nucleotide — Search — Limits Advanced — Help

Display Settings: GenBank — Send to:

Macowanites ammophilus MA-Fungi 40137 18S ribosomal RNA gene, partial sequence; internal transcribed spacer 1 and 5.8S ribosomal RNA gene, complete sequence; and internal transcribed spacer 2, partial sequence

GenBank: AF230891.1

FASTA Graphics

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REFERENCE   1  (bases 1 to 612)
  AUTHORS   Calonge,F.D. and Martin,M.P.
  TITLE     Morphological and molecular data on the taxonomy of Gymnomyces,
            Martellia and Zelleromyces (Russulales)
  JOURNAL   Mycotaxon 76, 9-15 (2000)
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  AUTHORS   Martin,M.P. and Calonge,F.D.
  TITLE     Direct Submission
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Change region shown

Customize view

Analyze this sequence
Run BLAST
Pick Primers
Highlight Sequence Features
Find in this Sequence

LinkOut to external resources
SH224416.06FU [UNITE]
Herbarium, Real Jardin Botanico-CSIC. Madrid [Herbarium, Real Jardin Botani...]

Related information
Related Sequences
Taxonomy

Recent activity
Turn Off Clear
Macowanites ammophilus MA-Fungi 40137 18S ribosomal RNA gene, partial se Nucleotide
See more...

NCBI/NLM/NIH/….

LinkOut … 19.2.2003 … /specimen voucher …. Herbarium MA (MA-Fungi)

NCBI Taxonomy Browser

Entrez | PubMed | Nucleotide | Protein | Genome | Structure | PMC | Taxonomy | Books

Search for [ ] as [complete name] lock [Go] [Clear]

Display [3] levels using filter: [none]

Macowanites ammophilus

Entrez records	
Database name	Direct links
Nucleotide	5
Taxonomy	1

Taxonomy ID: 132181
Inherited blast name: **basidiomycetes**
Rank: species
Genetic code: Translation table 1 (Standard)
Mitochondrial genetic code: Translation table 4 (Mold Mitochondrial; Protozoan Mitochondrial; Coelenterate Mitochondrial; Mycoplasma; Spiroplasma)
Other names:
synonym: **Gymnomyces ammophilus**

Lineage(full)
cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Basidiomycota; Agaricomycotina; Agaricomycetes; Agaricomycetes incertae sedis; Russulales; Russulaceae; Macowanites

Comments and References:

Calonge, F.D. & J.M. Vidal.
Vidal J.M., Calonge F.D., Martin M.P. Macowanites ammophilus, Russulales, a new combination based on new evidence. (Unpublished). Calonge, F.D. & J.M. Vidal. (1999)- "Gymnomyces ammophilus Vidal & Calonge; sp. nov. found in Portugal".- Bol. Soc. Micol. Madrid 24: 65-70.

External Information Resources (NCBI LinkOut)

LinkOut	Subject	LinkOut Provider
search GBIF	taxonomy/phylogenetic	Global Biodiversity Information Facility
MA-Fungi 40132	culture/stock collections	Herbarium, Real Jardin Botanico-CSIC. Madrid
MA-Fungi 40137	culture/stock collections	
Gymnomyces ammophilus J.M. Vidal & Calonge 1999	taxonomy/phylogenetic	Index Fungorum
Macowanites ammophilus (J.M. Vidal & Calonge) J.M. Vidal & Calonge 2002	taxonomy/phylogenetic	
Gymnomyces ammophilus J.M. Vidal & Calonge	taxonomy/phylogenetic	MycoBank
Macowanites ammophilus (J.M. Vidal & Calonge) J.M. Vidal & Calonge	taxonomy/phylogenetic	

Notes:
Groups interested in participating in the LinkOut program should visit the LinkOut home page.
A list of our current non-bibliographic LinkOut providers can be found here.
To see LinkOut links in this lineage click here

LinkOut … 19.2.2003 … /specimen voucher …. Herbarium MA (MA-Fungi)

Herbario de Criptogamia

Información
Bases de datos
Noticias
Adquisiciones
Contactar
por F. Pando

RJB > Colecciones > Herbario > Criptogamia > Bases de datos > Búsqueda

Resultados

Volver al formulario de búsqueda
Back to the query form

Gymnomyces ammophilus J.M. Vidal & Calonge 1

Det. F.D.Calonge

Macowanites ammophilus (Vidal & Calonge) Vidal & Calonge 2

Det. F.D.Calonge (04 -200)

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J.M.Vidal
27-mar-1998
MA-Fungi 40137 GenBank Acc. No. AF230891
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Nombre aceptado en el Herbario : Macowanites ammophilus (Vidal & Calonge) Vidal & Calonge

CSIC Real Jardín Botánico Webmaster *Página preparada por F.Pando* Actualizada el 27 de abril del 2000

NCBI/NLM/NIH/….

21.03.2014 … Biological Repositories …. Colecciones de Historia Natural

ftp://ftp.ncbi.nih.gov/pub/taxonomy/coll_dump.txt


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A          s        Arnold Arboretum, Harvard University
AA         s        Ministry of Science, Academy of Sciences
AAH        s        Arnold Arboretum, Harvard University
AAPI       s        Plant Industry Laboratory
AAR        s        Reliquae Aaronsohnianae
AARI       s        Anatolian Agricultural Research Institute
AAS        s        British Antarctic Survey
AAU        s        University of Aarhus, Institute of Biological Sciences
AAU<ETH>            s        Addis Ababa University, Department of Biology
AAU<ETH>:A          s        Addis Ababa University, Department of Biology, Amphibian collection
AAUB       s        Anhui Agricultural University, Department of Basic Courses
AAUF       s        Anhui Agricultural University, Forest Utilization Faculty
ABB        c        Asian Bacterial Bank
ABD        s        University of Aberdeen, Plant and Soil Science Department
ABDAM      s        Aberdeen Art Gallery and Museum
ABDC       s        Aba Institute for Drug Control
ABDF       s        University of Aberdeen, Forestry Department
ABDH       s        United Arab Emirates University, Department of Biology
ABDM       s        Marischal College, University of Aberdeen
ABFM       s        The Barnes Foundation Arboretum
ABH        s        Universidad de Alicante, Centro Iberoamericano de la Biodiversidad (CIBIO)
ABI        s        Centre ORSTOM d'Adiopodoume
ABKMI      c        Department of Applied Biology, Faculty of science
ABL        s        Adviesbureau voor Bryologie en Lichenologie
ABN        s        Radley College
ABO        s        Aboyne Castle
ABRC       b        Arabidopsis Biological Resource Center
ABRIICC    c        ABRIICC Agricultural Biotechnology Research Institute of Iran Culture collection
ABRN       s        Centre for Ecology and Hydrology
ABS<UK>    sc       University of Wales, Botany Department
ABS<USA>            s        Archbold Biological Station
ABSH       s        Southern Illinois Universitiy, Department of Plant Biology
ABSL       s        University of Minnesota, American Bryological and Lichenological Society
ABSM       s        Duke University, Botany Department
ABT        s        Laboratoire de Biologie Vegetale et d'Ecologie Forestiere
ABTC       s        Australian Biological Tissue Collection, South Australian Museum
ABU<NGA>            s        Ahmadu Bello University Herbarium
AC         s        Amherst College
ACA        s        Agricultural University of Athens
ACA-DC     c        Greek Coordinated Collections of Microorganisms
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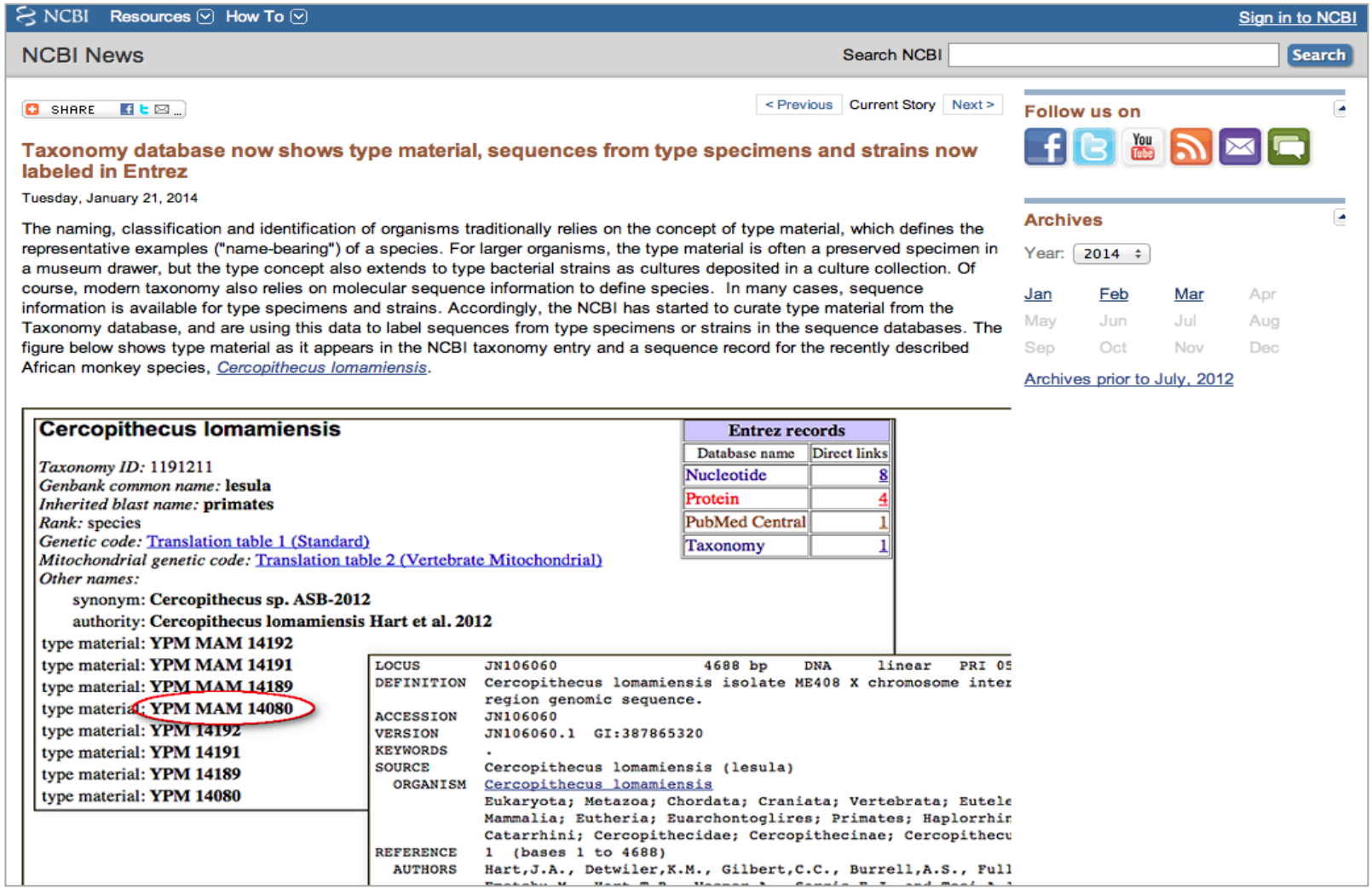
NCBI/NLM/NIH/….

21.01.2014 … Base de datos taxonomia … Colecciones Tipo

http://www.ncbi.nlm.nih.gov/news/01-21-2014-sequence-by-type/



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Taxonomy database now shows type material, sequences from type specimens and strains now labeled in Entrez

Tuesday, January 21, 2014

The naming, classification and identification of organisms traditionally relies on the concept of type material, which defines the representative examples ("name-bearing") of a species. For larger organisms, the type material is often a preserved specimen in a museum drawer, but the type concept also extends to type bacterial strains as cultures deposited in a culture collection. Of course, modern taxonomy also relies on molecular sequence information to define species. In many cases, sequence information is available for type specimens and strains. Accordingly, the NCBI has started to curate type material from the Taxonomy database, and are using this data to label sequences from type specimens or strains in the sequence databases. The figure below shows type material as it appears in the NCBI taxonomy entry and a sequence record for the recently described African monkey species, *Cercopithecus lomamiensis*.

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Archives

Year: 2014

Jan Feb Mar Apr
May Jun Jul Aug
Sep Oct Nov Dec

Archives prior to July, 2012

Cercopithecus lomamiensis

Taxonomy ID: 1191211
Genbank common name: **lesula**
Inherited blast name: **primates**
Rank: species
Genetic code: Translation table 1 (Standard)
Mitochondrial genetic code: Translation table 2 (Vertebrate Mitochondrial)
Other names:
synonym: **Cercopithecus sp. ASB-2012**
authority: **Cercopithecus lomamiensis Hart et al. 2012**
type material: **YPM MAM 14192**
type material: **YPM MAM 14191**
type material: **YPM MAM 14189**
type material: **YPM MAM 14080**
type material: **YPM 14192**
type material: **YPM 14191**
type material: **YPM 14189**
type material: **YPM 14080**

Entrez records	
Database name	Direct links
Nucleotide	8
Protein	4
PubMed Central	1
Taxonomy	1

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LOCUS       JN106060               4688 bp    DNA     linear   PRI 05
DEFINITION  Cercopithecus lomamiensis isolate ME408 X chromosome inter
            region genomic sequence.
ACCESSION   JN106060
VERSION     JN106060.1  GI:387865320
KEYWORDS    .
SOURCE      Cercopithecus lomamiensis (lesula)
  ORGANISM  Cercopithecus lomamiensis
            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Eutele
            Mammalia; Eutheria; Euarchontoglires; Primates; Haplorrhir
            Catarrhini; Cercopithecidae; Cercopithecinae; Cercopithecu
REFERENCE   1  (bases 1 to 4688)
  AUTHORS   Hart,J.A., Detwiler,K.M., Gilbert,C.C., Burrell,A.S., Full
```

Fungi …. RefSeqITS database

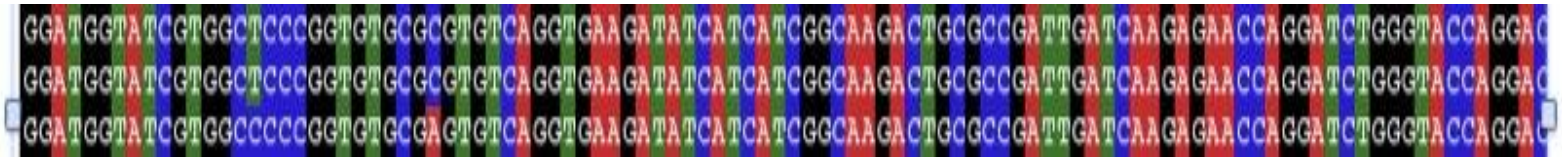
Robbertse et al. 2014. Finding needles in haystacks: linking scientific names, reference specimens and molecular data for Fungi (en fase de publicación).

- Seleccionado y revisado secuencias ITS nrDNA (barcoding de hongos) depositadas en NCBI obtenidas de especímenes tipo.

Especie 1, T

?

Especie 2, T



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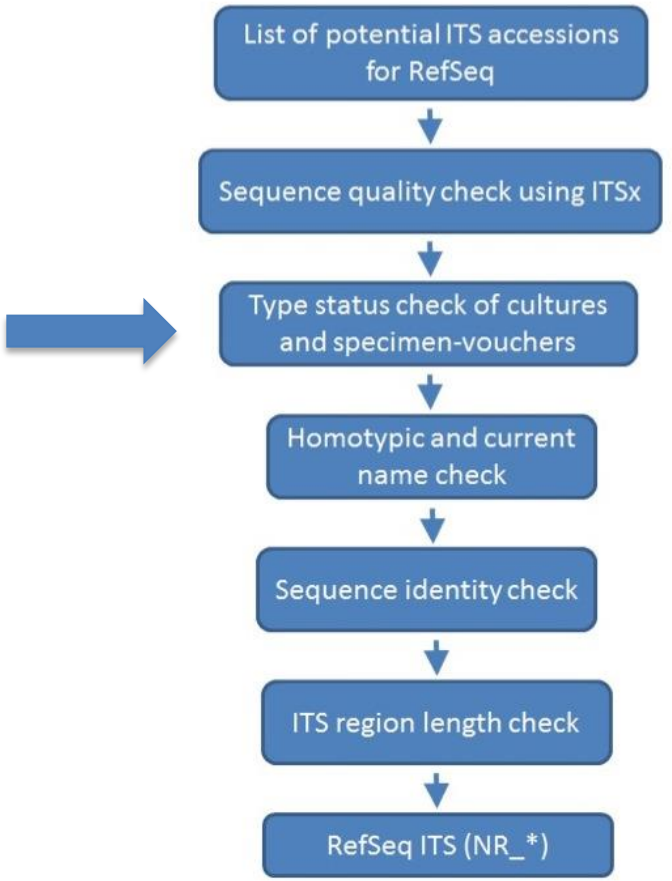
- Proponemos el protocolo para verificar estas secuencias e incluirlas en la RefSeqITS database: RefSeq ITS (NR_*).

Figure 1. Workflow of the ITS verification for RefSeq ITS database.



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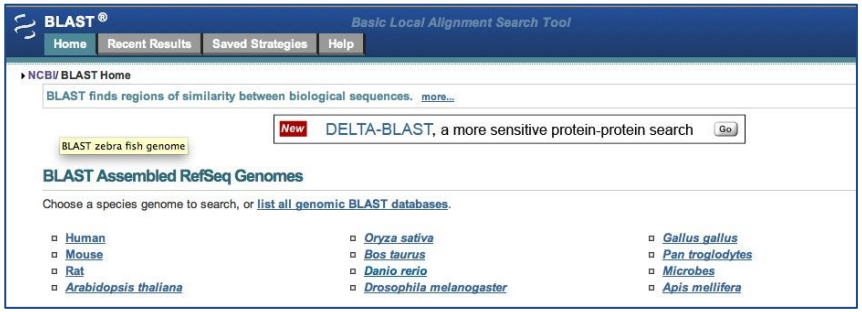

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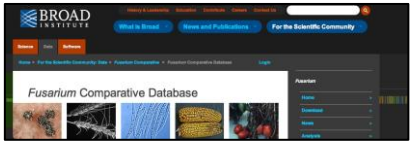

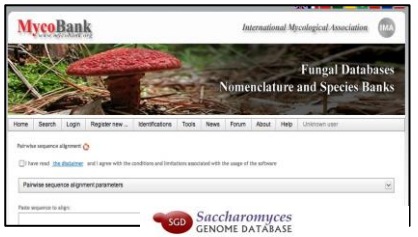

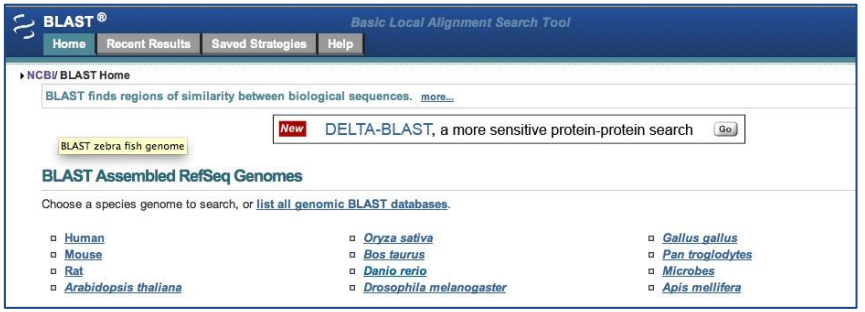

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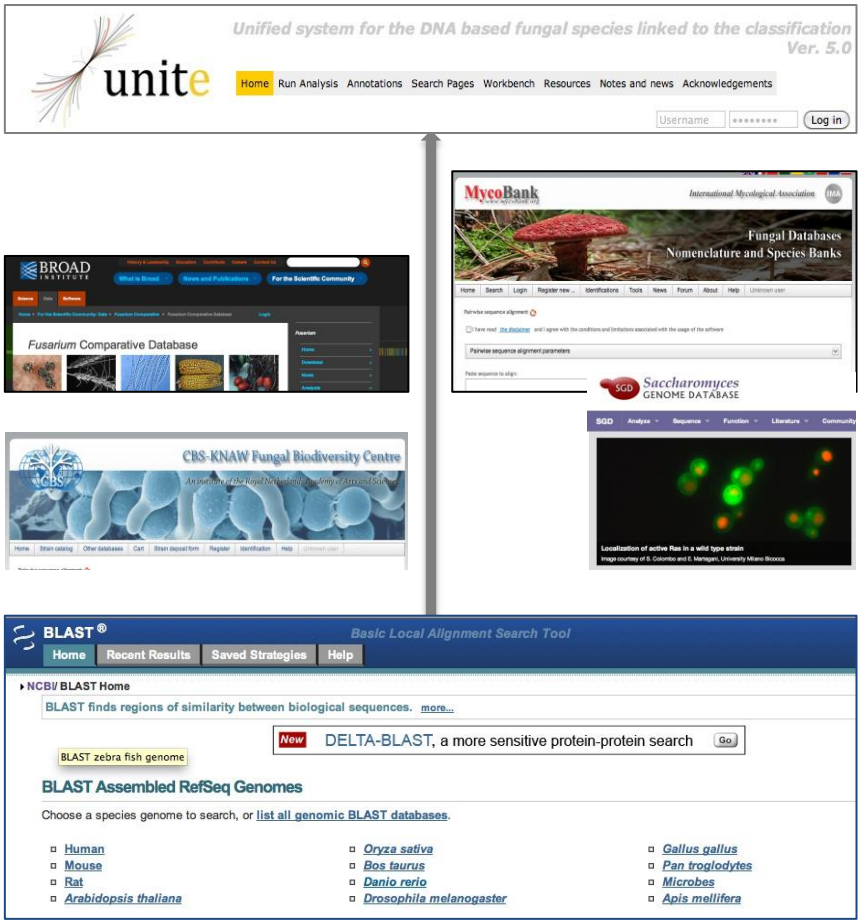


¿Identificación automática?

UNITE

MOLECULAR ECOLOGY

Molecular Ecology (2013)

2013

NEWS AND VIEWS

OPINION

Towards a unified paradigm for sequence-based identification of fungi

URMAS KÕLJALG,[1,2] R. HENRIK NILSSON,[3] KESSY ABARENKOV,[2] LEHO TEDERSOO,[2] ANDY F. S. TAYLOR,[4,5] MOHAMMAD BAHRAM,[1] SCOTT T. BATES,[6] THOMAS D. BRUNS,[7] JOHAN BENGTSSON-PALME,[8] TONY M. CALLAGHAN,[9] BRIAN DOUGLAS,[9] TIIA DRENKHAN,[10] URSULA EBERHARDT,[11] MARGARITA DUEÑAS,[12] TINE GREBENC,[13] GARETH W. GRIFFITH,[9] MARTIN HARTMANN,[14,15] PAUL M. KIRK,[16] PETR KOHOUT,[1,17] ELLEN LARSSON,[3] BJÖRN D. LINDAHL,[18] ROBERT LÜCKING,[19] MARÍA P. MARTÍN,[12] P. BRANDON MATHENY,[20] NHU H. NGUYEN,[7] TUULA NISKANEN,[21] JANE OJA,[1] KABIR G. PEAY,[22] URSULA PEINTNER,[23] MARKO PETERSON,[1] KADRI PÕLDMAA,[1] LAURI SAAG,[1] IRJA SAAR,[1] ARTHUR SCHÜßLER,[24] JAMES A. SCOTT,[25] CAROLINA SENÉS,[26] MATTHEW E. SMITH,[26] AVE SUIJA,[1,2] D. LEE TAYLOR,[27] M. TERESA TELLERIA,[12] MICHAEL WEISS[28] and KARL-HENRIK LARSSON[29]

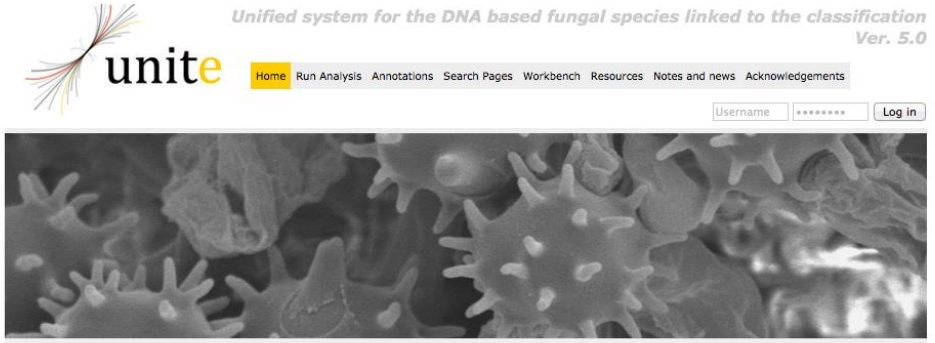
[1]*Institute of Ecology and Earth Sciences, University of Tartu, Lai 40, Tartu 51005, Estonia;* [2]*Natural History Museum, University of Tartu, Vanemuise 46, Tartu 51014, Estonia;* [3]*Department of Biological and Environmental Sciences, University of Gothenburg, Box 461, Göteborg SE-40530, Sweden;* [4]*The James Hutton Institute, Craigiebuckler, Aberdeen, AB15 8QH, UK;* [5]*Institute of Biological and Environmental Sciences, University of Aberdeen, Cruickshank Building, St Machar Drive, Aberdeen AB24 3UU, UK;* [6]*Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, CO 80309, USA;* [7]*Department of Plant and Microbial Biology, University of California, Berkeley, CA 94720, USA;* [8]*Department of Neuroscience and Physiology, The Sahlgrenska Academy, University of Gothenburg, Box 434, Göteborg SE-40530, Sweden;* [9]*Institute of Biological, Environmental and Rural Sciences, Aberystwyth University, Cledwyn Building, Aberystwyth SY23 3DD, UK;* [10]*Institute of Forestry and Rural Engineering, Estonian University of Life Sciences, Fr. R. Kreutzwaldi 5, Tartu 51014, Estonia;* [11]*Staatliches Museum f. Naturkunde Stuttgart, Abt. Botanik, Rosenstein 1, Stuttgart D-70191, Germany;* [12]*Departmento de Micología, Real Jardín Botánico (RJB-CSIC), Plaza de Murillo 1, Madrid 28014, Spain;* [13]*Department of Forest Physiology and Genetics, Slovenian Forestry Institute, Vecna pot 2, Ljubljana SI-1000, Slovenia;* [14]*Forest Soils and Biogeochemistry, Swiss Federal Research Institute WSL, CH-8903 Birmensdorf, Switzerland;* [15]*Molecular Ecology, Agroscope Reckenholz-Tänikon Research Station ART, CH-8046 Zurich, Switzerland;* [16]*Mycology Section, Jodrell Laboratory, Royal Botanic Gardens Kew, Surrey TW9 3DS, UK;* [17]*Institute of Botany, Academy of Science of the Czech Republic, Průhonice CZ-252 43, Czech Republic;* [18]*Department of Forest Mycology and Plant Pathology, Swedish University of Agricultural Sciences, Box 7026, Uppsala SE-75007, Sweden;* [19]*Science and Education, Integrative Research and Collections (Botany), The Field Museum, 1400 South Lake Shore Drive, Chicago, IL 60605-2496, USA;* [20]*Department of Ecology and Evolutionary Biology, University of Tennessee, Hesler Biology Building 332, Knoxville, TN 37996-1610, USA;* [21]*Plant Biology, Department of Biosciences, University of Helsinki, P.O. Box 56, Helsinki FI-00014, Finland;* [22]*Department of Biology, Stanford University, Stanford, CA 94305, USA;* [23]*Institute of Microbiology, University Innsbruck, Technikerstr. 25, Innsbruck 6020, Austria;* [24]*Genetics, Department Biology, Ludwig-Maximilians-University, Grosshaderner Str. 4, Martinsried, Munich 82152, Germany;* [25]*Dalla Lana School of Public Health, University of Toronto, 223 College Street, Toronto, ON M5T 1R4, Canada;* [26]*Department of Plant Pathology, University of Florida, Gainesville, FL 32611-0680, USA;* [27]*Department of Biology, University of New Mexico, MSC03 2020, Albuquerque, NM 87131-0001, USA;* [28]*Department of Biology, University of Tübingen, Auf der Morgenstelle 5, Tübingen D-72076, Germany;* [29]*Natural History Museum, University of Oslo, P.O. Box 1172 Blindern, Oslo 0318, Norway*

Abstract

The nuclear ribosomal internal transcribed spacer (ITS) region is the formal fungal barcode and in most cases the marker of choice for the exploration of fungal diversity in environmental samples. Two problems are particularly acute in the pursuit of satisfactory taxonomic assignment of newly generated ITS sequences: (i) the lack of an inclusive, reliable public reference data set and (ii) the lack of means to refer to fungal species, for which no Latin name is available in a standardized stable way. Here, we report on progress in these regards through further development of the UNITE database (http://unite.ut.ee) for molecular identification of fungi. All fungal species represented by at least two ITS sequences in the international nucleotide sequence databases are now given a unique, stable name of the accession number type (e.g. *Hymenoscyphus pseudoalbidus* | GU586904 |

Correspondence: Urmas Kõljalg, Fax: +372 7376380;
E-mail: urmas.koljalg@ut.ee

- ✓ "Species Hypothesis"
- ✓ Secuencias de referencia



UNITE

Dos subniveles de agrupamiento para definir Unidades Taxonómicas Operacionales, OTUs (97%, 97.5%, 98%, 98.5%, 99%):

1. Nivel género/subgénero
2. Nivel específico –"Species Hypothesis" SH

Sequence ID	UNITE taxon name	INSD taxon name	Country	DNA source
more | EU096525	**Hymenoscyphus ginkgonis**	Hymenoscyphus (Hymenoscyphus sp KUS_F51352)	South Korea	Fruitbody (**Holotype**)
more | EU219982		Hymenoscyphus (Hymenoscyphus sp KUS_F51854)		
more | AJ430396		Hymenoscyphus (Hymenoscyphus fructigenus)	Norway	Spore
more | GU586933		Hymenoscyphus (Hymenoscyphus fructigenus)	Germany	Fruitbody
more | DQ431171	**Hymenoscyphus fructigenus**	Hymenoscyphus (Hymenoscyphus fructigenus)		Living culture
more | AY348591		Hymenoscyphus (Hymenoscyphus scutulus)	China	
more | AY789432	**Hymenoscyphus scutula**	Hymenoscyphus (Hymenoscyphus scutula)		Living culture
more | AY348590		Hymenoscyphus (Hymenoscyphus scutulus)	China	
more | AY348589		Hymenoscyphus (Hymenoscyphus scutulus)	China	
more | GU586900	**Hymenoscyphus albidus**	Hymenoscyphus (Hymenoscyphus albidus)	Switzerland	Fruitbody
more | HM193456	**Hymenoscyphus albidus**	Hymenoscyphus (Hymenoscyphus albidus)	France	Fruitbody
more | HM193457	**Hymenoscyphus albidus**	Hymenoscyphus (Hymenoscyphus albidus)	France	Fruitbody
more | HM193458		Hymenoscyphus (Hymenoscyphus albidus)	France	Fruitbody

/Cutout of 22 nearly identical sequences/

more | GU586894		Hymenoscyphus (Hymenoscyphus albidus)	Switzerland	Fruitbody
more | GU586895		Hymenoscyphus (Hymenoscyphus albidus)	Switzerland	
more | GU586896		Hymenoscyphus (Hymenoscyphus albidus)	Switzerland	Fruitbody
more | GU586897		Hymenoscyphus (Hymenoscyphus albidus)	Switzerland	Fruitbody
more | GU586898		Hymenoscyphus (Hymenoscyphus albidus)	Switzerland	Fruitbody
more | GU586899	**Hymenoscyphus albidus**	Hymenoscyphus (Hymenoscyphus albidus)	Switzerland	Fruitbody
more | GU586876	**Hymenoscyphus albidus**	Hymenoscyphus (Hymenoscyphus albidus)	France	Fruitbody
more | GU586910	**Hymenoscyphus albidus**	Hymenoscyphus (Hymenoscyphus albidus)	Switzerland	Fruitbody
more | GU586920		Hymenoscyphus (Hymenoscyphus albidus)	Switzerland	Fruitbody
more | HM193464		Hymenoscyphus (Hymenoscyphus albidus)	France	
more | HM193463	**Hymenoscyphus albidus**	Hymenoscyphus (Hymenoscyphus albidus)	France	Fruitbody
more | JQ658352	**Hymenoscyphus albidus**	Hymenoscyphus (Hymenoscyphus albidus)	Norway	
more | JQ658351	**Hymenoscyphus albidus**	Hymenoscyphus (Hymenoscyphus albidus)	Norway	Fruitbody
more | GU797150	**Hymenoscyphus pseudoalbidus**	Chalara (Chalara fraxinea)	Finland	
more | GU797156	**Hymenoscyphus pseudoalbidus**	Chalara (Chalara fraxinea)	Finland	
more | GU797151	**Hymenoscyphus pseudoalbidus**	Chalara (Chalara fraxinea)	Finland	
more | HM140831		Chalara (Chalara fraxinea)	Italy	
more | FJ597977	**Hymenoscyphus pseudoalbidus**	Hymenoscyphus (Hymenoscyphus albidus)	Poland	
more | FJ771000		Chalara (Chalara fraxinea)	Estonia	
more | FJ228176		Chalara (Chalara fraxinea)	Sweden	
more | GU797154	**Hymenoscyphus pseudoalbidus**	Chalara (Chalara fraxinea)	Finland	
more | GU797153	**Hymenoscyphus pseudoalbidus**	Chalara (Chalara fraxinea)	Finland	
more | EU852352		Helotiales (uncultured Chalara)	Sweden	
more | FJ429375		Chalara (Chalara fraxinea)	Poland	

/Cutout of 50 nearly identical sequences/

more | HM140837		Chalara (Chalara fraxinea)	Slovenia	
more | HM140838		Chalara (Chalara fraxinea)	Slovenia	
more | GU797162	**Hymenoscyphus pseudoalbidus**	Chalara (Chalara fraxinea)	Finland	
more | HM014400	**Hymenoscyphus pseudoalbidus**	Chalara (Chalara fraxinea)	Lithuania	Plant bark
more | HM140832		Chalara (Chalara fraxinea)	Italy	
more | FR667687	**Hymenoscyphus pseudoalbidus**	Hymenoscyphus (Chalara fraxinea)	Belgium	
more | GU586921		Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Czech Republic	
more | FJ429386		Chalara (Chalara fraxinea)	Czech Republic	
more | GU586901	**Hymenoscyphus pseudoalbidus**	Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Germany	Fruitbody
more | GU586902	**Hymenoscyphus pseudoalbidus**	Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody
more | GU586903	**Hymenoscyphus pseudoalbidus**	Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody
more | GU586904	**Hymenoscyphus pseudoalbidus**	Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody (**Holotype**)
more | GU586905	**Hymenoscyphus pseudoalbidus**	Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody
more | GU586906	**Hymenoscyphus pseudoalbidus**	Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody
more | GU586907		Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody
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more | GU586912		Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody
more | GU586913		Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody

/Cutout of 43 sequences/

UNITE

Cada cluster tiene un código único ……. *Hymenoscyphus*/UCL5_005639 ……. 172 sec

SH

97% 99%

DSH

97% Clustering based on: Full ITS Order sequences by: combined Download alignment as a FASTA file

Send clusters to clipboard

Sequence ID	UNITE taxon name	INSD taxon name	Country	DNA source
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more | EU219982		Hymenoscyphus (Hymenoscyphus sp KUS_F51854)		
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more | GU586933		Hymenoscyphus (Hymenoscyphus fructigenus)	Germany	Fruitbody
more | DQ431171	**Hymenoscyphus fructigenus**	Hymenoscyphus (Hymenoscyphus fructigenus)		Living culture
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more | GU586900	**Hymenoscyphus albidus**	Hymenoscyphus (Hymenoscyphus albidus)	Switzerland	Fruitbody
more | HM193456	**Hymenoscyphus albidus**	Hymenoscyphus (Hymenoscyphus albidus)	France	Fruitbody
more | HM193457	**Hymenoscyphus albidus**	Hymenoscyphus (Hymenoscyphus albidus)	France	Fruitbody
more | HM193458		Hymenoscyphus (Hymenoscyphus albidus)	France	Fruitbody

/Cutout of 22 nearly identical sequences/

more | GU586894		Hymenoscyphus (Hymenoscyphus albidus)	Switzerland	Fruitbody
more | GU586895		Hymenoscyphus (Hymenoscyphus albidus)	Switzerland	
more | GU586896		Hymenoscyphus (Hymenoscyphus albidus)	Switzerland	Fruitbody
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more | GU586910	**Hymenoscyphus albidus**	Hymenoscyphus (Hymenoscyphus albidus)	Switzerland	Fruitbody
more | GU586920		Hymenoscyphus (Hymenoscyphus albidus)	Switzerland	Fruitbody
more | HM193464		Hymenoscyphus (Hymenoscyphus albidus)	France	
more | HM193463	**Hymenoscyphus albidus**	Hymenoscyphus (Hymenoscyphus albidus)	France	Fruitbody
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more | GU586904	**Hymenoscyphus pseudoalbidus**	Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody (**Holotype**)
more | GU586905	**Hymenoscyphus pseudoalbidus**	Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody
more | GU586906	**Hymenoscyphus pseudoalbidus**	Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody
more | GU586907		Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody
more | GU586908		Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody
more | GU586909		Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody
more | GU586911		Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody
more | GU586912		Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody
more | GU586913		Hymenoscyphus (Hymenoscyphus pseudoalbidus)	Switzerland	Fruitbody

Hymenoscyphus pseudoalbidus/GU586904/SH13 3781.05FU

/Cutout of 43 sequences/

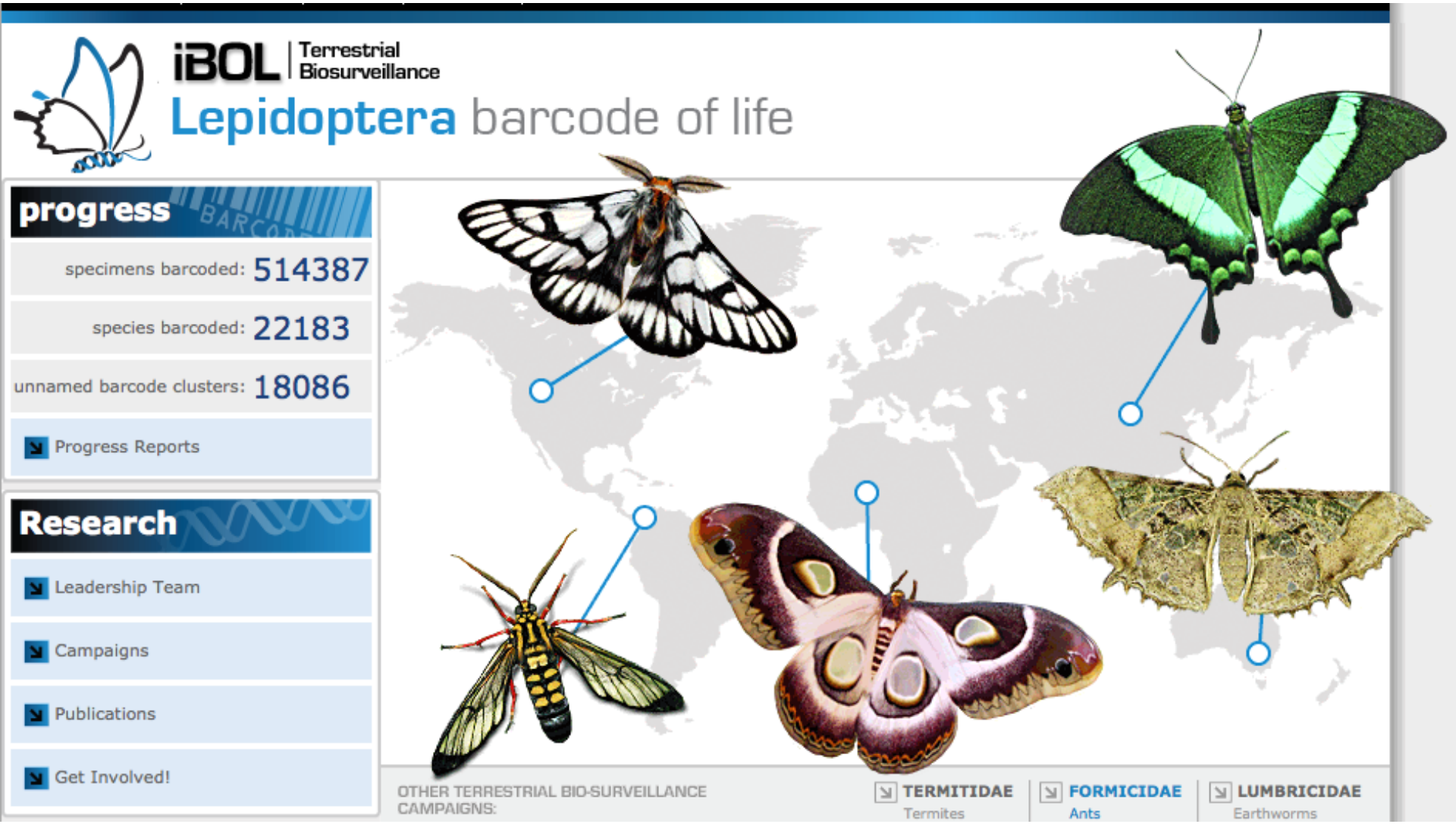
UNITE

Secuencias	Nº
Secuencias ITS	350.000
Bien identificadas	130.000
Mal identificadas	35.000
Sin identificación	175.000

Valor umbral similitud	Nº SH
97 %	44537
97.5 %	48007
98 %	52481
98.5 %	58594
99 %	68938

Valor umbral 98.5 %	
“Species Hypothesis”	52.481
Phyllum (División) conocido	41.094
Phyllum (División) desconocido	11.387

iBOL


iBOL | Terrestrial Biosurveillance
Lepidoptera barcode of life
progress
specimens barcoded: 514387
species barcoded: 22183
unnamed barcode clusters: 18086
Progress Reports
Research
Leadership Team
Campaigns
Publications
Get Involved!
OTHER TERRESTRIAL BIO-SURVEILLANCE CAMPAIGNS:
TERMITIDAE
Termites
FORMICIDAE
Ants
LUMBRICIDAE
Earthworms

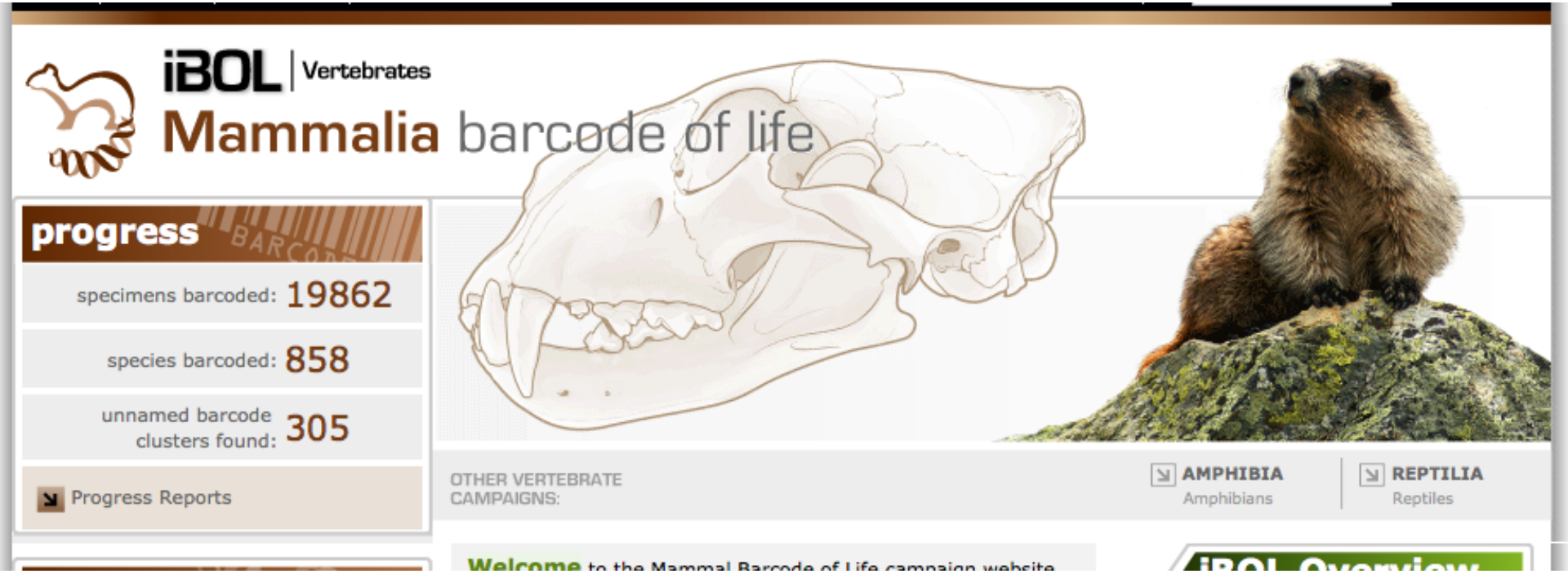
iBOL


Home | About Us | Contact Us
iBOL Working Group | 1.1 Vertebrates
Fish barcode of life (FISH-BOL)
international BARCODE OF LIFE
progress
specimens barcoded: 96425
species barcoded: 10267
unnamed barcode clusters found: 2029
Progress Reports
Related Barcoding Campaigns:
MammaliaBOL
iBOL WG 1.1
MarineBOL
iBOL WG 1.8

iBOL


marine barcode of life
The Blog
The Partners
The Team
The Project
Species Checklist | MarBOL Progress Report | CAML Progress Report | Protocols | Upcoming Meetings | Spring 2009 Workshops
Google Custom Search
Search
Welcome
"... the only other place comparable to these marvelous nether regions, must surely be naked space itself, out far beyond atmosphere, between the stars, where sunlight has no grip upon the dust and rubbish of planetary air, where the blackness of space, the shining planets, comets, suns, and stars must really be closely akin to the world of life as it appears to the eyes of an awed human being, in the open ocean, one half mile down." William Beebe, 1934.
progress
specimens barcoded
37182
species barcoded
6199
View detailed progress reports

iBOL


iBOL | Vertebrates
Mammalia barcode of life
progress
specimens barcoded: 19862
species barcoded: 858
unnamed barcode clusters found: 305
Progress Reports
OTHER VERTEBRATE CAMPAIGNS:
AMPHIBIA
Amphibians
REPTILIA
Reptiles
Welcome to the Mammal Barcode of Life campaign website

Colecciones Historia Natural
vs
Estudios moleculares

✓ Fundamentales en trabajos de revisión de grupos taxonómicos.

- Delimitar las especies.
- Descubrir y describir nuevas especies.
- Especies crípticas.

Filogenia Biogeografía

Conservación Relaciones patógeno-hospedante ….

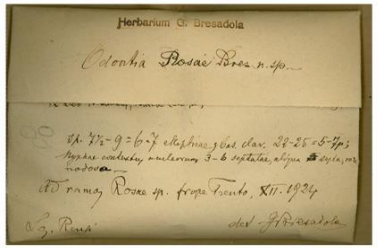
Hyphodermella (Fungi, Agaricomycotina)

Mycol Progress (2010) 9:585–596
DOI 10.1007/s11557-010-0666-5

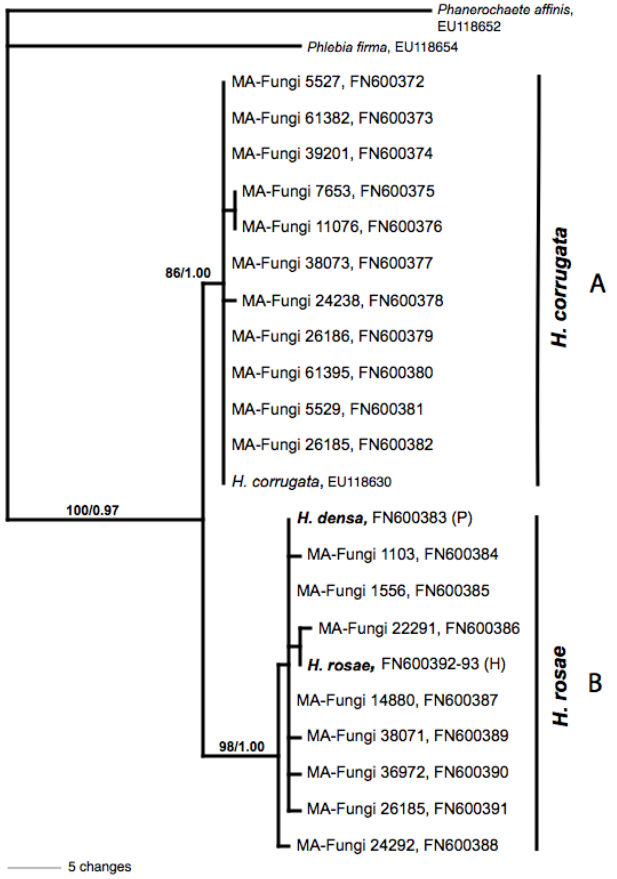
ORIGINAL ARTICLE

Morphological and molecular studies of *Hyphodermella* in the Western Mediterranean area

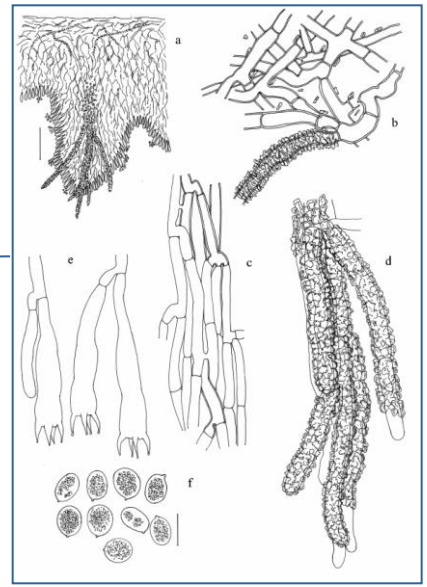
M. Teresa Telleria · Margarita Dueñas · Ireneia Melo · María P. Martín



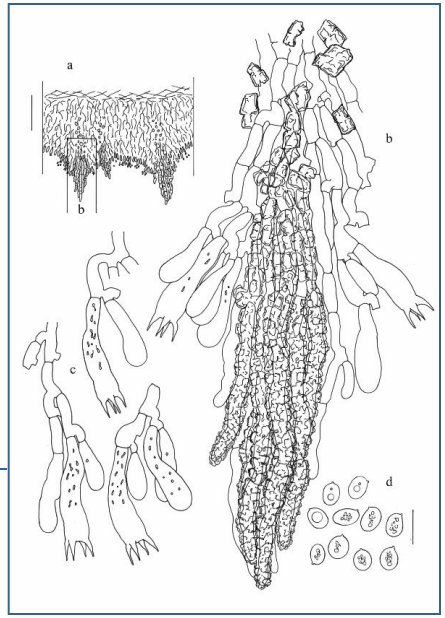
H. rosae
Type 1928



H. corrugata



H. rosae

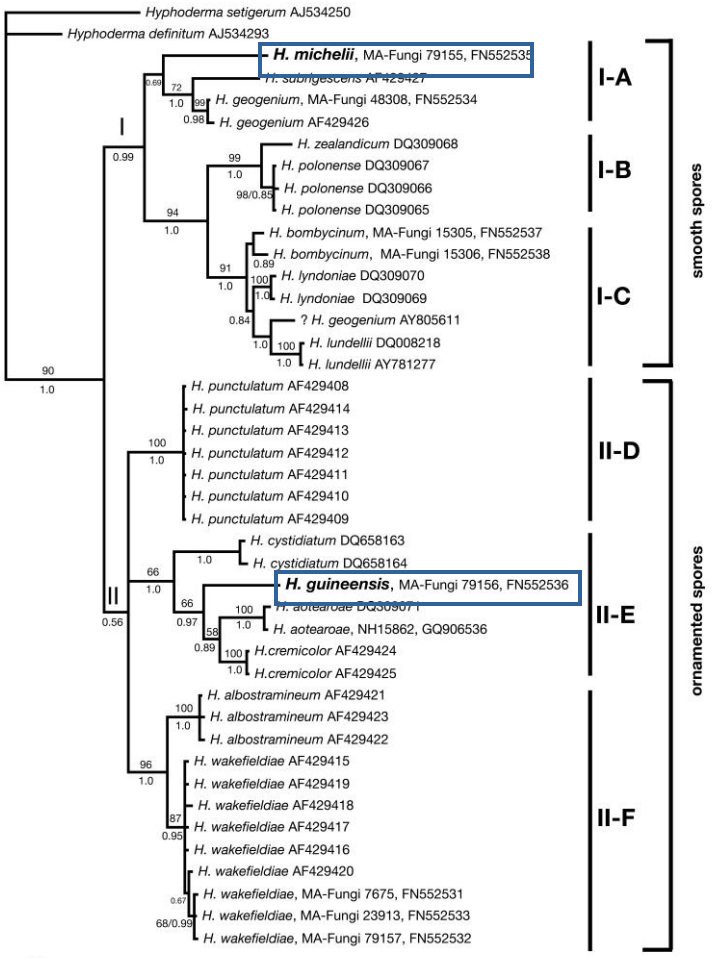


Hypochnicium (Fungi, Agaricomycotina)

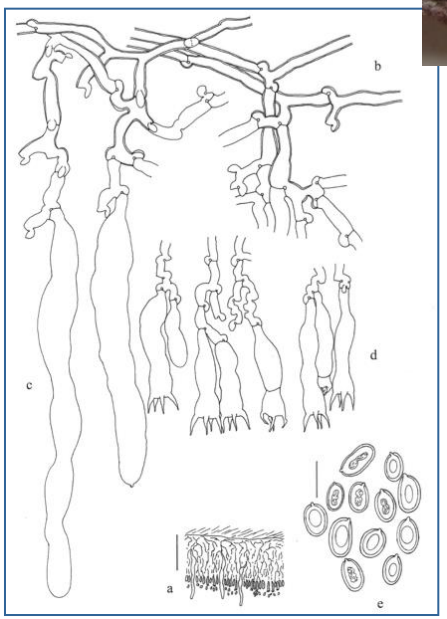
M. Teresa Telleria[1]
Margarita Dueñas
Departamento de Micología, Real Jardín Botánico, CSIC, Plaza de Murillo, 2. 28014 Madrid, Spain
Ireneia Melo
Jardim Botânico (MNHN), Universidade de Lisboa, CBA/FCUL, Rua da Escola Politécnica 58, 1250-102 Lisboa, Portugal
Nils Hallenberg
Department of Plant and Environmental Sciences, Carl Skottsberg Gata 22b, S-405 30 Göteborg, Sweden
María P. Martín
Departamento de Micología, Real Jardín Botánico, CSIC, Plaza de Murillo, 2. 28014 Madrid, Spain

Mycologia, 102(6), 2010, pp. 1426–1436. DOI: 10.3852/09-242

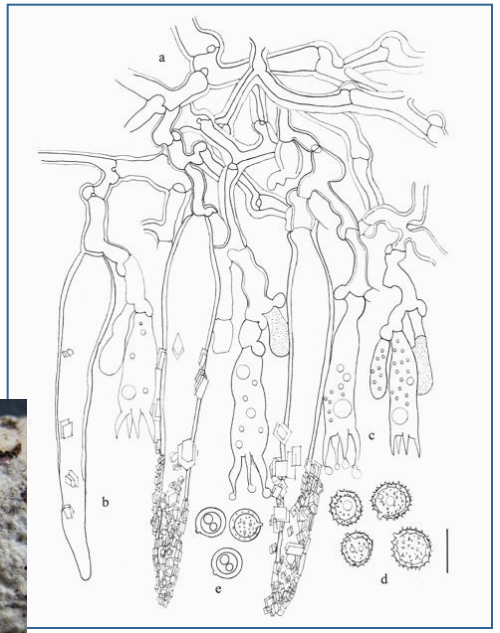
A re-evaluation of *Hypochnicium* (Polyporales) based on morphological and molecular characters



H. michelii



H. guineensis



Astraeus (Fungi, Agaricomycotina, O. Boletales)

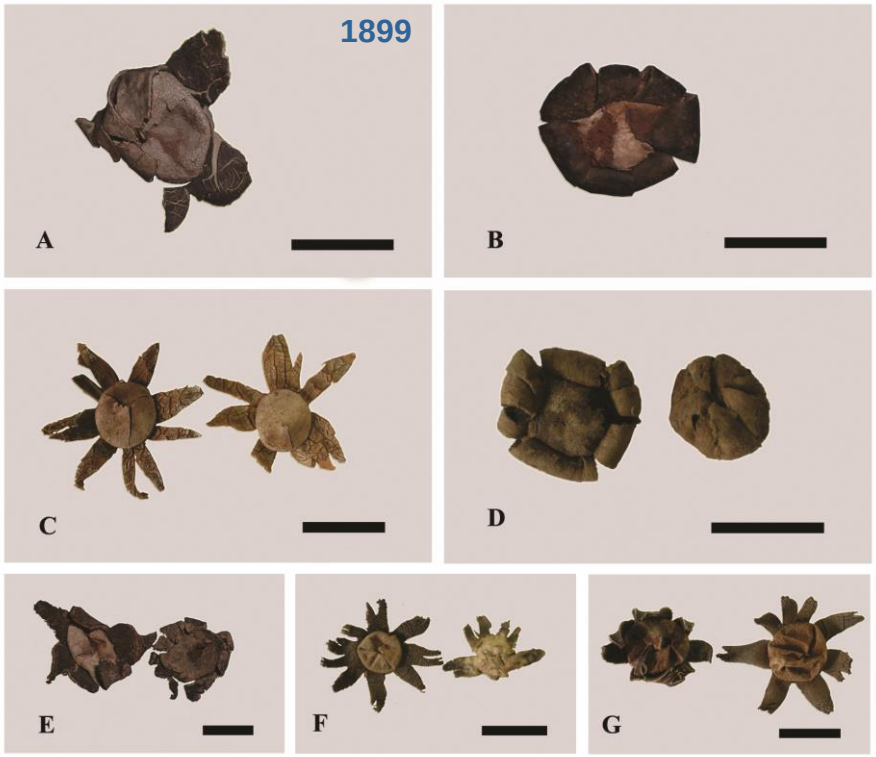
Astraeus: hidden dimensions

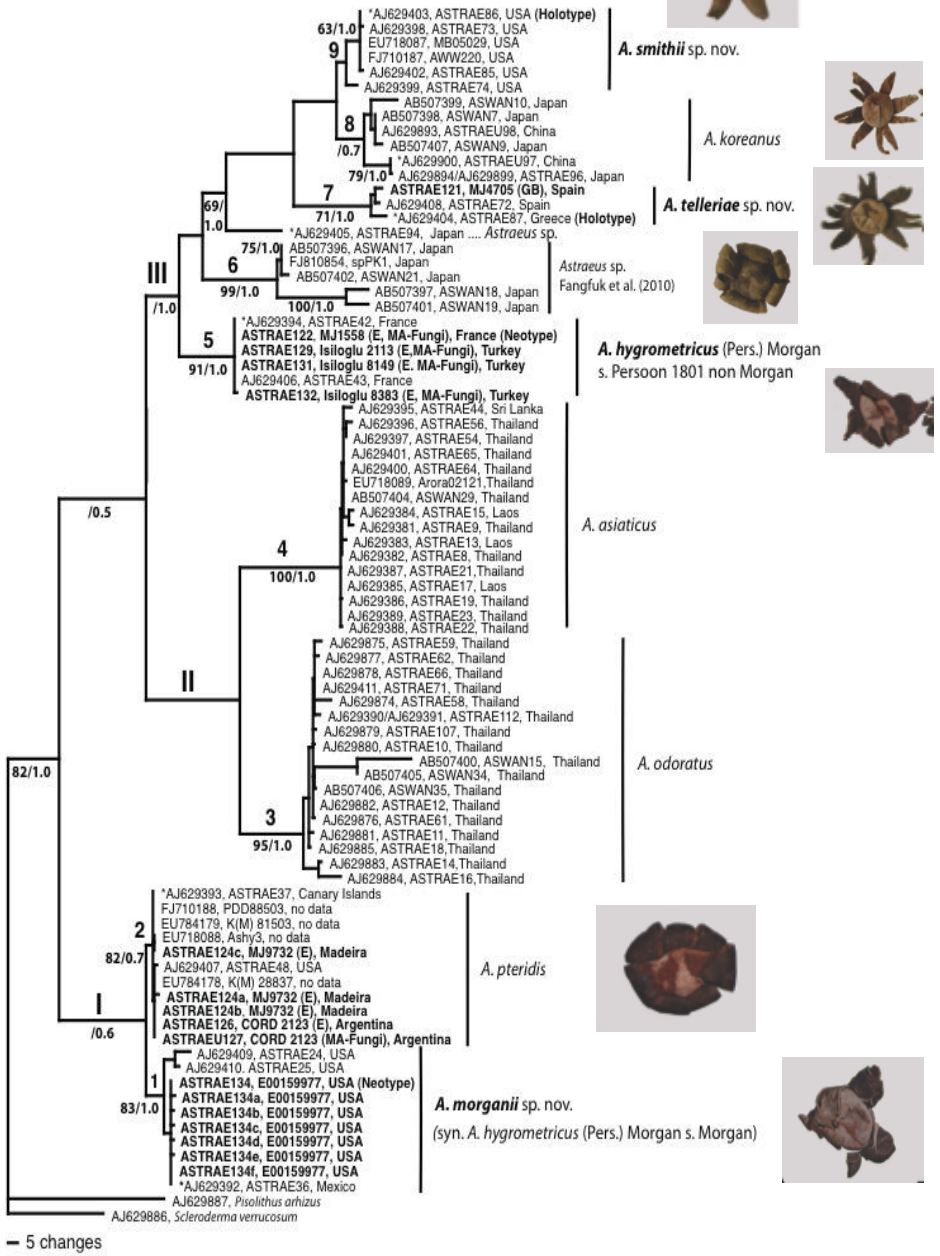
Cherdchai Phosri[1], María P. Martín[2], and Roy Watling[3]

[1]Division of Science, Faculty of Liberal Arts and Science, Nakhon Phanom University, 167 Naratchakouy Sub-District, Muang District, Nakhon Phanom, 48000, Thailand

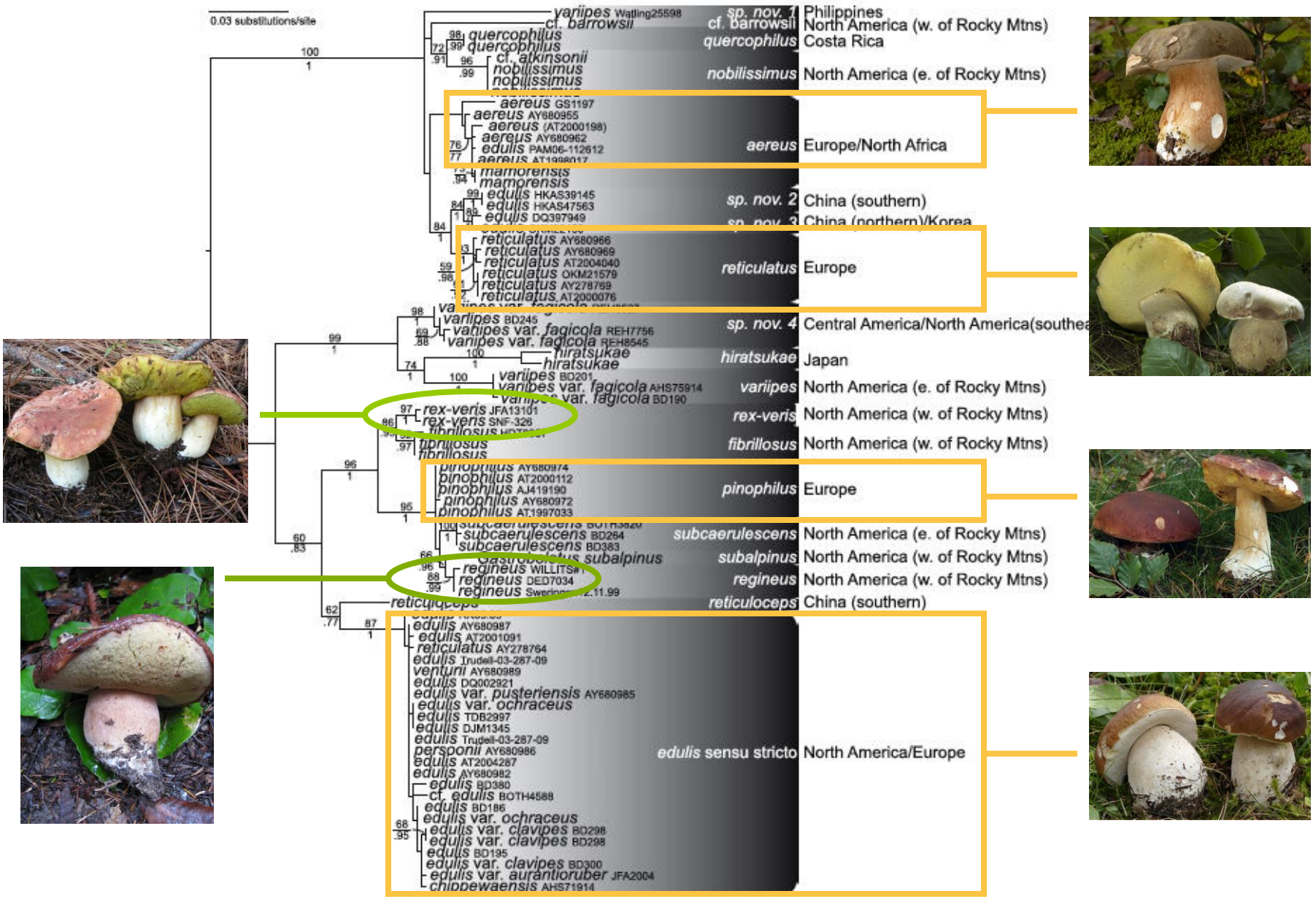
[2]Departmento de Micología, Real Jardín Botánico, RJB-CSIC. Plaza de Murillo 2, 28014, Madrid, Spain; corresponding author e-mail: maripaz@rjb.csic.es

[3]Caledonian Mycological Enterprises, 26 Blinkbonny Avenue, Edinburgh EH4 3HU, UK





Boletus (Fungi, Agaricomycotina, O. Boletales)



Cuscuta (F. Convolvulaceae)

Systematic Botany (2007), 32(4): pp. 899–916

Phylogeny of *Cuscuta* subgenus *Cuscuta* (Convolvulaceae) Based on nrDNA ITS and Chloroplast *trnL* Intron Sequences

MIGUEL A. GARCÍA[1] and MARÍA P. MARTÍN

Real Jardín Botánico, Consejo Superior de Investigaciones Científicas, Plaza de Murillo 2, 28014 Madrid, Spain

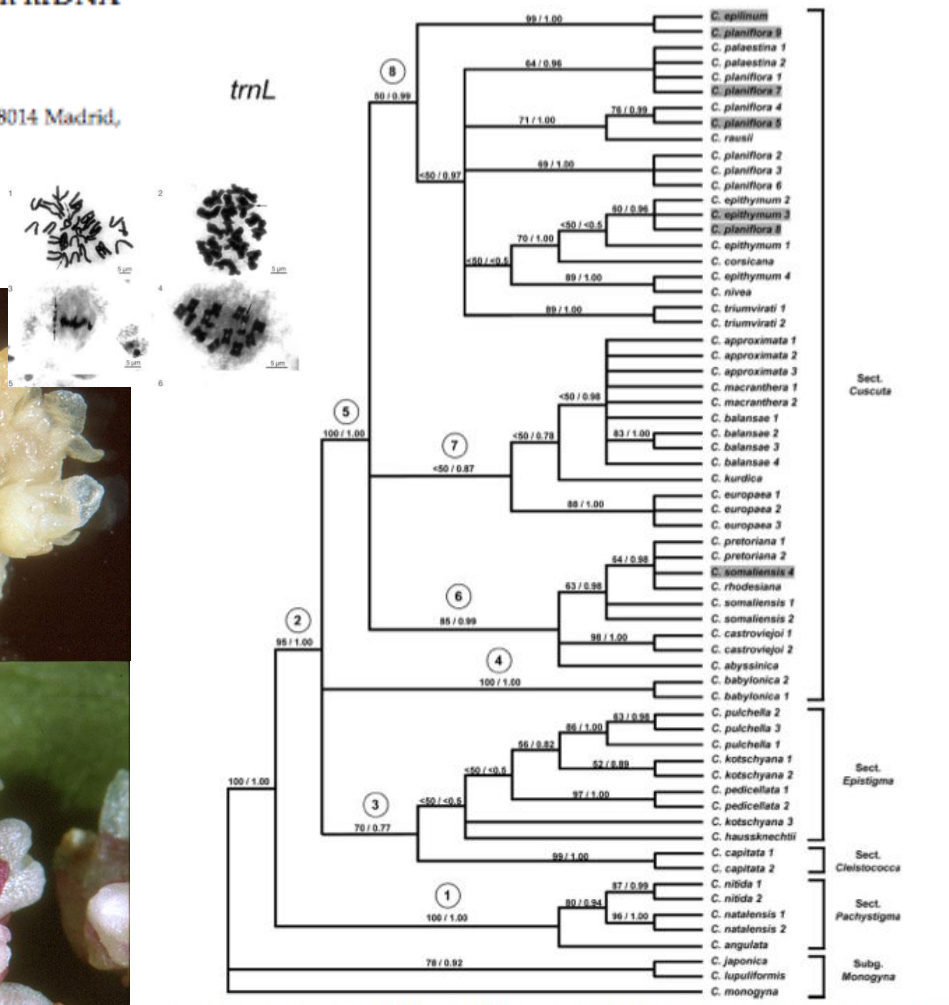


FIG. 1. Strict consensus of 564 equally parsimonious trees obtained from the analysis of the *trnL* intron sequences. Numbers above branches are bootstrap support/Bayesian posterior probability. Major clades are labeled with numbers inside circles and referred to in the text. Accessions showing topological incongruence with the ITS consensus trees in clades with moderate or high support are shaded. *Cuscuta approximata* subsp. *macranthera* and *C. epithymum* subsp. *corsicana* are labeled as *C. macranthera* and *C. corsicana*, respectively.

Plumularia (Animalia, O. Cnidaria)

Molecular Phylogenetics and Evolution 76 (2014) 1–9

Contents lists available at ScienceDirect

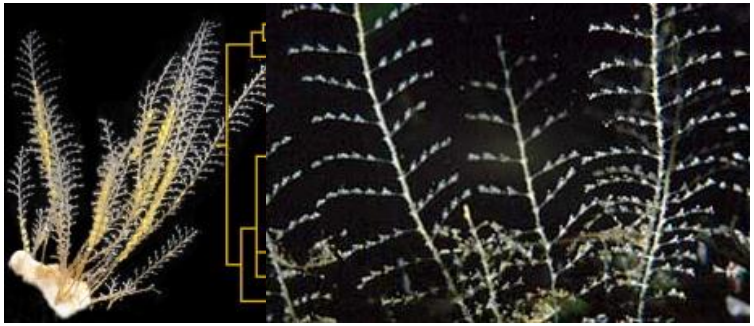
Molecular Phylogenetics and Evolution

journal homepage: www.elsevier.com/locate/ympev

High genetic diversity in the hydroid *Plumularia setacea*: A multitude of cryptic species or extensive population subdivision?

Peter Schuchert

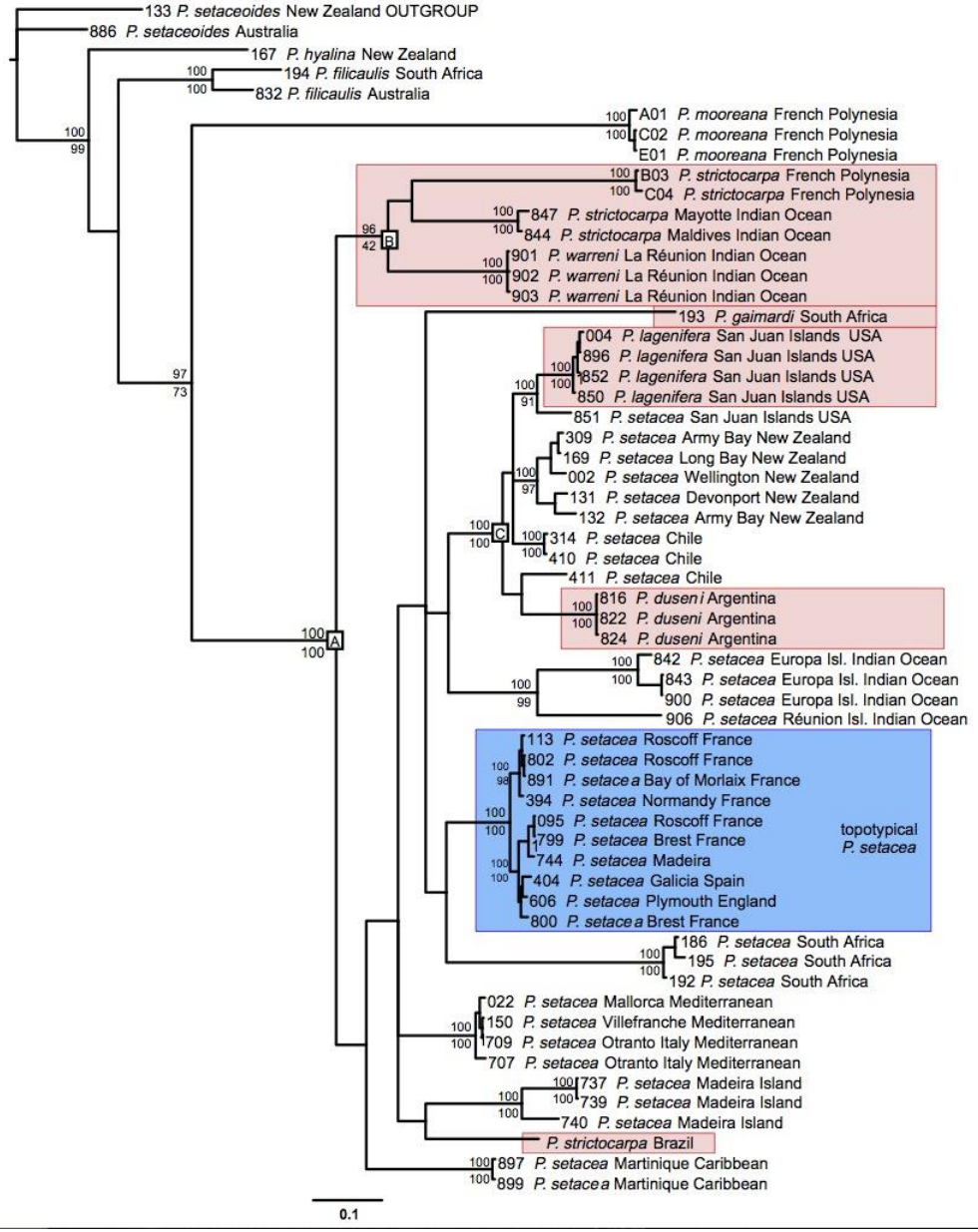
Natural History Museum of Geneva, Route de Malagnou 1, CH-1208 Geneva, Switzerland



2. Material and methods

2.1. Collection and identification of samples

Plumularia colonies were collected at various localities as given in Table 1. Identifications were made based on morphological characters using Millard (1975), Cornelius (1995), and other studies cited in Schuchert (2013a, 2013b), therefore using a morphotype species concept. One to three plumes per sample were preserved in 95% ethanol and kept at −20 °C. *Plumularia gaimardi* has previously been identified as *P.* cf. *lagenifera* in Leclère et al. (2009; 16S sequence Genbank number FJ550491), but following Schuchert (2013a) the identification of this specimen had to be revised.

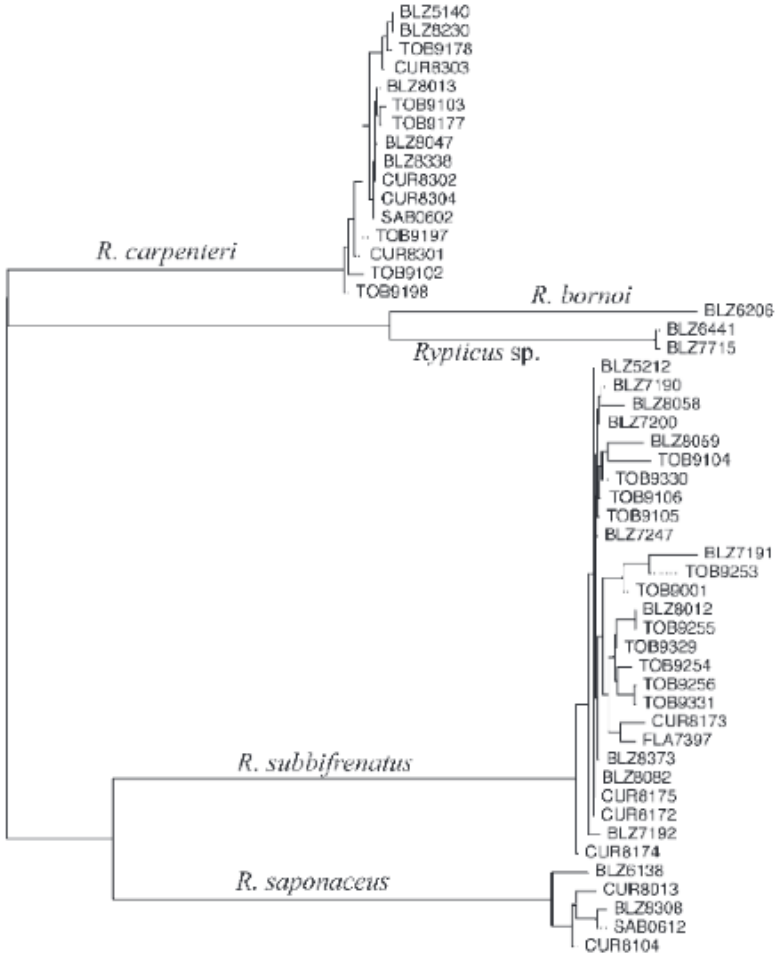


Rypticus (Animalia, O. Perciformes)

Copeia 2012, No. 1, 23–36

A New Species of Soapfish (Teleostei: Serranidae: *Rypticus*), with Redescription of *R. subbifrenatus* and Comments on the Use of DNA Barcoding in Systematic Studies

Carole C. Baldwin[1] and Lee A. Weigt[2]



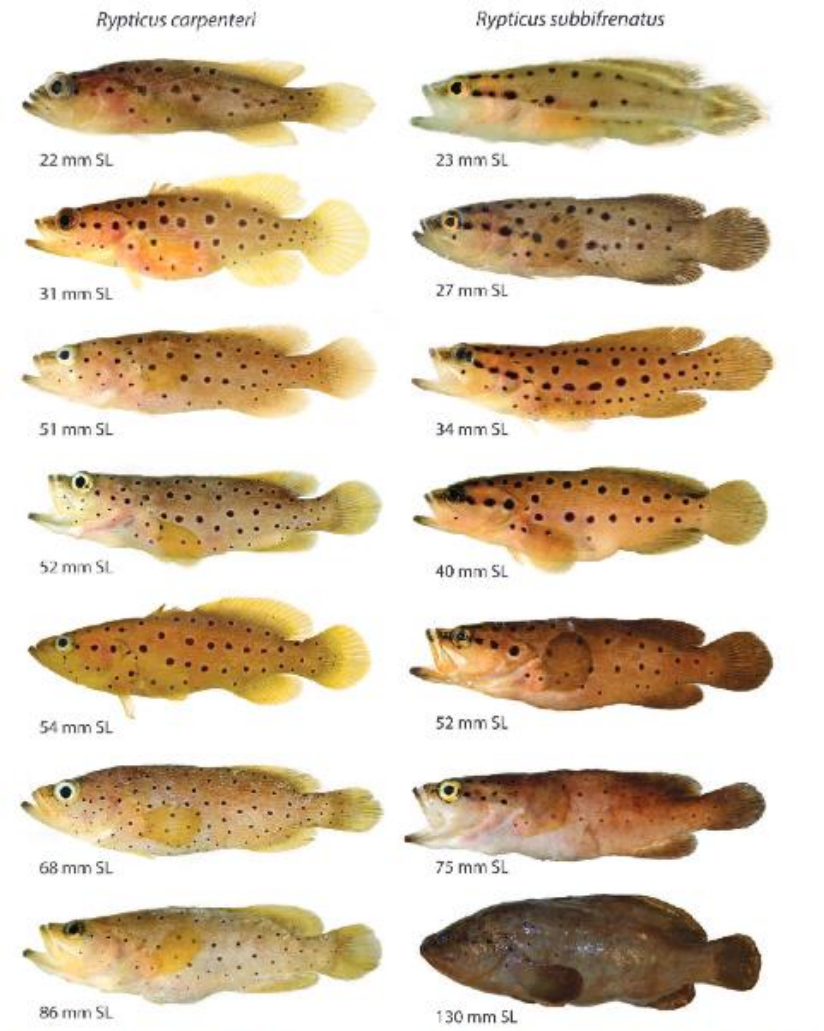
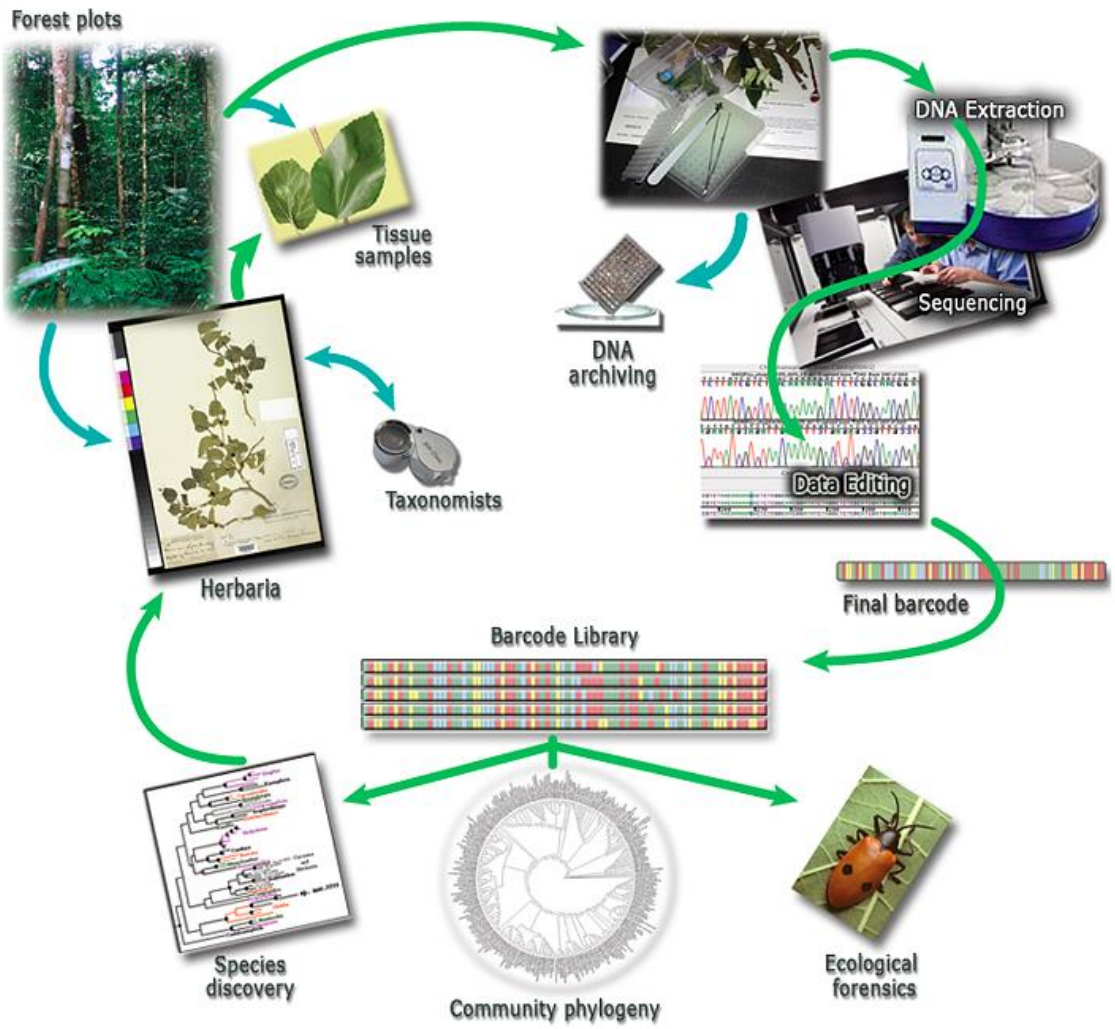
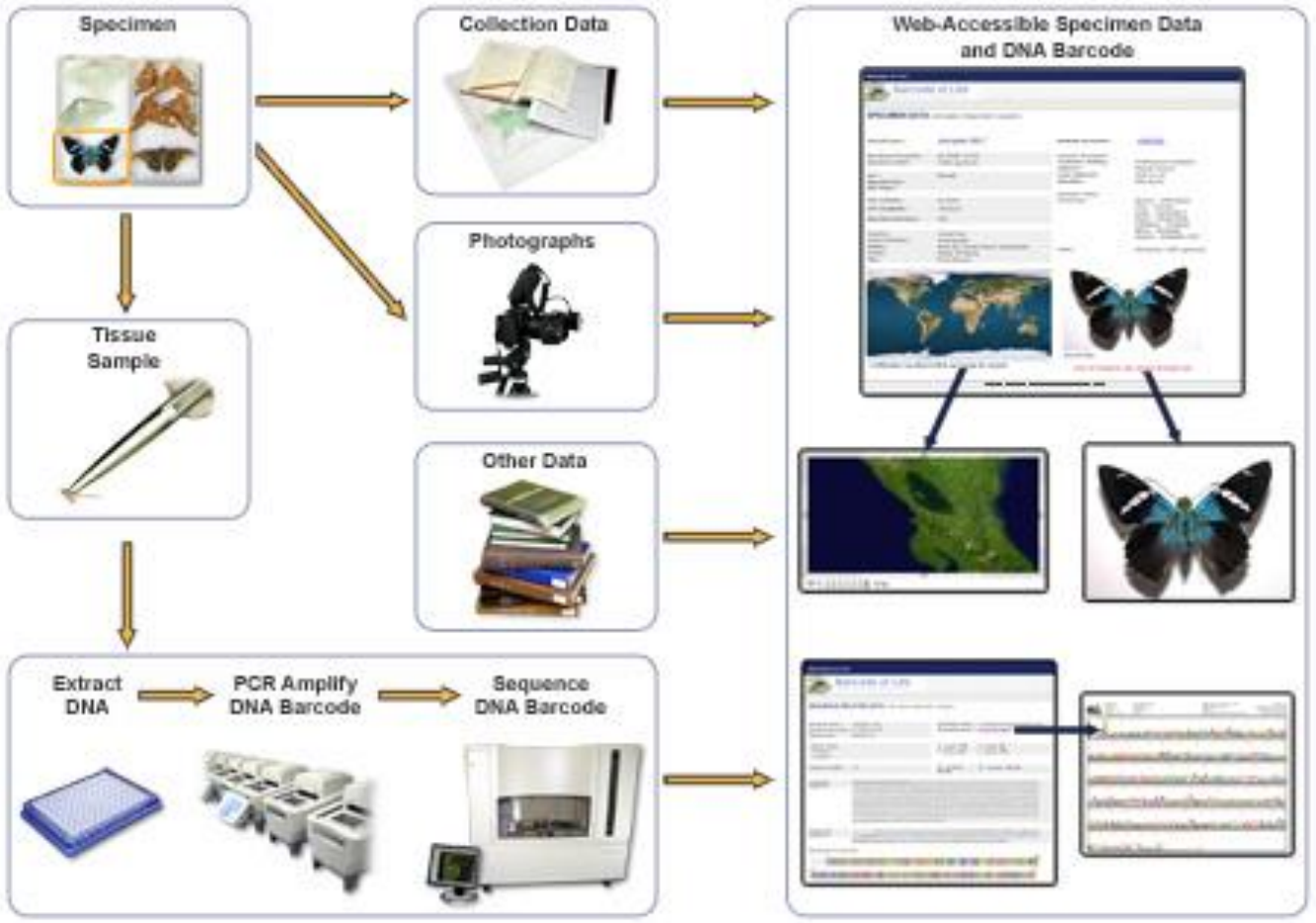


Fig. 4. Comparisons of color patterns between *Rypticus carpenteri*, new species, and *Rypticus subbifrenatus*. Left column, top to bottom: USNM 401043, DNA number CUR 8304; USNM 401040, DNA number BLZ 8230; USNM 401294, DNA number BLZ 5140 (photo by J. Mounts); USNM 401044, DNA number TOB 9103; USNM 387946, holotype (photo by J. T. Williams); USNM 401297, DNA number TOB 9197; USNM 401046, DNA number TOB 9178. Right column, top to bottom: USNM 401279, DNA number BAH 10090; USNM 401265, DNA number TOB 9256; USNM 401274, DNA number BLZ 5212 (photo by J. Mounts); USNM 401245, DNA number BLZ 7190 (photo by J. Mounts); USNM 401262, DNA number TOB 9106; USNM 401037, DNA number BLZ 8059; DNA number FLA 7397 (no voucher).

El papel de las colecciones de historia natural en los estudios moleculares



El papel de las colecciones de historia natural en los estudios moleculares



El papel de las colecciones de historia natural en los estudios moleculares