

*USDA-ARS Collection
of Entomopathogenic
Fungal Cultures*

ARSeF

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Emerging Pests and Pathogens Research Unit
Robert W. Holley Center for Agriculture & Health
539 Tower Road
Ithaca, NY 14853

L. A. Castrillo (Acting Curator)
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ARSEF COLLECTION STAFF

Louela A. Castrillo, Ph.D.

Acting Curator and Insect Pathologist/Mycologist

Louela.Castrillo@usda.gov

(alt. email: lac48@cornell.edu)

phone: [+1] 607 255-7008

Micheal M. Wheeler

Biological Technician

Micheal.Wheeler@usda.gov

(alt. e-mail: mmw5@cornell.edu)

phone: [+1] 607 255-1274

**USDA-ARS Emerging Pests and Pathogens Research Unit
Robert W. Holley Center for Agriculture & Health
538 Tower Road
Ithaca, NY 14853-2901 USA**

New nomenclatural rules bring new challenges, and new taxonomic revisions for entomopathogenic fungi

Richard A. Humber

Insect Mycologist and Curator, ARSEF (*Retired August, 2017*)

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The previous (2007) version of this introductory material for ARSEF catalogs sought to explain some of the phylogenetically-based rationale for major changes to the taxonomy of many key fungal entomopathogens, especially those involving some key conidial and sexual genera of the ascomycete order Hypocreales. Phylogenetic revisions of the taxonomies of entomopathogenic fungi continued to appear, and the results of these revisions are reflected in the ARSEF catalog as quickly and completely as we can do so.

As many of people dealing with entomopathogenic fungi are already aware, there has been one still recent event that has a more far-reaching and pervasive influence whose magnitude still remains to be fully appreciated, but that leaves much of the mycological world (including insect mycology) semi paralyzed by uncertainty and worried about the extent and impacts of changes that still remain unformalized and, hence, a continuing subject for speculation and prediction. At the 2011 International Botanical Congress in Melbourne (Australia), however, a far-reaching nomenclatural revolution was imposed on the fungal world as the result of the abandonment of the existing dual nomenclatural standard that allowed separate, valid names for anamorphic and teleomorphic stages of pleomorphic fungi. This dual nomenclatural system was replaced by a new standard allowing only *one* correct name for any pleomorphic fungus regardless of how many morphs might have been previously and validly recognized for that fungus. The new rule (also known as One Fungus = One Name, or, even more concisely, 1F=1N) has deeply split mycologists into opposed camps greeting the new rules with either cheers or jeers. Whether one supports or opposes this change (for the record, I strongly object to this change), these basic points are indisputable and must be accepted (whether happily or not):

- Dual nomenclature is no longer recognized (now and for the indefinite future).
- 1F=1N is the **only** nomenclatural standard applicable for the nomenclature of pleomorphic fungi.
- The main impacts of 1F=1N are apparent at the rank of genera.
- After the competing possible names are evaluated, a **single** correct generic name will be chosen by decisions of committees as defined by the International Association for Plant Taxonomy (IAPT) which oversees the ***International Code of Nomenclature for algae, fungi and plants (ICN; McNeill et al. 2012*** or online at <http://www.iapt-taxon.org/nomen/main.php>).
- The use of the specified correct names, once fully confirmed, is obligatory and **must** be followed because all such names will be treated as if they have been conserved against all possible alternative names.
- Other taxonomic changes (especially below the generic level)—e.g., when the chosen correct generic name is of a different gender from that which it

replaces, specific epithets must be changed to reflect the newer generic gender as when *Paecilomyces farinosus* became *Isaria farinosa*.

- Some very familiar, cherished generic names will disappear, and the traditional generic circumscriptions for pleomorphic fungi will expand and be revised to reflect all phylogenetically related morphs for their included taxa.

How correct names will be chosen: The ultimate selection of correct names over all possible competing names will depend on a number of sequential actions by a significant number of persons in a series of committees, and will be subject to all of the difficulties that routinely accompany committee actions. The exact set of actions that will be occurring still remain uncertain in many quarters. For fungi in the Hypocreales (the entomopathogens most affected by the new rule and also raising the greatest concerns for insect pathologists), there is a world-wide group of mycologists with strong taxonomic/systematics expertise who will consider the demonstrated phylogenies of these fungi, assemble lists of generic names that appear to apply to monophyletic groups of taxa, and that will formally propose a set of choices of correct genera (and their synonyms) to the IAPT's Nomenclature Committee for Fungi. Once this committee has cast their votes to accept (or to modify) any of the proposed choices, the lists of accepted and rejected names will be sent forward to the General Committee of the IAPT for ratification, and then to the Nomenclature Session of the next International Botanical Congress (the next such meeting will be in 2017, in Beijing; any reports from the Committee for Fungi that miss the deadlines for this next Congress would be passed on to the following Congress in 2023 (wherever that may be held). No nomenclatural changes or decisions of any type become completely official until they have been accepted by majority votes during the Nomenclature Session at an International Botanical Congress and then ratified by a plenary vote of the Congress participants at that Congress. It is interesting to note that the only constitutive reason for holding any International Botanical Congress is actually for holding these Nomenclatural Sessions (before the main Congress) and the final, obligatory vote on the acceptance of the report from the Nomenclatural Session during the closing plenary session of the Congress.

The selection of which name among competing possibilities will be selected as correct is not entirely arbitrary, but it is also necessary to remember that it will be a matter of consensus opinion among the members of the committees that will consider the proposals coming to them. The criteria that are supposed to be used for ultimately choosing the names that will be used are to be based in the first place on priority of publication (which name is the oldest available name). There is no longer any automatic preference in the Code to choose names as correct that are typified by teleomorphs; names for conidial and sexual states are to be treated on an equal basis for purposes of selecting the correct name.

It is apparent that even now (early in 2014), there is still a great deal of uncertainty among mycologists about exactly how to handle names of pleomorphic fungi during this transitional period from the defunct dual nomenclatural system to the new rule. Hawksworth (2012) provides what may be the most comprehensive opinion about how to proceed from this point, but it is only one opinion about how the mechanics should proceed.

Changes to the International Code of Nomenclature (ICN) for botanical and related taxa are supposed to result in greater stability and predictability for the names of organisms covered by these rules. Whether the newly adopted rules do this remains a source of active and heated controversy. It probably is fair to say that a new stability will be an eventual result of these new rules, and that within another decade many of the fundamental arguments about the value of these changes will have been settled. I will note that the names for the entomopathogenic hypocrealean fungi (which comprise the vast majority of fungi in the ARSEF culture collection) are among the fungi most drastically affected by this dramatic change in the ICN rules. While nomenclatural stability will eventually come, it will still be a number of years before that stabilization process has been completed and before the resulting changes are fully incorporated into the scientific literature. It is probable that all or, at least, the great majority of the basic changes outlined here will be ready for final ratification during the 2017 International Botanical Congress in Beijing.

Just as there is enormous confusion and controversy still about whether the abandonment of dual nomenclature for the 1F=1N rule was a good and necessary change or will prove to be a superfluous and destructive catastrophe, there are many analyses covering a range of opinions from opposed to and troubled by the change (e.g., [Korf 2005](#) precedes the adoption of the new rules but raises important and pertinent issues; [Gams et al. 2011, 2012](#)) to those who seem to be cautiously and a bit vigilantly supportive (e.g., [Braun 2012](#)) to those leading full-throated cheers for these changes ([Hawksworth 2011](#); [Hibbett & Taylor 2013](#)) to even a suggestion that the naming of fungi may cause more problems than it solves ([Money 2013](#)).

ARSEF responses to taxonomic revisions: The identifications in the ARSEF catalog have always incorporated new taxa and appropriately revised classifications as soon as the collection staff can confirm the correct new identifications for ARSEF holdings. We make every attempt in the catalog to note specifically when those identifications are based on genomic sequence data. For taxa where extensive molecular revisions have occurred, those isolates with genomically confirmed identifications—for example, for isolates of *Beauveria bassiana* and *Metarhizium anisopliae* in their molecularly redefined, phylogenetically narrowed, strict senses (***sensu stricto***)—are listed in the catalog as these species; isolates that have not been molecular confirmed are placed in separate listings for these species in their broad senses (***sensu lato***).

GENERAL AND PHYLOGENETIC RECLASSIFICATIONS OF FUNGI

The results of a global cooperative effort involving dozens of mycologists (including the curator of this collection) to reclassify the fungi according to phylogenetically sound principles based on the DNA sequence data for multiple genes has recently resulted in the publication of two monumentally important publications that completely rework mycological systematics. The earlier publication was a phylogenetic overview of virtually all fungi ([James et al. 2006](#)). The second publication ([Hibbett et al. 2007](#)) provided many of the necessary taxonomic readjustments that were indicated by the phylogenetic studies. The ITS locus sequence has been adopted as a supposedly universal biological bar code gene ([Schoch et al. 2012](#)) because of its wide usefulness for a vast range of fungi; however, reality has consistently indicated that the ITS sequence has very little usefulness for the identification of fungi in some important groups of ascomycete (***especially including*** taxa in the order Hypocreales). As is noted here, however, there have been many later phylogenetic studies that are important for the taxonomy and systematics of entomopathogenic fungi. Some of these major studies involving entomopathogens from the order Hypocreales are listed here by anamorphic or teleomorphic generic name:

Beauveria — [Rehner et al. 2011](#); [Kepler et al. 2017](#), [Khonsanit et al., 2020](#)

Fusarium — [O'Donnell et al. 2012](#)

Isaria - [Mongkolsamrit et al., 2018](#)

Metarhizium — [Bischoff et al. 2009](#); [Kepler & Rehner 2013](#); [Kepler et al. 2014](#)

Metacordyceps — [Kepler et al. 2012](#)

Polycephalomyces — [Kepler et al. 2013](#)

Table 1. UPDATES for probable outcomes under 1F=1N standards for which genera of entomopathogens in Hypocreales are likely to be treated as ‘correct’ differing (where underlined) from those suggested in RA Humber’s (2012) poster presented at the annual meeting of the Society for Invertebrate Pathology in Buenos Aires, AR.

Family Clavicipitaceae

Humber (2012)

Metarhizium (syn. *Metacordyceps*, *Nomuraea*, *Pochonia*, *Rotiferophthora*, etc.)

Aschersonia (syn. *Hypocrella*)

Other aschersonioid genera;

Moelleriella, *Orbiocrella*, *Regiocrella*, *Samuelsia*

Updated (see Kepler et al. 2014)

Metarhizium (syn. *Chamaeleomyces*, *Metacordyceps*, *Nomuraea*)

Pochonia

Metapochonia

Rotiferophthora

Aschersonia (syn. *Hypocrella*)

Other aschersonioid genera;

Moelleriella, *Orbiocrella*, *Regiocrella*, *Samuelsia*

Family Cordycipitaceae

Humber (2012)

Cordyceps (syn. *Beauveria*, *Isaria*, *Lecanicillium*, *Evlachovaea*, *Microhilum*, *Simplicillium*, etc.)

Torrubiella (syn. *Akanthomyces*, *Gibellula*, *Granulomanus*, *Pseudogibellula*)

Ascopolyporus

Conoidiocrella

Updated (see Kepler et al. 2017)*

Cordyceps (synonyms *Isaria*, *Microhilum*, *Evlachovaea*)

Beauveria

Gibellula (synonym: *Granulomanus*)

Hevansia

Ascopolyporus

Conoidiocrella

Simplicillium

Family Ophiocordycipitaceae

Humber (2012)

Elaphocordyceps (synonym *Tolypocladium*)

Ophiocordyceps (synonyms *Hirsutella*², *Hymenostilbe*, *Paraisaria*, *Sorosporella*, *Syngliocladium*)

Updated (see Quandt et al. 2014)*

Ophiocordyceps (synonyms *Hirsutella*, *Hymenostilbe*, *Paraisaria*, *Sorosporella*, *Syngliocladium*)

Purpureocillium

Tolypocladium (synonym *Elaphocordyceps*)

Table 2. Phylum Entomophthoromycota (Humber 2012)

Class Basidiobolomycetes	
Order Basidiobolales	
Family Basidiolaceae	<i>Basidiobolus</i> , <i>Schizangiella</i> ¹ , <i>Drechslerosporium</i> ¹
Class Neozygitomycetes	
Order Neozygitales	
Family Neozygitaceae	<i>Neozygites</i> , <i>Apterivorax</i> , <i>Thaxterosporium</i>
Class Entomophthoromycetes	
Order Entomophthorales	
Family Ancylistaceae	<i>Ancylistes</i> , <i>Conidiobolus</i> ² , <i>Macrobotophthora</i>
Family Completoriaceae	<i>Completozia</i>
Family Entomophthoraceae	
Subfamily Entomophthoroideae	<i>Entomophthora</i> , <i>Entomophaga</i> , <i>Eryniopsis</i> , <i>Massospora</i> ⁴
Subfamily Erynioideae ³	<i>Erynia</i> , <i>Furia</i> , <i>Orthomyces</i> , <i>Pandora</i> , <i>Strongwellsea</i> , <i>Zoophthora</i>
Family Meristacraceae ⁵	<i>Meristacrum</i> , <i>Tabanomyces</i>

¹ Genus with phylogenetic support but still awaiting formal description.

² Phylogenetic data indicate this genus must be revised and split.

³ Phylogenetic data support *Zoophthora*, but distinctions among other genera remain uncertain.

⁴ Subfamily Massosporoideae proposed by **Keller & Petrini (2005)** is not phylogenetically supported.

⁵ Two previously included genera—*Ballocephala* and *Zygnemomyces*—have been excluded from Entomophthoromycota and reclassified in subphylum Kickxellomycotina (see **Humber 2012**).

FLAGELLATE FUNGI AND FUNGAL ALLIES

The removal of the Oomycetes (biflagellate water molds whose zoospores have one whiplash and one tinsel flagellum) from the true fungi to the class Peronosporomycetes in the kingdom Straminipila (also known as kingdom Chromista) has been widely accepted within mycology for several decades now. There are, however, a small number of water molds that produce uniflagellate zoospores (with a single posterior whiplash flagellum) that have traditionally been treated in the Chytridiomycota. The massive phylogenetic review of fungi (**James et al. 2006**) known under the All-Fungal Tree of Life (AFTOL) Project resulted indicated that a large group of taxa—including the entomopathogenic genera *Coelomomyces*, *Coelomycidium*, and *Myiophagus*—needed to be removed from the Chytridiomycota; these semi-terrestrial chytrids with golden-brown resistant sporangia and complex life histories were reclassified by **Hibbett et al. (2007)** into the newer kingdom Blastocladiomycota.

ENTOMOPHTHOROMYCOTA: A NEW PHYLUM*

The phylogenetically driven reclassification of all fungi (**Hibbett et al., 2007**) resulted in the abandonment of the phylum Zygomycota (as well as the subphylum Zygomycotina and class Zygomycetes) because these long-recognized taxa were finally proven to be distinctly polyphyletic. A series of subphyla not assigned to any phylum were described in **Hibbett et al. (2007)** while placing arbuscular mycorrhizal fungi (Glomales) in a clearly distinct phylum, Glomeromycota. Since that initial formal dispersal of zygomycete fungi, the new (still unassigned) subphylum Mortierellomycotina was described (**Hoffmann et al. 2011**). It was always understood that it was probable that further phylogenetic studies on these unassigned subphyla of zygomycetous fungi could eventually result in raising each of these subphyla to phylum ranking. In the case of the Entomophthoromycotina, these ‘missing’ phylogenetic studies have been

completed in a sufficiently convincing manner (**Gryganskyi et al. 2012a,b**) to support the description of the phylum Entomophthoromycota (Humber 2012) with a new and phylogenetically revised classification of entomophthoroid fungi into three classes (see Table 2).

* A study by **Spatafora et al. (2016)** utilizing genome-scale data to analyze zygomycete fungi, proposed the creation of a new phylum, **Zoopagomycota**, with subphyla Entomophthoromycotina, Kickxellomycotina, and Zoopagomycotina. The authors rejected use of the name Zygomycota since zygospore formation is not a synapomorphy, but a sympleisiomorphic trait (i.e., trait shared by common ancestors of Zoopagomycota and other phyla). The phylum name Zoopagomycota was selected over other possible names, including Entomophthoromycota, because of its broader and more inclusive meaning. This new proposal retained the three classes in the subphylum Entomophthoromycotina proposed by **Humber (2012)**.

* Updates by LA Castrillo (June 2020)

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ARS Collection of Entomopathogenic Fungal Cultures

History and Purpose of the ARSEF Collection

The goal of the ARS Collection of Entomopathogenic Fungal Cultures (ARSEF) is to provide fundamental support for basic and applied research on the fungal pathogens of invertebrates. Since its establishment in the early 1970s, this collection has served as a general research resource for the isolation, collection, preservation, and distribution of fungal strains from insects, other arthropods, and nematodes. Emphasis has always been placed on acquiring and distributing strains under active study for use as potential biological control agents. Basic research associated with the collection includes fungal systematics, fungal cytology, pathobiology, and methodology for fungal cryopreservation. The culture collection and its associated collection of microscope slides and herbarium specimens provide invaluable support for taxonomic research on and the diagnoses of fungal pathogens of invertebrates. Identification services for specimens and cultures have always been available free of charge to any laboratories requesting them.

We strive to provide users with pure and accurately identified fungal cultures, and the taxonomies applied to the fungi in this collection are continuously updated to reflect their current accepted classifications. The curator of the collection welcomes all correspondence about nomenclatural or taxonomic changes or possible misidentifications involving any ARSEF strains.

The ARSEF collection began as Richard Soper's research collection in the USDA-ARS laboratory at the University of Maine (Orono; UMO) where its cultures were at initially designated by a UMO or RS prefix before adopting ARSEF in 1985. In 1978, the ARS Insect Pathology Research Unit relocated to Ithaca, NY, to work with the Boyce Thompson Institute (BTI) on the Cornell University campus. The Insect Pathology Research Unit became the Plant Protection Research Unit (PPRU) in 1985, and was renamed in 2016 as the Emerging Pests and Pathogens Research Unit (EPPRU). The ARSEF collection moved from BTI in 1990 into the US Plant, Soil & Nutrition Laboratory which was rededicated in 2008 as the Robert W. Holley Center for Agriculture & Health to commemorate Dr. Holley's work there to complete the first sequencing of any nucleic acid; he received the 1968 Nobel Prize for Medicine or Physiology for this work.

EPPRU operates the ARSEF culture collection for the USDA Agricultural Research Service; the collection is not now and has never been owned or controlled by the Boyce Thompson Institute. ARSEF is one of the largest germplasm collections in the ARS, and is widely recognized for its active support of research on fungal pathogens of invertebrates. ARSEF and its associated herbarium are registered under the ARSEF acronym since 1985 with the World Federation of Culture Collections' World Data Center on Microorganisms and the International Association of Plant Taxonomists' *Index Herbariorum*, respectively.

From 1977 through 2008, all strains in the collection were preserved by immersion in liquid nitrogen. A program to lyophilize those isolates that could tolerate such was begun in the 1990's, and has expanded in scope and pace. At the end of 2008 the vast majority of the collection was consolidated in a single large nitrogen dewar in a new facility adjacent to the current building. Requests for cultures are filled with either actively growing cultures on appropriate media or, if available, as freeze-dried units.

Identifying and Acknowledging ARSEF Strains in Publications

We request that all publications using or referring to strains obtained from ARSEF acknowledge the U.S. Department of Agriculture, ARS EPPRU and state the ARSEF accession numbers of these strains. We would greatly appreciate receiving reprints of all past, current, and future publications or even periodic notification about research in progress involving the use of ARSEF strains.

Accession numbers of strains from commercial culture collections such as the American Type Culture Collection (ATCC), Centraalbureau voor Schimmelcultures (CBS), CAB International Mycological Institute (IMI), and other registered general service collections are listed in this catalog to provide complete information about specific isolates. ***Representation of cultures obtained from ARSEF as being from ATCC, CBS, IMI or UAMH or other general service culture collections violates trademark laws, and persons doing so are subject to prosecution. Cultures received from ARSEF should be referred to by their ARSEF numbers only even if they are co-deposited in other culture collections.***

Depositing and Exchanging Cultures

EPPRU and ARSEF encourage deposition of entomopathogenic fungal cultures in the ARSEF collection—particularly strains used in published studies—and of voucher and reference specimens to its herbarium. Depositors may reserve the right to limit redistribution of any culture deposited with ARSEF for specified times upon consultation with the curator. Depositors can receive subcultures of their own depositions at any time; these cultures do not affect any allowances of free cultures. Exchanges of cultures between ARSEF and other research or general collections of fungal cultures are encouraged and are not subject to numerical limits.

Prior to shipping cultures from countries outside the United States contact the Curator to obtain the appropriate needed importation permit from the U.S. Department of Agriculture, Animal and Plant Health Inspection Services, Plant Protection and Quarantine.

When sending cultures and/or specimens to ARSEF, it is very important to include as much of the following information as possible:

1. Scientific name (and taxonomic authority) of the fungus.
2. Common and scientific name (with taxonomic authority) of the host.
3. Order and family of the host. ***(This information is required)***
4. Date and site of collection. *(This information is required)*
5. Name of collector.
6. Date and name of isolator.
7. Any collection, accession, or other identifier number(s) applied by the collector or sender.
8. Medium on which a culture is sent.
9. Any special requirements or conditions for growth (such as medium, temperature, pH).

Diagnostic Services for Cultures and Specimens

Specimens and cultures of unidentified fungi from invertebrates can be submitted to ARSEF for diagnosis, after consultation with the curator. This service is an important function of ARSEF and is provided without charge, but is generally limited to initial identification based on morphological characters. *We do not provide free identification requiring multi-locus sequencing.*

Release of ARSEF Cultures from Containment or Quarantine

Neither the curator nor any employee of ARSEF or of the EPPRU is entitled to authorize the release of any culture it provides from laboratory containment or quarantine in the United States or elsewhere. Recipients of ARSEF cultures are responsible for obtaining appropriate and necessary permissions from or for providing official notifications to State and Federal regulatory agencies.

Ordering Information

Please send all requests for isolates directly to the Acting Curator (Louela A. Castrillo):

ARS Collection of Entomopathogenic Fungal Cultures
Robert W. Holley Center for Agriculture & Health
538 Tower Rd.
Ithaca, NY 14853–2901

Telephone: [+1] 607 255-7008
OR Email: Louela.Castrillo@usda.gov

Academic, Government, and Other Nonprofit Institutions

1–12 isolates [up to 24 per calendar year]

13 or more isolates per order [25 or more per calendar year]

contact Curator

Users from nonprofit institutions can receive up to twelve isolates in any 6 month period, and up to 24 cultures in any calendar year.

Commercial and Industrial Institutions

1–12 isolates [per calendar year]

Users from for profit institutions can receive up to twelve isolates in any calendar year.

Terms of Shipment

All recipients of cultures are requested to provide express shipper account numbers to allow shipping costs to be billed directly to recipients, thus assuring significant cost-savings to the ARSEF collection.

We request confirmation of receipt and viability of cultures shipped. Inviable strains will be replaced.

ARSEF reserves the right to refuse to ship isolates

- to recipients who cannot handle them using standard microbiological practices,
- to laboratories that cannot assure laboratory containment of isolates except after obtaining permissions from applicable State and Federal regulatory agencies, or
- if use of routine mailing or shipping procedures cannot assure the receipt of viable cultures.

Neither ARSEF nor EPPRU is liable for damages arising from the misidentification of strains.

Interpretation of Strain Accession Data

The following examples provide a guide to the arrangement and interpretation of collection data included in this catalog.

***Beauveria bassiana* (Balsamo) Vuillemin**

2828 M Feng (MD8903). *Metopolophium dirhodum* [Homoptera: Aphididae] on spring wheat. 21 Jul 89. USA: Parma, Idaho.

2828	ARSEF accession number.
M Feng (MD8903)	Depositor and depositor's reference or accession number.
<i>Metopolophium dirhodum</i> [Homoptera: Aphididae]	Original host [host's order and family]
On spring wheat	The substrate on which the host was found
21 Jul 89	Date of accession or receipt by ARSEF.
USA: Parma, Idaho	Country of origin followed by the locality and state.

***Conidiobolus thromboides* Drechsler**

73 [CSIRO EM534; FPMI 28] RG Kenneth (3040)←ATCC (24419)←DM MacLeod←G Thoizon. *Rhopalosiphum insertum* [Homoptera: Aphididae]. Rec'd Jan 18 1976. France: Val-de-Marne, La Varenne.

73	ARSEF accession number.
[CSIRO EM534; FPMI 28]	Alternative depositions of this strain in other culture collections.
RG Kenneth (3040)	Depositor and depositor's reference or accession number.
←ATCC (24419)←DM MacLeod←G Thoizon	Culture provenance: RG Kenneth obtained the culture from ATCC, which received it from DM MacLeod, who received it from G Thoizon.
<i>Rhopalosiphum insertum</i> [Acari: Eriophyidae]	Original host [host's order and family]
Rec'd Jan 18 1976	Date of receipt by ARSEF.

***Hirsutella thompsonii* Fisher**

137 [ATCC 24874; CBS 952.73] CW McCoy (Fla. 68). *Phyllocoptruta oleivora* [Acari: Eriophyidae]. Jan 1 1970. USA: Orlando, Florida.

137	ARSEF accession number.
[ATCC 24874; CBS 952.73]	Alternative depositions of this strain in other culture collections.
CW McCoy (Fla. 68)	Depositor and depositor's reference or accession number.
<i>Phyllocoptruta oleivora</i> [Homoptera: Aphididae]	Original host together with the host's order and family.
Jan 1 1970	Date of accession or receipt by ARSEF. Note: January 1 is a default date if an exact date in a year is unknown; the first day of the month is the default if no specific day in a month is known.
USA: Orlando, Florida	Country of origin followed by the locality and state.

Abbreviations

Information about the world's officially registered culture collections, their registered acronyms (e.g., ARSEF), and more is available from the CCINFO database and from other resources available at the website of the World Data Center for Microbiology <http://wdcm.nig.ac.jp/WDCHomePage_text.html>

ARSEF	ARS Collection of Entomopathogenic Fungi, USDA-ARS EPPRU Research Unit, Robert W. Holley Center for Agriculture & Health, Tower Rd., Ithaca, New York, 14853-2901, USA
ATCC	American Type Culture Collection, PO Box 1549, Manassas, Virginia 20108, USA
CATIE	Centro Agronómico Tropical de Investigación y Enseñanza, Proyecto UIP, Apdo. Postal 7170, Turrialba, Costa Rica.
CBS	Centraalbureau voor Schimmelcultures, Uppsalalaan 8, 3584 CT Utrecht, The Netherlands
CCF	Culture Collection of Fungi, Department of Botany, Charles University, Prague, Czech Republic
CCFC	Canadian Collection of Fungus Cultures, Centre for Land and Biological Resources Research, Room 1015, K.W. Neatby Bldg., Ottawa, Ontario K1A 0C6, Canada
CDC	Centers for Disease Control and Prevention, Atlanta, Georgia 30333, USA
CENARGEN	Centro Nacional de Pesquisa de Recursos Geéticos e Biotecnologia, S.A.I.N. Parque Rural, C.P. 102372, 70770 Brasília, D.F., Brazil
CIRI	Corn Insects Research Unit, USDA-ARS, R.R. Box 45B, Ankeny, Iowa 50021, USA
CNPAF	National Center for Agricultural Research on Rice and Beans, EMBRAPA, Goiânia, Goiás, Brazil
CNPS	National Center for Agricultural Research on Soybeans, EMBRAPA, Londrina, Paraná, Brazil
CP	Strains isolated during joint US-Brazil program funded by US-AID to study fungal biocontrol of the insect pests of cowpeas
DAOM	National Mycological Herbarium, Centre for Land and Biological Resources Research, Agriculture Canada, Central Experimental Farm, Ottawa, Ontario, K1A 0C6, Canada
DAR	New South Wales Department of Agriculture, Rydalmere, NSW, Australia
EFCC	Korean Entomopathogenic Fungal Collection (JM Sung, Curator), Dept. of Agricultural Biology, Kangwon National University, Chuncheon, Rep. of Korea
FI	CSIRO Entomology Division, Collection of Entomopathogenic Fungi, Black Mountain Laboratories, Canberra, ACT, Australia. This collection, formerly curated by R. Milner, is now orphaned and is being transferred to ARSEF.
FPMI	Great Lakes Forestry Center (formerly Forest Pest Management Institute), 1219 Queen Street East, Sault Ste. Marie, Ontario P6A 5M7, Canada. This collection, formerly led by D MacLeod and D Tyrrell is orphaned and endangered. Its surviving isolates <i>may</i> be transferred to DAOM.

GCRI	Horticulture Research International (formerly, Glasshouse Crops Research Institute), Worthing Road, Littlehampton, W. Sussex BN17 6LP, England, UK
HACC	Hindustan Antibiotics Ltd., Pimpri, Poona, India
IMI	(Now incorporated in United Kingdom National Culture Collection [UKNCC]) CABI Bioscience, Bakeham Lane, Egham, Surrey TW20 9TY, UK
INRA	Station de Recherches de lutte Biologique et Biocoenotique, INRA (Institut National de la Recherche Agronomique), La Minière – 78280 Guyancourt, France
IPLB	Unité de Lutte Biologique, Institut Pasteur, 28 Rue de Dr. Roux, 75724 Paris, France
IRRI	International Rice Research Institute, P.O. Box 933, Manila, Philippines
KEFC	(see EFCC)
KSU	Kansas State University, Department of Entomology, Manhattan, Kansas 66506, USA
MAF	Ministry of Agriculture and Fisheries, Canterbury Agriculture and Science Centre, Ellesmere Junction Road, P.O. Box 24, Lincoln, New Zealand
MU	Miami University, Willard Sherman Turrell Herbarium, Department of Botany, 79 Upham Hall, Oxford, Ohio 45056, USA
NCTC	National Collection of Type Cultures, Public Health Laboratory Service, 61 Colindale Ave., London NW9 5HT, England, UK
NRRL	ARS Culture Collection, USDA-ARS National Center for Agricultural Utilization Research, 1815 N. University, Peoria, Illinois 61604, USA
PSU	The Pennsylvania State University, 211 Buckhout Laboratory, University Park, Pennsylvania 16802, USA
QEC	Queen Elizabeth College, University of London, Department of Biology, Campden Hill Road, London W8 7AH, England, UK
QM	U.S. Army Natick Laboratories (formerly, Quartermaster Research and Development Center), Natick Massachusetts. Note: This collection has been transferred to NRRL.
RSA	Rancho Santa Ana Botanic Garden, 1500 North College Ave., Claremont, California 91711, USA
SBI	Sugarcane Breeding Institute, Indian Council of Agricultural Research, Coimbatore – 641 007, Tamil Nadu, India
UAF	University of Arkansas, Department of Entomology, 321 Agriculture Building, Fayetteville, Arkansas 72701, USA
UAMH	University of Alberta Microfungus Collection, Devonian Botanic Garden, University of Alberta, Alberta T6G 2H7, Canada

List of isolates by genus: *Isaria*

***Isaria* sp.**

[Sordariomycetes: Hypocreales]

Cordycipitaceae

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- 55 Acc'd 18 Nov 1982. India.
- 9508 [SRCAMB B-183] V Likhovidov ← BA Borisov. [Diptera: Tipulidae]. 1999. Ukraine: Kherson Oblast. Field Collection Number F-1063.
- 9517 [SRCAMB B-298] V Likhovidov ← BA Borisov. [Hemiptera: Psyllidae]. 8 Jul 2003. Russian Federation: Vladivostok, Primorsky Krai. Field Collection Number F-331.
- 9518 [SRCAMB B-293/2] V Likhovidov ← BA Borisov. Isolated from stroma of *Cordyceps* sp8 Jul 2003. Russian Federation: Vladivostok, Primorsky Krai. Field Collection Number F-600.
- 9519 [SRCAMB VL-1914/1] V Likhovidov. Larva, [Coleoptera]. 22 Aug 2005. Belarus: Belavezhskaya Puscha National Park. Field Collection Number F-853.
- 10162 [ERL 1822] S Gouli (Thr.-10-24) and V Gouli. *Taeniothrips inconsequens* [Thysanoptera: Thripidae]. 2010. USA: Sharon Springs, New York.
- 10360 [ERL 558] BL Parker and M Skinner (SP-567). *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10363 [ERL 390] BL Parker and M Skinner (SP-473). *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10364 [ERL 391] BL Parker (SP-475) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10365 [ERL 392] BL Parker and M Skinner (SP-484). *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10366 [ERL 393] BL Parker (SP-486) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10367 [ERL 394] BL Parker and M Skinner (SP-487). *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10368 [ERL 395] BL Parker (SP-509) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10369 [ERL 396] BL Parker and M Skinner (SP-514). *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10370 [ERL 397] BL Parker (SP-515) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10371 [ERL 398] BL Parker (SP-516) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10372 [ERL 399] BL Parker and M Skinner (SP-517). *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10373 [ERL 400] BL Parker (SP-518) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10374 [ERL 401] BL Parker and M Skinner (SP-520). *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10375 [ERL 402] BL Parker (SP-569) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10376 [ERL 403] BL Parker and M Skinner (SP-570). *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10377 [ERL 404] BL Parker (SP-587) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10378 [ERL 527] BL Parker (SP-456) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2000. Republic of Kazakhstan.
- 10379 [ERL 540] BL Parker (SP-501) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10380 [ERL 548] BL Parker and M Skinner (SP-523b). *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10381 [ERL 549] BL Parker (SP-531) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10382 [ERL 554] BL Parker and M Skinner (SP-555). *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10383 [ERL 556] BL Parker (SP-564) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10384 [ERL 561] BL Parker and M Skinner (SP-572). *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 10385 [ERL 571] BL Parker (SP-588) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 11628 [ERL 606] S Gouli and V Gouli (CA-701). Isolated from soil sample. 2002. USA: California.
- 11629 [ERL 48] M Brownbridge (L3741). *Taeniothrips inconsequens* [Thysanoptera: Thripidae]. 1992. USA: Vermont.
- 11630 [ERL 143] S Gouli (HWA2) and W Reid. *Adelges tsugae* [Hemiptera: Adelgidae]. 1997. USA: Massachusetts.
- 11631 [ERL 546] BL Parker (SP-522) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 11632 [ERL 555] BL Parker (SP-560) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 11633 [ERL 559] BL Parker (SP-568) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.

- 11634 [ERL 560] BL Parker (SP-571) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 11635 [ERL 564] BL Parker (SP-583) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 11636 [ERL 565] BL Parker (SP-584) and M Skinner. *Eurygaster* sp. [Hemiptera: Scutelleridae]. 2002. Iran.
- 11753 [ERL 2008] Phylum Arthropoda, Class Arachnida. 2012. USA: Richford, Vermont.
- 12190 DW Roberts (DWR 2411). Isolated from soil sample SS 25347. 13 Sep 2010. USA: Custer County, Nebraska. N 41.052162, W 99.503496.
- 12409 ST Jaronski (ND23-3). *Melanoplus femurrubrum* [Orthoptera: Acrididae]. 20 Aug 2010. USA: Sidney, Montana. N 47° 43' 43.09", W 104° 11' 18.82".
- 12433 ST Jaronski (83D). *Melanoplus bivittatus* [Orthoptera: Acrididae]. 8 Aug 2000. USA: Wold Farm, McKenzie County, North Dakota. N 48° 2.302', W 103° 9.693'.
- 12941 ST Jaronski (14WS27). *Cephus cinctus* [Hymenoptera: Cephidae]. Winter 2014. USA: MSU Wheat Variety Plots, Conrad, Montana. Site ID # S3. N 48.075547, W 110.45955.
- 13662 [M Burjanadze MB-001] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778? to N 41.73? and E 42.081944? to E 42.02611 .
- 13663 [M Burjanadze MB-002] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778? to N 41.73? and E 42.081944? to E 42.02611, 300 to 2500 meters above sea level.
- 13664 [M Burjanadze MB-003] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778? to N 41.73? and E 42.081944? to E 42.02611, 300 to 2500 meters above sea level.
- 13665 [M Burjanadze MB-004] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778? to N 41.73? and E 42.081944? to E 42.02611, 300 to 2500 meters above sea level.
- 13667 [M Burjanadze MB-006] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778? to N 41.73? and E 42.081944? to E 42.02611, 300 to 2500 meters above sea level.
- 13668 [M Burjanadze MB-007] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778? to N 41.73? and E 42.081944? to E 42.02611, 300 to 2500 meters above sea level.
- 13669 [M Burjanadze MB-008] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778? to N 41.73? and E 42.081944? to E 42.02611, 300 to 2500 meters above sea level.
- 13670 [M Burjanadze MB-009] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778? to N 41.73? and E 42.081944? to E 42.02611, 300 to 2500 meters above sea level.
- 13671 [M Burjanadze MB-010] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778? to N 41.73? and E 42.081944? to E 42.02611, 300 to 2500 meters above sea level.
- 13672 [M Burjanadze MB-011] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778? to N 41.73? and E 42.081944? to E 42.02611, 300 to 2500 meters above sea level.
- 13673 [M Burjanadze MB-012] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778? to N 41.73? and E 42.081944? to E 42.02611, 300 to 2500 meters above sea level.
- 13674 [M Burjanadze MB-013] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778? to N 41.73? and E 42.081944? to E 42.02611, 300 to 2500 meters above sea level.
- 13675 [M Burjanadze MB-014] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve,

- Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778° to N 41.73° and E 42.081944° to E 42.02611, 300 to 2500 meters above sea level.
- 13676 [M Burjanadze MB-015] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778° to N 41.73° and E 42.081944° to E 42.02611, 300 to 2500 meters above sea level.
- 13677 [M Burjanadze MB-016] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778° to N 41.73° and E 42.081944° to E 42.02611, 300 to 2500 meters above sea level.
- 13679 [M Burjanadze MB-018] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778° to N 41.73° and E 42.081944° to E 42.02611, 300 to 2500 meters above sea level.
- 13680 [M Burjanadze MB-019] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778° to N 41.73° and E 42.081944° to E 42.02611, 300 to 2500 meters above sea level.
- 13681 [M Burjanadze MB-020] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778° to N 41.73° and E 42.081944° to E 42.02611, 300 to 2500 meters above sea level.
- 13695 [M Burjanadze MB-035] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778° to N 41.73° and E 42.081944° to E 42.02611, 300 to 2500 meters above sea level.
- 13698 [M Burjanadze MB-03B] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778° to N 41.73° and E 42.081944° to E 42.02611, 300 to 2500 meters above sea level.
- 13699 [M Burjanadze MB-039] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve,
- Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778° to N 41.73° and E 42.081944° to E 42.02611, 300 to 2500 meters above sea level.
- 13700 [M Burjanadze MB-040] Isolated from soil sample using selective media. Rec'd 17 Sep 2018. Republic of Georgia: Kintrishskiy Nature Reserve, Autonomous Republic of Adjara. Collected 2017 in the area bounded by N 41.87778° to N 41.73° and E 42.081944° to E 42.02611, 300 to 2500 meters above sea level.
- 13759 [M Burjanadze MB-103] *Halyomorpha halys* [Hemiptera: Pentatomidae]. Rec'd 17 Sep 2018. Republic of Georgia. collected winter 2017-2018.
- Isaria amoenerosea*** P. Hennings
[Sordariomycetes: Hypocreales]
Cordycipitaceae. Major synonym: *Paecilomyces amoeneroseus* (Hennings) Samson. Reclassified during a phylogenetically necessary reclassification of *Paecilomyces* Section *Isarioidea*.
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- 741 [CNPAP 82-1-15-06; CP 19] RA Daoust. *Lagria vilosa* [Coleoptera: Lagriidae]. Jan 1982. Brazil: CNPAP, Goiânia, Goiás.
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Cordycipitaceae

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Cordycipitaceae

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Cordycipitaceae

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- 4040 T Steenberg (260) ← L Øgaard. *Staphylinus olens* [Coleoptera: Staphylinidae]. Oct 1991. Denmark: Bagsværd, Zealand.
- 4043 T Steenberg (269) ← CW Riedel. *Bembidion lampros* [Coleoptera: Carabidae]. Jan 1991. Denmark.
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- 5075 LA Lacey (95067). [Coleoptera: Cerambycidae]. 6 Oct 1995. France: Lodève, Hérault.
- 5080 LA Lacey (95069). [Coleoptera: Cerambycidae]. 16 Nov 1995. France: Saint-Etienne, de Gourgas.
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- 5082 LA Lacey (95072). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5083 LA Lacey (95073). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
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- 5761 BL Parker (AT 139). *Adelges tsugae* [Hemiptera: Adelgidae]. 17 Oct 1997. USA: Rapps Mills, Virginia.
- 5774 BL Parker ((micron)H 2). *Adelges tsugae* [Hemiptera: Adelgidae]. Spring 1997. USA: Russell, Massachusetts.
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- 5800 BL Parker (HWA 306). *Adelges tsugae* [Hemiptera: Adelgidae]. Oct 1997. USA: Russell, Massachusetts.
- 5801 BL Parker (HWA 308). *Adelges tsugae* [Hemiptera: Adelgidae]. Oct 1997. USA: Russell, Massachusetts.
- 5802 BL Parker (HWA 309). *Adelges tsugae* [Hemiptera: Adelgidae]. Oct 1997. USA: Russell, Massachusetts.
- 5826 BL Parker (AT 157). *Adelges tsugae* [Hemiptera: Adelgidae]. 16 Oct 1997. USA: Guilford, Connecticut.
- 5827 BL Parker (AT 159). *Adelges tsugae* [Hemiptera: Adelgidae]. 16 Oct 1997. USA: Guilford, Connecticut.
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- 5834 BL Parker (SPT 013/2). [Coleoptera: Coccinellidae]. 18 Jan 1998. Turkey: Hursit Mt., Gaziantep, Gaziantep.
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- 6029 BL Parker (AT-C-234). 2nd instar, *Adelges tsugae* [Hemiptera: Adelgidae]. 29 Oct 1998. PR China: Site 1, Tree Number 3, Sichuan Province.
- 6030 BL Parker (AT-C-235). 2nd instar, *Adelges tsugae* [Hemiptera: Adelgidae]. 29 Oct 1998. PR China: Site 2, Tree Number 5, Sichuan Province.
- 6031 BL Parker (AT-C-237). 2nd instar, *Adelges tsugae* [Hemiptera: Adelgidae]. 29 Oct 1998. PR China: Site 2, Tree Number 5, Sichuan Province.
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- 6038 BL Parker (AT-C-288). 2nd instar, *Adelges tsugae* [Hemiptera: Adelgidae]. 29 Oct 1998. PR China: Site 1, Tree Number 14, Sichuan Province.
- 6044 BL Parker ← V Gouli (SPT-R-172). Overwintering adult, *Eurygaster* sp. [Hemiptera: Scutelleridae]. 22 Sep 1998. Russian Federation: Krasnii Sulin, Rostov.
- 6048 BL Parker (AT-C-293). Aestivating 2nd instar, *Adelges tsugae* [Hemiptera: Adelgidae]. 29 Oct 1998. PR China: Site 1, Sichuan Province.
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- 6202 FE Vega (EBCL 98028). Larva, *Cydia pomonella* [Lepidoptera: Tortricidae]. 19 Feb 1998. France: Crespian, Gard.
- 6207 FE Vega (EBCL 98052). Larva, *Cydia pomonella* [Lepidoptera: Tortricidae]. 5 Oct 1998. Bulgaria: Jabalkovo.
- 6222 JL Hatting. *Diuraphis noxia* [Hemiptera: Aphididae]. 21 Jun 1999. South Africa: Small Grain Institute Greenhouse aphid colony, Bethlehem, Free State.
- 6245 [RCEF 0097] [Lepidoptera]. Rec'd 24 Aug 1999. PR China: Yunnan.
- 6246 [RCEF 0449] Phylum Arthropoda, Class Arachnida. 20 Sep 1997. PR China: Anhui.
- 6288 S Farrokhi (PPDRI 3). *Eurygaster integriceps* [Hemiptera: Scutelleridae]. Dec 1998. Iran: Isfahan, Esfahan.
- 6481 BL Parker (SPT-KZ-400). Adult, *Eurygaster* sp. [Hemiptera: Scutelleridae] overwintering in soil. 6 Feb 2000. Kazakhstan: GPS Coordinates N 43°08.530' E 076°36.526'. **RESTRICTED ACCESS:**
contact Curator
- 6482 BL Parker (SPT-KR-404). Adult, [Collembola] overwintering in soil. 2 Dec 2000. Kyrgyz Republic: GPS Coordinates N 43°39.257' E 073°54.353'. **RESTRICTED ACCESS:**
contact Curator
- 6488 BL Parker (SPT-KZ-418). Adult, [Coleoptera: Scarabaeidae] overwintering in soil. 6 Feb 2000. Kazakhstan: GPS Coordinates N 43°08.530' E 076°36.526'. **RESTRICTED ACCESS:**
contact Curator
- 6489 BL Parker (SPT-KZ-419). Adult, [Coleoptera: Scarabaeidae] overwintering in soil. 6 Feb 2000. Kazakhstan: GPS Coordinates N 43°08.530' E 076°36.526'. **RESTRICTED ACCESS:**
contact Curator

- 6490 BL Parker (SPT-KZ-420). Adult, *Eurygaster* sp. [Hemiptera: Scutelleridae] overwintering in soil. 4 Feb 2000. Kazakhstan: GPS Coordinates N 43°22.366' E 077°20.486'. **RESTRICTED ACCESS:.**
contact Curator
- 6491 BL Parker (SPT-KZ-423). Adult, [Coleoptera: Chrysomelidae] overwintering in soil. 4 Feb 2000. Kazakhstan: GPS Coordinates N 43°23.081' E 077°34.126'. **RESTRICTED ACCESS:.**
contact Curator
- 6493 BL Parker (SPT-KZ-428). Adult, *Aelia* sp. [Hemiptera: Pentatomidae] overwintering in soil. 6 Feb 2000. Kazakhstan: GPS Coordinates N 43°08.530' E 076°36.526'. **RESTRICTED ACCESS:.**
contact Curator
- 6495 BL Parker (SPT-KZ-432). Adult, *Eurygaster* sp. [Hemiptera: Scutelleridae] overwintering in soil. 6 Feb 2000. Kazakhstan: GPS Coordinates N 43°08.530' E 076°36.526'. **RESTRICTED ACCESS:.**
contact Curator
- 6496 BL Parker (SPT-KZ-440). Adult, [Hemiptera: Lygaeidae] overwintering in soil. 4 Feb 2000. Kazakhstan: GPS Coordinates N 43°22.366' E 077°20.486'. **RESTRICTED ACCESS:.**
contact Curator
- 6497 BL Parker (SPT-KZ-443). Adult, *Aelia* sp. [Hemiptera: Pentatomidae] overwintering in soil. 6 Feb 2000. Kazakhstan: GPS Coordinates N 43°08.530' E 076°36.526'. **RESTRICTED ACCESS:.**
contact Curator
- 6607 JL Hatting (Sample B). [Hemiptera: Miridae] on *Aspalathus contaminatus*, Rooibos tea. . 4 Aug 1999. South Africa: Site grid reference S 31° 47' 37.5" E 8° 41' 02.2", Clanwilliam, Cape Province.
- 6609 JL Hatting (Lesotho A). *Diuraphis noxia* [Hemiptera: Aphididae]. 31 Jan 2000. Lesotho: Sehlabathebe.
- 6611 JL Hatting. 17 May 2000. South Africa: Clanwilliam, Cape Province.
- 6619 Rec'd 27 Sep 2000.
- 6623 Acc'd 27 May 2003.
- 6983 [PPRI 7071] JL Hatting. *Diuraphis noxia* [Hemiptera: Aphididae]. 10 Aug 2001. South Africa: ARC-Small Grain Institute Greenhouse, Bethlehem, Free State.
- 7094 KT Hodge. Among moss on fallen tree fern. 10 Jan 2003. USA: off Saddle Road, Island of Hawaii, Hawaii. Specimen accessioned in the Cornell Plant Pathology Herbarium as CUP 67180.
- 7118 [CBS 111113] Pupa, [Lepidoptera] in moss under *Quercus*, oak. 30 Sep 2002. Denmark: Kås Skov, Jutland Salling, Jutland. CULTURE EX EPITYPE.
- 7243 JM Sung (EFCC 1460). Larva, 31 Jul 1997. Nepal.
- 7245 JM Sung (EFCC 1928). Pupa, 4 Oct 1997. Republic of Korea: Samag Mt., Kangwon-do.
- 7249 JM Sung (EFCC 2014). [Hymenoptera]. 22 May 1998. Republic of Korea: Yongmoon Mt., Gyeonggi Province.
- 7262 JM Sung (EFCC 2942). [Hymenoptera]. Jun 1999. Republic of Korea: Obong Mt., Kangwon-do.
- 7263 JM Sung (EFCC 2948). Pupa, Jun 1999. Republic of Korea: Obong Mt., Kangwon-do.
- 7276 JM Sung (EFCC 9251). [Coleoptera: Cerambycidae]. 23 Aug 2002. Republic of Korea: Seolag Mt., Kangwon-do.
- 7531 S Keller (955). *Galleria mellonella* [Lepidoptera: Pyralidae] as bait fom soil. 29 Sep 2003. Switzerland: Matten, Bern.
- 7574 I Klingen (NCRI 95/02). Larva, *Galleria mellonella* [Lepidoptera: Pyralidae] as bait from soil. 3 Oct 2001. Norway: Målsnes, field margin of conventional apple orchard, Balestrand, Sogn og Fjordane.
- 7575 I Klingen (NCRI 164/02). Larva, *Galleria mellonella* [Lepidoptera: Pyralidae] as bait from soil. 1 Oct 2001. Norway: Nessane, conventional apple orchard, Balestrand, Sogn og Fjordane.
- 7576 I Klingen (NCRI 170/02). Larva, *Galleria mellonella* [Lepidoptera: Pyralidae] as bait from soil. 1 Oct 2001. Norway: Nessane, field margin of conventional apple orchard, Balestrand, Sogn og Fjordane.
- 7714 [SRCAMB B-181] V Likhovidov ← BA Borisov. Pupa, [Lepidoptera]. Aug 2002. Russian Federation: Vladivostok District, Primorsky Krai. Field Collection Number F-184.
- 7715 [SRCAMB VL-1124/2] V Likhovidov. Phylum Arthropoda, Class Insecta. 9 Aug 2002. Russian Federation: Lazovsky Nature Reserve, Primorsky Krai. Field Collection Number F-302.
- 7717 [SRCAMB B-180] V Likhovidov ← BA Borisov. Phylum Arthropoda, Class Insecta. Aug 2002. Russian Federation: Primorsky Krai. Field Collection Number F-182.
- 7718 [SRCAMB B-176] V Likhovidov ← BA Borisov. Phylum Arthropoda, Class Insecta. Aug 2002. Russian Federation: Lazovsky Nature Reserve, Primorsky Krai. Field Collection Number F-183.
- 7719 [SRCAMB B-172] V Likhovidov ← BA Borisov. Phylum Arthropoda, Class Insecta. Jul 2002. Russian Federation: Kunashir Island, Sakhalin Region. Field Collection Number F-181.
- 7720 [SRCAMB VL-576/1] V Likhovidov. Pupa, [Lepidoptera]. 7 Aug 2001. Russian Federation: Lazovsky Nature Reserve, Primorsky Krai. Field Collection Number F-180.
- 7722 [SRCAMB B-49] V Likhovidov ← BA Borisov. Pupa, [Lepidoptera] Isolated from stroma of *Cordyceps* sp. Aug 2002. Russian Federation: Lazovsky Nature Reserve, Primorsky Krai. Field Collection Number F-199.

- 7723 [SRCAMB B-108] V Likhovidov ← BA Borisov. Pupa, [Lepidoptera]. 31 Aug 2002. Russian Federation: Caucasus region, Karachayevo-Cherkessiya Republ. Field Collection Number F-185.
- 7724 [SRCAMB VL-405] V Likhovidov. Pupa, [Lepidoptera] Isolated from stroma of *Cordyceps* sp. 30 Jul 2001. Russian Federation: Kedrovaya Pad Nature Reserve, Primorsky Krai. Field Collection Number F-294.
- 7725 [SRCAMB B-62] V Likhovidov ← BA Borisov. Pupa, [Lepidoptera] Isolated from stroma of *Cordyceps* sp. 2002. Russian Federation: Lazovsky Nature Reserve, Primorsky Krai. Field Collection Number F-286.
- 7726 [SRCAMB VL-497] V Likhovidov. Pupa, [Lepidoptera] Isolated from stroma of *Cordyceps* sp. 21 Jul 2001. Russian Federation: environs of Vladivostok, Vladivostok, Primorsky Krai. Field Collection Number F-272.
- 7727 [SRCAMB B-52] V Likhovidov ← BA Borisov. Phylum Arthropoda, Class Insecta. Aug 2002. Russian Federation: Lazovsky Nature Reserve, Primorsky Krai. Field Collection Number F-187.
- 7728 [SRCAMB VL-755] V Likhovidov. [Hymenoptera: Formicidae]. 27 Jul 2002. Russian Federation: Kunashir Island, Sakhalin Region. Field Collection Number F-188.
- 7729 [SRCAMB VL-449] V Likhovidov. Phylum Arthropoda, Class Insecta Isolated from stroma of *Cordyceps* sp. 21 Jul 2001. Russian Federation: Kedrovaya Pad Nature Reserve, Primorsky Krai. Field Collection Number F-291.
- 7730 [SRCAMB B-77] V Likhovidov ← BA Borisov. Pupa, [Lepidoptera]. Aug 2002. Russian Federation: Lazovsky Nature Reserve, Primorsky Krai. Field Collection Number F-286.
- 7731 [SRCAMB VL-576] V Likhovidov. Pupa, [Lepidoptera]. 7 Aug 2001. Russian Federation: Lazovsky Nature Reserve, Primorsky Krai. Field Collection Number F-180.
- 7732 [SRCAMB VL-282] V Likhovidov. Phylum Arthropoda, Class Insecta in soil. Jul 2001. Russian Federation: Lazovsky Nature Reserve, Primorsky Krai. Field Collection Number F-271.
- 7733 [SRCAMB VL-51] V Likhovidov. Pupa, [Lepidoptera]. Sep 2001. Russian Federation: Caucasus region, Krasnaya Polyana, Krasnodarsky Krai. Field Collection Number F-186.
- 7734 [SRCAMB B-404] V Likhovidov ← BA Borisov. Pupa, [Lepidoptera]. Oct 1988. Ukraine: Kherson Oblast. Field Collection Number F-190.
- 7736 [SRCAMB B-102] V Likhovidov ← BA Borisov. Pupa, [Lepidoptera] Isolated from stroma of *Cordyceps takaomontana*. Aug 2002. Russian Federation: Lazovsky Nature Reserve, Primorsky Krai. Field Collection Number F-293.
- 7737 [SRCAMB VL-1040/1] V Likhovidov. Pupa, [Lepidoptera] Isolated from stroma of *Cordyceps takaomontana*. 6 Aug 2002. Russian Federation: Lazovsky Nature Reserve, Primorsky Krai. Field Collection Number F-304.
- 7739 [SRCAMB B-331] V Likhovidov ← BA Borisov. Isolated from stroma of *Cordyceps nutans*. Jul 2003. Russian Federation: Kedrovaya Pad Nature Reserve, Primorsky Krai. Field Collection Number F-334.
- 7777 [CEP (S) 004] C López Lastra ← A Toledo. Soil of *Zea mays* L., corn crop. 3 Jul 2003. Argentina: Estación experimental Julio Hirschhorn, Los Hornos, Buenos Aires. **RESTRICTED ACCESS: consult Curator.**
- 7961 LA Lacey (4A). Larva, *Galleria mellonella* [Lepidoptera: Pyralidae] as bait from soil sample. 29 Sep 2005. USA: Alaska. 69°25'26" N, 148°41'41" W, 1001 ft elevation.
- 7962 LA Lacey (5A). Larva, *Galleria mellonella* [Lepidoptera: Pyralidae] as bait from soil sample. 28 Sep 2005. USA: Deadhorse, Alaska. 70°12'42" N, 148°28'57" W, 37 ft elevation.
- 8016 BC King (7). Rec'd 7 Apr 2006. Canada: Pacific Spirit Regional Park, Vancouver, British Columbia. GenBank match - AY624181 (97.80%) ITS. **RESTRICTED ACCESS: consult Curator.**
- 8017 BC King (47). Rec'd 7 Apr 2006. Canada: Pacific Spirit Regional Park, Vancouver, British Columbia. GenBank match - AY624181 (97.80%) ITS. **RESTRICTED ACCESS: consult Curator.**
- 8018 BC King (10). Rec'd 7 Apr 2006. Canada: Pacific Spirit Regional Park, Vancouver, British Columbia. GenBank match - AY624181 (97.80%) ITS. **RESTRICTED ACCESS: consult Curator.**
- 8019 BC King (11). Rec'd 7 Apr 2006. Canada: Pacific Spirit Regional Park, Vancouver, British Columbia. GenBank match - AY624181 (97.80%) ITS. **RESTRICTED ACCESS: consult Curator.**
- 8020 BC King (22). Rec'd 7 Apr 2006. Canada: Pacific Spirit Regional Park, Vancouver, British Columbia. GenBank match - AY624181 (97.80%) ITS. **RESTRICTED ACCESS: consult Curator.**
- 8021 BC King (43). Rec'd 7 Apr 2006. Canada: Pacific Spirit Regional Park, Vancouver, British Columbia. GenBank match - AY624181 (97.80%) ITS. **RESTRICTED ACCESS: consult Curator.**
- 8022 BC King (75). Rec'd 7 Apr 2006. USA: Renton, Washington. GenBank match - AY624181 (97.80%) ITS. **RESTRICTED ACCESS: consult Curator.**
- 8251 30 Aug 2006.
- 8252 BC King (Spec 1). Acc'd 19 Dec 2006.
- 8411 AE Hajek (02 NY 5-6-1). Adult, cadaver, *Anoplophora glabripennis* [Coleoptera: Cerambycidae]. 10 Sep 2002. USA: Quarantine colony, Ithaca, New York.

- 8599 [CSIRO FI-0935] 5 Aug 1992. Pink contaminant on Veen's medium.
- 8770 A Torres Barragan (Ral 6). Larva, *Galleria mellonella* [Lepidoptera: Pyralidae] as bait from vermicompost. 16 Jul 2008. USA: Red Hen Enterprises, Raleigh, North Carolina.
- 8917 [ERL 253] BL Parker (AVRDC 0482B). *Tenebrio molitor* [Coleoptera: Tenebrionidae] as bait from soil. 1994. Republic of China: Taiwan.
- 9269 Z Demirbag and E Tanyeli (Dm-3). *Dendroctonus micans* [Coleoptera: Scolytidae]. 24 Oct 2008. Turkey: Maçka-Zigana, Trabzon.
- 9270 Z Demirbag and E Tanyeli (Dm-4). *Dendroctonus micans* [Coleoptera: Scolytidae]. 24 Oct 2008. Turkey: Maçka-Zigana, Trabzon.
- 9275 Z Demirbag and E Tanyeli (Dm-9). *Dendroctonus micans* [Coleoptera: Scolytidae]. 20 Jun 2009. Turkey: Maçka-Zigana, Trabzon.
- 9276 Z Demirbag and E Tanyeli (Dm-10). *Dendroctonus micans* [Coleoptera: Scolytidae]. 20 Jun 2009. Turkey: Maçka-Zigana, Trabzon.
- 9277 Z Demirbag and E Tanyeli (Dm-11). *Dendroctonus micans* [Coleoptera: Scolytidae]. 20 Jun 2009. Turkey: Maçka-Zigana, Trabzon.
- 9278 Z Demirbag and E Tanyeli (Dm-12). *Dendroctonus micans* [Coleoptera: Scolytidae]. 20 Jun 2009. Turkey: Maçka-Zigana, Trabzon.
- 9292 [ERL 1592] S Gouli (Thr-08-P1) and V Gouli. Isolated from soil sample. 2008. USA: Vermont.
- 9293 [ERL 1593] S Gouli and V Gouli (Thr-08-P2). Isolated from soil sample. 2008. USA: Vermont.
- 9510 [SRCAMB VL-755] V Likhovidov. [Hymenoptera: Formicidae]. 27 Jul 2002. Russian Federation: Kunashir Island, Sakhalin Region. Field Collection Number F-188.
- 9511 [SRCAMB VL-1587/3] V Likhovidov. [Coleoptera: Silphidae]. 14 Sep 2004. Russian Federation: Caucasus region, Karachayevo-Cherkessiya Republ. Field Collection Number F-525.
- 9512 [SRCAMB VL-1624] V Likhovidov. Larva, [Diptera: Xylophagidae] Isolated from stroma of *Cordyceps corallomyces*. Sep 2004. Russian Federation: Caucasus region, Mostovsky District, Krasnodarsky Krai. Field Collection Number F-585.
- 9513 [SRCAMB B-679] V Likhovidov ← BA Borisov. [Hemiptera: Coccidae]. 8 Jul 2005. Ukraine: Kiev. Field Collection Number F-746.
- 9514 [SRCAMB VL-1959] V Likhovidov. [Hymenoptera: Formicoidea]. 25 Aug 2005. Belarus: Belavezhskaya Puscha National Park. Field Collection Number F-842.
- 9515 [SRCAMB B-186] V Likhovidov ← BA Borisov. [Lepidoptera: Lasiocampidae]. Apr 2003. Russian Federation: Moscow Region. Field Collection Number F-919.
- 9516 [SRCAMB B-405/2] V Likhovidov ← BA Borisov. [Coleoptera]. Oct 2003. Ukraine: Kherson Oblast. Field Collection Number F-930.
- 9574 [ERL 1731] S Gouli and V Gouli (Thr.-08-P/8). Isolated from soil sample. 2008. USA: Vermont.
- 9575 [ERL 1732] S Gouli (Thr.-08-P/9) and V Gouli. Isolated from soil sample. 2008. USA: Vermont.
- 9576 [ERL 1733] S Gouli and V Gouli (Thr.-08-P/10). Isolated from soil sample. 2008. USA: Vermont.
- 9577 [ERL 1734] S Gouli (Thr.-08-P/11) and V Gouli. Isolated from soil sample. 2008. USA: Vermont.
- 9578 [ERL 1735] S Gouli and V Gouli (Thr.-08-P/12). Isolated from soil sample. 2008. USA: Vermont.
- 9579 [ERL 1736] S Gouli (Thr.-08-P/13) and V Gouli. Isolated from soil sample. 2008. USA: Vermont.
- 9580 [ERL 1737] S Gouli and V Gouli (Thr.-08-P/14). Isolated from soil sample. 2008. USA: Vermont.
- 9944 LS Bauer (Legg Park 1). Larva, *Agrilus planipennis* [Coleoptera: Buprestidae]. Rec'd 14 Apr 2010. USA: Legg Park, Okemos, Michigan.
- 9945 LS Bauer (Legg Park 2). Larva, *Agrilus planipennis* [Coleoptera: Buprestidae]. Rec'd 14 Apr 2010. USA: Legg Park, Okemos, Michigan.
- 10155 [ERL 1815] S Gouli and V Gouli (Thr.-10-17). *Taeniothrips inconsequens* [Thysanoptera: Thripidae]. 2010. USA: Bakersfield, Vermont.
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 [Sordariomycetes: Hypocreales]
 Cordycipitaceae. Current name: *Isaria farinosa* (Holm:Fries) Fries nom. conserv.
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 [Sordariomycetes: Hypocreales]
 Cordycipitaceae
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Isaria fumosorosea Wize

[Sordariomycetes: Hypocreales]

Cordycipitaceae. Major synonym: *Paecilomyces fumosoroseus* (Wize) Brown & Smith. Reclassified during a phylogenetically necessary reclassification of *Paecilomyces* Section *Isarioidea*.

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- 3458 AD Ali. *Myzus persicae* [Hemiptera: Aphididae]. Rec'd 6 Apr 1992. Location not specified.
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- 3581 SP Wraight (11). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 3 Feb 1992. USA: cabbage field, McAllen, Texas.
- 3590 TJ Poprawski (21). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 3 Feb 1992. USA: cabbage field, McAllen, Texas.
- 3594 TJ Poprawski (25). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 3 Feb 1992. USA: cabbage field, McAllen, Texas.
- 3660 TJ Poprawski (43). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] on hibiscus. 28 Jan 1992. USA: Calexico, California.
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- 3700 LA Lacey (Ma18). Nymph, *Bemisia tabaci* [Hemiptera: Aleyrodidae] on eggplant. 10 Apr 1992. India: Padappai.
- 3800 ERD Reyes (PF4). Adult, *Bemisia* sp. [Hemiptera: Aleyrodidae] watermelon. 6 Jan 1991. Mexico: Colima.
- 3824 [ATCC 24318; FPMI 961] N Underwood (AR-SEF3682). *Diuraphis noxia* [Hemiptera: Aphididae]. Rec'd Jan 1993. Laboratory manipulation.
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- 4401 LA Lacey (94061). *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] eggplant. 24 Mar 1994. Malaysia: Kuala Terla.
- 4404 LA Lacey (94029). *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] Sonchus. 24 Mar 1994. Malaysia: Kuala Terla.
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- 4409 LA Lacey (94070). *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] Sonchus. 24 Mar 1994. Malaysia: Kuala Terla.
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- 4480 LA Lacey (Pfr.3660). Host not specified. Rec'd 12 Jul 1994. USA: Calexico, California.
- 4481 LA Lacey (Pfr3663). Host not specified. Rec'd 12 Jul 1994. USA: Calexico, California.
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- 4483 LA Lacey (92134) ← A Kirk. Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 19 Sep 1992. Nepal: Katmandu.
- 4484 LA Lacey (92135) ← A Kirk. Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 19 Sep 1992. Nepal: Katmandu.
- 4485 LA Lacey (92136) ← A Kirk. Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 19 Sep 1992. Nepal: Katmandu.
- 4486 LA Lacey (92138) ← A Kirk. Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 19 Sep 1992. Nepal: Katmandu.
- 4487 LA Lacey (Pfr3572). Host not specified. 19 Sep 1992. USA: McAllen, Texas.
- 4488 LA Lacey (Pfr3594). Host not specified. 19 Sep 1992. USA: McAllen, Texas.
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- 4491 LA Lacey (Ma17). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 7 Apr 1992. India: Padappai.
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- 4495 LA Lacey (Ma21). Nymph, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 7 Apr 1992. India: Padappai.
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- 4498 LA Lacey (92111). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 14 Oct 1992. Pakistan: Multan.
- 4499 LA Lacey (992114). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 14 Oct 1992. Pakistan: Multan.
- 4500 LA Lacey (992115). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 14 Oct 1992. Pakistan: Multan.
- 4501 LA Lacey (992117). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 14 Oct 1992. Pakistan: Multan.
- 4502 LA Lacey (92118). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 14 Oct 1992. Pakistan: Multan.

- 4503 LA Lacey (992119). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 14 Oct 1992. Pakistan: Multan.
- 4698 J McManus (DnPfu28 and 96009ss#1.3Pss#1) ← LA Lacey (96009). Adult, *Diuraphis noxia* [Hemiptera: Aphididae]. Aug 1994. USA: USPSNL. Lab. manipulation., Ithaca, New York.
- 4699 J McManus (DnPfu29 and 2198.3P) ← ARSEF (2198). Adult, *Diuraphis noxia* [Hemiptera: Aphididae]. 24 Aug 1994. USA: USPSNL. Lab. manipulation., Ithaca, New York. ARSEF 2198 passed through and reisolated from RWA.
- 4700 J McManus (DnPfu28 and 2749.3Pss#1) ← ARSEF (2749). Adult, *Diuraphis noxia* [Hemiptera: Aphididae]. Aug 1994. USA: USPSNL. Lab. manipulation., Ithaca, New York. ARSEF 2749 passed through and reisolated from RWA.
- 4701 J McManus (DnPfu28 and 3889.3Pss#1). Adult, *Diuraphis noxia* [Hemiptera: Aphididae]. Aug 1994. USA: USPSNL. Lab. manipulation., Ithaca, New York. ARSEF 3889 passed through and reisolated from RWA.
- 4702 J McManus (DnPfu29 and 4460.3Pss#1) ← ARSEF (4460). Adult, *Diuraphis noxia* [Hemiptera: Aphididae]. Aug 1994. USA: USPSNL. Lab. manipulation., Ithaca, New York. ARSEF 4460 passed through and reisolated from RWA.
- 4703 Adult, *Diuraphis noxia* [Hemiptera: Aphididae]. Aug 1994. USA: USPSNL. Lab. manipulation., Ithaca, New York. ARSEF 4460 passed through and reisolated from RWA.
- 4704 J McManus (DnPfu29 and 4480.3P) ← ARSEF (4480). Adult, *Diuraphis noxia* [Hemiptera: Aphididae]. 24 Aug 1994. USA: USPSNL. Lab. manipulation., Ithaca, New York. ARSEF 4480 passed through and reisolated from RWA.
- 4705 J McManus (DnPfu28 and 4481.3Pss#1) ← ARSEF (4481). Adult, *Diuraphis noxia* [Hemiptera: Aphididae]. Aug 1994. USA: USPSNL. Lab. manipulation., Ithaca, New York. ARSEF 4481 passed through and reisolated from RWA.
- 4706 J McManus (DnPfu28 and 4482.3Pss#1). Adult, *Diuraphis noxia* [Hemiptera: Aphididae]. Aug 1994. USA: USPSNL. Lab. manipulation., Ithaca, New York. ARSEF 4482 passed through and reisolated from RWA.
- 4707 J McManus (DnPfu29 and 4487.3P). Adult, *Diuraphis noxia* [Hemiptera: Aphididae]. 24 Aug 1994. USA: USPSNL. Lab. manipulation., Ithaca, New York. ARSEF 4487 passed through and reisolated from RWA.
- 4708 J McManus (DnPfu29 and 4489.3P) ← ARSEF (4489). Adult, *Diuraphis noxia* [Hemiptera: Aphididae]. 24 Aug 1994. USA: USPSNL. Lab. manipulation., Ithaca, New York. ARSEF 4489 passed through and reisolated from RWA.
- 4709 J McManus (DnPfu29 and 4491.3P) ← ARSEF (4491). Adult, *Diuraphis noxia* [Hemiptera: Aphididae]. 24 Aug 1994. USA: USPSNL. Lab. manipulation., Ithaca, New York. ARSEF 4491 passed through and reisolated from RWA.
- 4710 J McManus (DnPfu29 and 4492.3P) ← ARSEF (4492). Adult, *Diuraphis noxia* [Hemiptera: Aphididae]. 24 Aug 1994. USA: USPSNL. Lab. manipulation., Ithaca, New York. ARSEF 4492 passed through and reisolated from RWA.
- 4711 J McManus (DnPfu29 and 4493.3P) ← ARSEF (4493). Adult, *Diuraphis noxia* [Hemiptera: Aphididae]. 24 Aug 1994. USA: USPSNL. Lab. manipulation., Ithaca, New York. ARSEF 4493 passed through and reisolated from RWA.
- 5085 LA Lacey (95075). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5086 LA Lacey (95076). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5087 LA Lacey (95077). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5088 LA Lacey (95078). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5089 LA Lacey (95079). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5090 LA Lacey (95080). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5107 LA Lacey (95097). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5113 LA Lacey (95103). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5115 LA Lacey (95105). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5116 LA Lacey (95106). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5117 LA Lacey (95107). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5118 LA Lacey (95108). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5119 LA Lacey (95109). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5121 LA Lacey (95111). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5122 LA Lacey (95071). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 12 Dec 1995. Pakistan: Multan.
- 5154 DR Sosa-Gómez (CNPSO-P77). *Bemisia argentifolii* [Hemiptera: Aleyrodidae]. 30 Jan 1996. Brazil: Primeiro de Maio, Paraná.
- 5155 DR Sosa-Gómez (CNPSO-P78). *Bemisia argentifolii* [Hemiptera: Aleyrodidae]. 30 Jan 1996. Brazil: Primeiro de Maio, Paraná.
- 5156 DR Sosa-Gómez (CNPSO-P79). *Bemisia argentifolii* [Hemiptera: Aleyrodidae]. 14 Mar 1996. Brazil: Primeiro de Maio, Paraná.

- 5157 DR Sosa-Gómez (CNPSO-P80). *Bemisia argentifolii* [Hemiptera: Aleyrodidae]. 14 Mar 1996. Brazil: Primeiro de Maio, Paraná.
- 5158 DR Sosa-Gómez (CNPSO-P81). *Bemisia argentifolii* [Hemiptera: Aleyrodidae]. 14 Mar 1996. Brazil: Primeiro de Maio, Paraná.
- 5159 DR Sosa-Gómez (CNPSO-P82). *Bemisia argentifolii* [Hemiptera: Aleyrodidae]. 14 Mar 1996. Brazil: Primeiro de Maio, Paraná.
- 5251 SARL (1) ← SP Wright (LEP-1). Larva, [Lepidoptera] Broccoli leaf. 18 Nov 1992. USA: Santa Maria, Texas.
- 5252 SARL (2) ← SP Wright (LEP-2). Larva, [Lepidoptera] Broccoli leaf. 18 Nov 1992. USA: Santa Maria, Texas.
- 5253 SARL (3) ← SP Wright (EC-1). Adult, *Eretmocerus californicus* [Hymenoptera: Aphelinidae] Broccoli. 18 Nov 1996. USA: Santa Maria, Texas.
- 5254 SARL (4) ← SP Wright (EC-2). Adult, *Eretmocerus californicus* [Hymenoptera: Aphelinidae] Broccoli. 18 Nov 1996. USA: Santa Maria, Texas.
- 5255 SARL (5) ← SP Wright (EC-3). Adult, *Eretmocerus californicus* [Hymenoptera: Aphelinidae] Broccoli. 18 Nov 1992. USA: Santa Maria, Texas.
- 5256 SARL (6) ← SP Wright (EC-4). Adult, *Eretmocerus californicus* [Hymenoptera: Aphelinidae] Broccoli. 18 Nov 1992. USA: Santa Maria, Texas.
- 5257 SARL (7) ← SP Wright (EC-5). Adult, *Eretmocerus californicus* [Hymenoptera: Aphelinidae] Broccoli. 18 Nov 1992. USA: Santa Maria, Texas.
- 5258 SARL (8) ← SP Wright (EC-6). Adult, *Eretmocerus californicus* [Hymenoptera: Aphelinidae] Broccoli. 18 Nov 1992. USA: Santa Maria, Texas.
- 5260 SARL (10) ← SP Wright (SPW-16). *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 18 Nov 1992. USA: Santa Maria, Texas.
- 5261 SARL (11) ← SP Wright (SPW-17). *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 18 Nov 1992. USA: Santa Maria, Texas.
- 5262 SARL (12) ← SP Wright (SPW-18). *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 18 Nov 1992. USA: Santa Maria, Texas.
- 5263 SARL (13) ← SP Wright (SPW-19). *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 18 Nov 1992. USA: Santa Maria, Texas.
- 5264 SARL (14) ← SP Wright (SPW-20). *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 18 Nov 1992. USA: Santa Maria, Texas.
- 5265 SARL (15) ← SP Wright (SPW-21). *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 18 Nov 1992. USA: Santa Maria, Texas.
- 5266 SARL (16) ← SP Wright (SPW-22). *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 18 Nov 1992. USA: Santa Maria, Texas.
- 5267 SARL (17) ← SP Wright (SPW-23). *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli leaf. 18 Nov 1992. USA: Santa Maria, Texas.
- 5268 SARL (18) ← SP Wright (SPW-24). *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli leaf. 18 Nov 1992. USA: Santa Maria, Texas. Many of the conidia seem a bit shorter and more ovoid than is usual for this species. Conidia in mass do have the gray/pink appearance expected of Pfr.
- 5269 SARL (19) ← SP Wright (SPW-29). Nymph, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Cabbage leaf. 10 Feb 1993. USA: Santa Maria, Texas.
- 5270 SARL (20) ← SP Wright (SPW-30). Nymph, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Cabbage leaf. 10 Feb 1993. USA: Santa Maria, Texas.
- 5271 SARL (21) ← SP Wright (SPW-31). Nymph, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Cabbage leaf. 10 Feb 1993. USA: Santa Maria, Texas.
- 5272 SARL (30) ← SP Wright ← LA Lacey (92119) ← APHIS (WFP-362). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 14 Oct 1992. Pakistan: Multan.
- 5297 [APHIS WFP-363] SARL (34) ← LA Lacey (92135) ← A Kirk. *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 6 Oct 1996. Nepal: Katmandu.
- 5298 [APHIS WFP-362] SARL (35) ← LA Lacey (92118). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 14 Oct 1992. Pakistan: Multan.
- 5299 SARL (36) ← SP Wright (LACEY 921155-Bt1) ← SARL (28). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. Rec'd 27 Aug 1996. Location not specified: Laboratory manipulation.
- 5300 SARL (37) ← SP Wright (Lacey 92133-Bt1) ← SARL (29). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. Rec'd 27 Aug 1996. Location not specified: Laboratory manipulation.
- 5301 SARL (38) ← S Wright (Lacey 92119-Bt1) ← SARL (30). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. Rec'd 27 Aug 1996. Location not specified: Laboratory manipulation.
- 5302 SARL (39) ← S Wright (Lacey Ma19-Bt1) ← SARL (31). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. Rec'd 27 Aug 1996. Location not specified: Laboratory manipulation.
- 5303 SARL (40) ← SP Wright (Lacey Ma21-Bt1). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. Rec'd 27 Aug 1996. Location not specified: Laboratory manipulation.
- 5304 SARL (42) ← SP Wright (Lacey 92135-Bt1) ← SARL (34). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. Rec'd 27 Aug 1996. Location not specified: Laboratory manipulation.
- 5305 SARL (43) ← SP Wright (Lacey 92118-Bt1) ← SARL (35). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. Rec'd 27 Aug 1996. Location not specified: Laboratory manipulation.

- 5307 SARL (45) ← SP Wraight. *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 3 Mar 1993. USA: Santa Maria, Texas.
- 5308 SARL (98) ← SP Wraight (SPW-34). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 26 Mar 1993. USA: Greenhouse, SARL, Weslaco, Texas.
- 5309 SARL (99) ← SP Wraight (SPW-35). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 26 Mar 1993. USA: Greenhouse, SARL, Weslaco, Texas.
- 5310 SARL (100) ← SP Wraight (SPW-36). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 26 Mar 1993. USA: Greenhouse, SARL, Weslaco, Texas.
- 5311 SARL (101) ← SP Wraight (SPW-37). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 26 Mar 1993. USA: Greenhouse, SARL, Weslaco, Texas.
- 5312 SARL (102) ← SP Wraight (SPW-38). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 26 Mar 1993. USA: Greenhouse, SARL, Weslaco, Texas.
- 5313 SARL (103) ← SP Wraight (SPW-39). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 26 Mar 1993. USA: Greenhouse, SARL, Weslaco, Texas.
- 5314 SARL (104) ← SP Wraight (SPW-40). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 26 Mar 1993. USA: Greenhouse, SARL, Weslaco, Texas.
- 5315 SARL (105) ← SP Wraight (SPW-41). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 26 Mar 1993. USA: Greenhouse, SARL, Weslaco, Texas.
- 5316 SARL (118) ← SP Wraight (3572-Bt-9) ← ARSEF (3572). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 10 Mar 1993. USA: Weslaco, Texas.
- 5317 SARL (119) ← SP Wraight (3572-Bt-10) ← ARSEF (3572). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 10 Mar 1993. USA: Weslaco, Texas.
- 5318 SARL (120) ← SP Wraight (3572-Bt-11) ← ARSEF (3572). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 10 Mar 1993. USA: Weslaco, Texas.
- 5319 SARL (121) ← SP Wraight (3572-Bt-12) ← ARSEF (3572). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 10 Mar 1993. USA: Weslaco, Texas.
- 5320 SARL (124) ← SP Wraight (SPW-50). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 8 Sep 1993. USA: Weslaco, Texas. Conidia seem a bit shorter and more ovoid than would be normal for this species and colony/conidial mass is a bit less colored than expected.
- 5322 SARL (126) ← SP Wraight (SPW-52) ← JA Correa. Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Soybean. 9 Sep 1993. USA: Rio Farm variety trial field, Monte Alto, Texas.
- 5323 SARL (127) ← SP Wraight (SPW-53) ← JA Correa. Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Soybean. 9 Sep 1993. USA: Rio Farm variety trial field, Monte Alto, Texas.
- 5324 SARL (128) ← SP Wraight (SPW-54) ← JA Correa. Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Soybean. 9 Sep 1993. USA: Rio Farm variety trial field, Monte Alto, Texas.
- 5325 SARL (129) ← SP Wraight (SPW-55). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Soybean. 9 Sep 1993. USA: Rio Farm variety trial field, Monte Alto, Texas.
- 5326 SARL (130) ← SP Wraight (SPW-56) ← JA Correa. Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Soybean. 9 Sep 1993. USA: Rio Farm variety trial field, Monte Alto, Texas.
- 5327 SARL (131) ← SP Wraight (3572-Bt-1) ← ARSEF (3572). Nymph, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Cotton. Rec'd 27 Aug 1996. USA: Phoenix, Arizona.
- 5328 SARL (132) ← SP Wraight (3572-Bt-2) ← ARSEF (3572). Nymph, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Cotton. Rec'd 27 Aug 1996. USA: Phoenix, Arizona.
- 5329 SARL (145) ← SP Wraight (3572-Btx3) ← ARSEF (3572). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. Rec'd 27 Aug 1996. Location not specified: Laboratory manipulation.
- 5330 SARL (147) ← S Doerfler and B Flores ← TJ Poprawski. Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Okra. 6 Sep 1994. USA: Harlingen, Texas.
- 5331 SARL (149) ← S Doerfler, B Flores and TJ Poprawski. Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Okra. 6 Sep 1994. USA: Harlingen, Texas.
- 5462 TJ Poprawski (TJP927). 3rd instar larva, *Bemisia argentifolii* [Hemiptera: Aleyrodidae]. Rec'd 9 May 1997. USA: Weslaco, Texas. From Mycotech 612 prepared as freeze-dried blastospores.
- 5463 TJ Poprawski (TJP928). 3rd instar larva, *Bemisia argentifolii* [Hemiptera: Aleyrodidae]. Rec'd 9 May 1997. USA: Weslaco, Texas. From Mycotech 612 prepared as air-dried blastospores.
- 5464 TJ Poprawski (TJP929). 3rd instar larva, *Bemisia argentifolii* [Hemiptera: Aleyrodidae]. Rec'd 9 May 1997. USA: Weslaco, Texas. From Mycotech 612 prepared as fresh blastospores.
- 5475 LA Lacey (EBCL 92116). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 27 Sep 1992. Pakistan: Multan.
- 5476 LA Lacey (EBCL 92117). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 27 Sep 1992. Pakistan: Multan.
- 5540 FA Cantone. Rec'd 2 Jun 2000. Laboratory manipulation: USPSNL; Ithaca, NY. Single spore isolate from ARSEF 4461 passed through *Plutella xylostella*.
- 5627 I Vänninen (SF86-82). Larva, *Tenebrio molitor* [Coleoptera: Tenebrionidae] as bait from soil. Aug 1986. Finland: Kymenlaakso.

- 5694 JM Sung (KEFC-919). [Coleoptera]. 28 Jun 1996. Republic of Korea: Book-Bang, Hong-Cheon Kun, Kangwon-do.
- 5844 T Steenberg (SSL 58). Larva, *Alphitobius diaperinus* [Coleoptera: Tenebrionidae]. Rec'd 26 Aug 1998. Originally isolated from soil.
- 5845 T Steenberg (SSL 59). Larva, *Alphitobius diaperinus* [Coleoptera: Tenebrionidae]. Rec'd 26 Aug 1998. Originally isolated from soil.
- 5846 T Steenberg (SSL 61). Larva, *Alphitobius diaperinus* [Coleoptera: Tenebrionidae]. Rec'd 26 Aug 1998. Originally isolated from soil.
- 5847 T Steenberg (SSL 62). Larva, *Alphitobius diaperinus* [Coleoptera: Tenebrionidae]. Rec'd 26 Aug 1998. Originally isolated from soil.
- 5855 T Steenberg (SSL 531). Nymph, *Blattella germanica* [Dictyoptera: Blattellidae]. 20 Aug 1996. Denmark: Hospital, Copenhagen, Zealand.
- 5860 T Steenberg (SSL 617). Adult, *Musca domestica* [Diptera: Muscidae]. Mar 1997. Denmark: Stable, Lynge, Zealand.
- 5874 FE Vega (EBCL 98001). Larva, *Plutella xylostella* [Lepidoptera: Plutellidae]. 22 Aug 1997. Romania: Voronetz.
- 6192 FE Vega (EBCL 99029). Adult, *Cydia pomonella* [Lepidoptera: Tortricidae]. 5 Oct 1998. Bulgaria: Jabalkovo.
- 6203 FE Vega (EBCL 98039). Adult, *Cydia pomonella* [Lepidoptera: Tortricidae]. 19 Feb 1998. France: Crespian, Gard.
- 6204 FE Vega (EBCL 98040). Adult, *Cydia pomonella* [Lepidoptera: Tortricidae]. 19 Feb 1998. France: Crespian, Gard.
- 6206 FE Vega (EBCL 98042). *Lymantria dispar* [Lepidoptera: Lymantriidae]. 20 Jul 1998. France: Pujaudrau.
- 6434 DEN Rangel (JAB 11). Biotype B, *Bemisia tabaci* [Hemiptera: Aleyrodidae] on cotton. Mar 1998. Brazil: Miguelópolis, São Paulo.
- 6435 DEN Rangel (JAB 12). Biotype B, *Bemisia tabaci* [Hemiptera: Aleyrodidae] on poinsettia. 3 Sep 1999. Brazil: Glasshouse, FCAV/UNESP, Jaboticabal, São Paulo.
- 6562 D Chandler (HRI 402.93). *Bemisia tabaci* [Hemiptera: Aleyrodidae]. Rec'd 13 Jul 2000. United Kingdom.
- 6610 JL Hatting (2). Unspecified tick, [Acari]. Rec'd 27 Sep 2000. Hungary: Budapest, Budapest.
- 6615 JL Hatting. Rec'd 27 Sep 2000.
- 6730 FE Vega (EBCL 97054). *Hypothenemus hampei* [Coleoptera: Scolytidae]. Rec'd 23 Feb 2001. Ivory Coast.
- 6789 FJ Posada (CEFC F-0001). Nymph & adult, [Hemiptera: Aphididae] on *Montanoa ovatifolia* (DC) Schultz-Bip., arboloco. May 2000. Colombia: Greenhouse, Chinchiná, Caldas.
- 6797 G Mercadier (EBCL 00049). *Bemisia* sp. [Hemiptera: Aleyrodidae]. 7 Aug 2000. Hong Kong: Tai Lung Experimental Station, Sheung Shui.
- 6798 G Mercadier (EBCL 00050). *Bemisia* sp. [Hemiptera: Aleyrodidae]. 7 Aug 2000. Hong Kong: Tai Lung Experimental Station, Sheung Shui.
- 6799 G Mercadier (EBCL 00051). Pupa, *Plutella xylostella* [Lepidoptera: Plutellidae] on *Brassica oleracea* L., cabbage. 13 Jul 2000. Australia: Tableland, Atherton, Queensland.
- 6800 G Mercadier (EBCL 00052). Pupa, *Plutella xylostella* [Lepidoptera: Plutellidae] on *Brassica oleracea* L., cabbage. 13 Jul 2000. Australia: Tableland, Atherton, Queensland.
- 6893 E Zhioua (T81). *Galleria mellonella* [Lepidoptera: Pyralidae] as bait from soil. Rec'd May 2001.
- 6916 C López Lastra (2). Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Lycopersicon esculentum* Miller, tomato in covered greenhouses. 1 Jun 2001. Argentina: Colonia Urquiza, La Plata, Buenos Aires.
- 7029 L Li. Rec'd 6 May 2002.
- 7050 C López Lastra. [Hemiptera: spf. Fulgoroidea]. Nov 2001. Argentina: La Plata, Buenos Aires.
- 7051 C López Lastra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Lycopersicon esculentum* Miller, tomato crop. 23 Apr 2002. Argentina: Colonia Urquiza, La Plata, Buenos Aires.
- 7069 T Steenberg (319). Engorged female, *Ixodes ricinus* [Acari: Ixodidae] Collected from deer. Oct 1991. Denmark: Jægersborg Dyrehave, Zealand.
- 7204 [CEP 051] C López Lastra. *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Apium graveolens* var. *dulce* (Miller) Pers., celery. 9 Apr 2003. Argentina: El Peligro, La Plata, Buenos Aires. **RESTRICTED ACCESS: consult Curator.**
- 7205 [CEP 055] C López Lastra. *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Apium graveolens* var. *dulce* (Miller) Pers., celery. 9 Jun 2003. Argentina: El Peligro, La Plata, Buenos Aires. **RESTRICTED ACCESS: consult Curator.**
- 7284 FE Vega (MPM-5). Adult, *Hypothenemus hampei* [Coleoptera: Scolytidae]. Rec'd 8 Jan 2004. Mexico: Tapachula, Chiapas.
- 7347 M Liu. 12 Aug 2003. USA: Stasley residence, La Belle, Florida.
- 7523 M Filotas. Rec'd 5 Nov 2004.
- 7716 [SRCAMB B-173] V Likhovidov ← BA Borisov. [Coleoptera]. Aug 2002. Russian Federation: Lazovsky Nature Reserve, Primorsky Krai. Field Collection Number F-189.
- 7740 [SRCAMB B-15] V Likhovidov ← BA Borisov. Phylum Arthropoda, Class Insecta. Jul 2001. Russian Federation: Kedrovaya Pad Nature Reserve, Primorsky Krai. Field Collection Number F-194.

- 7743 [SRCAMB B-101] V Likhovidov ← BA Borisov. [Lepidoptera] Isolated from stroma of *Cordyceps takaomontana*. Aug 2002. Russian Federation: Lazovsky Nature Reserve, Primorsky Krai. Field Collection Number F-282.
- 8142 LS Bauer and H Liu (MF-233). 4th instar larva, *Agilus planipennis* [Coleoptera: Buprestidae]. 28 Jul 2006. USA: Brighton, Michigan.
- 8333 Z Demirbag (KTU-1). *Galleria mellonella* [Lepidoptera: Pyralidae] as bait from soil. 13 Jul 2006. Turkey: Yomra, Trabzon.
- 8337 Z Demirbag (KTU-5). *Galleria mellonella* [Lepidoptera: Pyralidae] as bait from soil. 13 Jul 2006. Turkey: Derapazari, Rize.
- 8345 Z Demirbag (KTU-13). *Galleria mellonella* [Lepidoptera: Pyralidae] as bait from soil. 23 Jul 2006. Turkey: Kesap, Giresun.
- 8348 Z Demirbag (KTU-16). *Galleria mellonella* [Lepidoptera: Pyralidae] as bait from soil. 16 Sep 2006. Turkey: Muratli, Artvin.
- 8448 Z Demirbag (KTU-42). *Galleria mellonella* [Lepidoptera: Pyralidae] as bait from soil. 13 Apr 2007. Turkey: Ikizdere, Rize.
- 8716 [CEP 302] CP D'Alessandro and C López Lastra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae]. 22 May 2007. **RESTRICTED ACCESS:** *consult Curator*.
- 8717 [CEP 303] CP D'Alessandro and C López Lastra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Apium graveolens* L., celery crop. 4 Jun 2007. Argentina: Quinta Marian del Pino, Abasto, La Plata, Buenos Aires. **RESTRICTED ACCESS:** *consult Curator*.
- 8718 [CEP 304] CP D'Alessandro and C López Lastra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Lycopersicon esculentum* Miller, tomato crop. 3 Oct 2007. Argentina: Quinta Marcelo Maita, Colonia Urquiza, La Plata, Buenos Aires. **RESTRICTED ACCESS:** *consult Curator*.
- 8719 [CEP 305] CP D'Alessandro and C López Lastra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Lycopersicon esculentum* Miller, tomato crop. 3 Oct 2007. Argentina: Quinta Marcelo Maita, Colonia Urquiza, La Plata, Buenos Aires. **RESTRICTED ACCESS:** *consult Curator*.
- 8720 [CEP 306] CP D'Alessandro and C López Lastra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Lycopersicon esculentum* Miller, tomato crop. 10 Oct 2007. Argentina: Quinta Marcelo Maita, Colonia Urquiza, La Plata, Buenos Aires. **RESTRICTED ACCESS:** *consult Curator*.
- 8721 [CEP 307] CP D'Alessandro and C López Lastra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Lycopersicon esculentum* Miller, tomato crop. 16 Oct 2007. Argentina: Quinta Marcelo Maita, Colonia Urquiza, La Plata, Buenos Aires. **RESTRICTED ACCESS:** *consult Curator*.
- 8723 [CEP 308] CP D'Alessandro and C López Lastra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Phaseolus vulgaris* L., string bean. 4 Jun 2007. Argentina: Quinta Marcelo Maita, Colonia Urquiza, La Plata, Buenos Aires. **RESTRICTED ACCESS:** *consult Curator*.
- 8724 [CEP 309] CP D'Alessandro and C López Lastra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Beta vulgaris* subsp. *cicla* (L.), chard. 6 Jun 2007. Argentina: Quinta Marcelo Maita, Colonia Urquiza, La Plata, Buenos Aires. **RESTRICTED ACCESS:** *consult Curator*.
- 8725 [CEP 310] CP D'Alessandro and C López Lastra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Beta vulgaris* subsp. *cicla* (L.), chard. 6 Jun 2007. Argentina: Quinta Marcelo Maita, Colonia Urquiza, La Plata, Buenos Aires. **RESTRICTED ACCESS:** *consult Curator*.
- 8726 [CEP 311] CP D'Alessandro and C López Lastra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Beta vulgaris* subsp. *cicla* (L.), chard. 6 Jun 2007. Argentina: Quinta Marcelo Maita, Colonia Urquiza, La Plata, Buenos Aires. **RESTRICTED ACCESS:** *consult Curator*.
- 8727 [CEP 312] CP D'Alessandro and C López Lastra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Phaseolus vulgaris* L., string bean. 13 Jun 2007. Argentina: Quinta Marcelo Maita, Colonia Urquiza, La Plata, Buenos Aires. **RESTRICTED ACCESS:** *consult Curator*.
- 8728 [CEP 313] CP D'Alessandro and C López Lastra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Solanum melongena* L., eggplant. 13 Jun 2007. Argentina: Quinta Marcelo Maita, Colonia Urquiza, La Plata, Buenos Aires. **RESTRICTED ACCESS:** *consult Curator*.
- 8729 [CEP 314] CP D'Alessandro and C López Lastra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Phaseolus vulgaris* L., string bean. 22 May 2007. Argentina: Quinta Marcelo Maita, Colonia Urquiza, La Plata, Buenos Aires. **RESTRICTED ACCESS:** *consult Curator*.
- 8730 [CEP 315] CP D'Alessandro and C López Lastra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Phaseolus vulgaris* L., string bean. 22 May 2007. Argentina: Quinta Marcelo Maita, Colonia Urquiza, La Plata, Buenos Aires. **RESTRICTED ACCESS:** *consult Curator*.
- 8840 [CSIRO FI-1275] [Coleoptera: Chrysomelidae]. 5 Aug 1998. Australia: Tasmania.
- 8892 [CSIRO FI-1296] *Rhopaea magnicornis* [Coleoptera: Scarabaeidae] from insect A11. 22 Dec 1998. Australia: Condong, New South Wales.

- 8928 [CEP 316] CP D'Alessandro and C López Las-tra. Adult, *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Phaseolus vulgaris* L., string bean. 22 May 2007. Argentina: Colonia Urquiza, La Plata, Buenos Aires. **RESTRICTED ACCESS:** consult Curator.
- 9294 [ERL 1594] VS Gouli (Thr-08-P3). Isolated from soil sample. 2008. USA: Vermont.
- 9380 E Groden. Larva, *Galleria mellonella* [Lepidoptera: Pyralidae]. 17 Jun 2009. USA: Acadia National Park, Mount Desert Island, Maine.
- 9520 [SRCAMB VL-1528] V Likhovidov. Larva, [Lepidoptera]. 11 Sep 2004. Russian Federation: Caucasus region, Sochi District, Krasnodarsky Krai. Field Collection Number F-518.
- 9521 [SRCAMB VL-2057] V Likhovidov. *Coccinella septempunctata* [Coleoptera: Coccinellidae]. Aug 2000. Ukraine: Kherson Oblast. Field Collection Number F-749.
- 9582 [ERL 1739] S Gouli and V Gouli (Thr.-08-P/16). Isolated from soil sample. 2008. USA: Vermont.
- 9583 [ERL 1740] S Gouli (Thr.-08-P/17) and V Gouli. Isolated from soil sample. 2008. USA: Vermont.
- 9584 [ERL 1741] S Gouli and V Gouli (Thr.-08-P/18). Isolated from soil sample. 2008. USA: Vermont.
- 9585 [ERL 1742] S Gouli (Thr.-08-P/19) and V Gouli. Isolated from soil sample. 2008. USA: Vermont.
- 9586 [ERL 1743] S Gouli and V Gouli (Thr.-08-P/20). Isolated from soil sample. 2008. USA: Vermont.
- 9602 X Zou (9). [Coleoptera]. Rec'd 19 Jan 2010. PR China: Guizhou Province.
- 10224 M Kereselidze. Pupa, *Hyphantria cunea* [Lepidoptera: Arctiidae] from bark of *Morus* sp., mulberry. Sep 2008. Republic of Georgia: western Georgia.
- 10258 2010.
- 11657 [NCRI 167/02] K Westrum. Larva, *Galleria mellonella* [Lepidoptera: Pyralidae] as bait from soil. 1 Oct 2001. Norway: Olav Feten, Nessane, Balestrand, Sogn og Fjordane. Soil sample from conventional apple orchard.
- 11658 [NCRI 230/02] K Westrum. Larva, *Galleria mellonella* [Lepidoptera: Pyralidae] as bait from soil. 1 Oct 2001. Norway: Olav Feten, Nessane, Balestrand, Sogn og Fjordane. Soil sample from conventional apple orchard.
- 11659 [NCRI 232/02] K Westrum. Larva, *Galleria mellonella* [Lepidoptera: Pyralidae] as bait from soil. 1 Oct 2001. Norway: Olav Feten, Nessane, Balestrand, Sogn og Fjordane. Soil sample from conventional apple orchard.
- 12172 I Erper (TR-78-2). Pupa, *Hyphantria cunea* [Lepidoptera: Arctiidae]. Rec'd 3 Jun 2013. Turkey.
- 12173 I Erper (TR-78-3). Pupa, *Hyphantria cunea* [Lepidoptera: Arctiidae]. Rec'd 3 Jun 2013. Turkey.
- 12174 I Erper (TR-78-4). Pupa, *Hyphantria cunea* [Lepidoptera: Arctiidae]. Rec'd 3 Jun 2013. Turkey.
- 12175 I Erper (TR-78-5). Pupa, *Hyphantria cunea* [Lepidoptera: Arctiidae]. Rec'd 3 Jun 2013. Turkey.
- 12177 I Erper (TR-78-7). Pupa, *Hyphantria cunea* [Lepidoptera: Arctiidae]. Rec'd 3 Jun 2013. Turkey.
- 13225 MA Ansari (BNL301). Soil, using *Galleria mellonella* [Lepidoptera: Pyralidae] as a trap. Rec'd 17 Mar 2016. United Kingdom.
- 13273 [AS Lestari W4] [Lepidoptera: Pyralidae]. 7 Oct 2013. USA: Polk County, Oregon.
- Isaria guaensis*** Rombach & Humber (unpubl. sp. nov.)
[Sordariomycetes: Hypocreales]
Cordycipitaceae
- 2152 MC Rombach (190386-1). [Orthoptera: Gryllidae]. 19 Mar 1986. Indonesia: burial caves at Londa, nr. Makale, Sulawesi Selatan, Celebes.
- Isaria javanica*** (Friederichs & Bally) Samson & Hywel-Jones
[Sordariomycetes: Hypocreales]
Cordycipitaceae. Major synonym: *Paecilomyces javanicus* (Friederichs & Bally) Brown & Smith. Reclassified during a phylogenetically necessary reclassification of *Paecilomyces* Section *Isarioidea*.
- 322 GR Buckingham. *Litodactylus leucogaster* [Coleoptera: Curculionidae]. Dec 1978. USA: Gainesville, Florida.
- 704 RS Soper. *Bombyx mori* [Lepidoptera: Bombycidae]. 11 Nov 1981. PR China: Hangzhou, Zhejiang.
- 3303 J Gutierrez Samperio (19) ← ERD Reyes. *Bemisia* sp. [Hemiptera: Aleyrodidae] on watermelon. 1990. Mexico: Tecomán, Colima.
- 3573 TJ Poprawski (3). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 3 Feb 1992. USA: cabbage field, McAllen, Texas.
- 3577 TJ Poprawski (7). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 3 Feb 1992. USA: cabbage field, McAllen, Texas.
- 3776 SP Wraight (SPW-11). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] poinsettia leaves. 24 Aug 1992. USA: Weslaco, Texas.
- 3778 SP Wraight (F92-2) ← J Salinus. *Bemisia tabaci* [Hemiptera: Aleyrodidae]. 9 Mar 1992. USA: Shary Plantation, Mission, Texas.
- 3981 LA Lacey (93018) ← INRA (Pfr028). *Mamestra brassicae* [Lepidoptera: Noctuidae]. 1975. France: Ile de France.
- 5259 SARL (9) ← SP Wraight (SPW-15). *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 18 Nov 1992. USA: Santa Maria, Texas.
- 5321 SARL (125) ← SP Wraight (SPW-51). Adult, *Bemisia tabaci* [Hemiptera: Aleyrodidae] Broccoli. 8 Sep 1993. USA: Weslaco, Texas.

- 5806 DA Rodríguez Sierra (UJ89002). Rec'd 7 Aug 1998. Commercial isolate.
- 7119 HE Cabanillas. Adult, [Coleoptera] on wild olive tree. 29 Oct 2002. USA: Weslaco, Texas.
- 7477 [CEP 107] C López Lastra. *Trialeurodes vaporariorum* [Hemiptera: Aleyrodidae] on *Lycopersicon esculentum* Miller, tomato crop. 4 Apr 2004. Argentina: Colonia Urquiza, La Plata, Buenos Aires.
- Isaria poprawskii*** Cabanillas, Humber, de León & Jones
[Sordariomycetes: Hypocreales]
Cordycipitaceae
-
- 7028 HE Cabanillas. *Bemisia argentifolii* [Hemiptera: Aleyrodidae] on *Solanum melongena* L., eggplant in greenhouse. 28 Sep 2001. USA: Kika de la Garza Subtropical Agricultural Research Center, Weslaco, Texas. CULTURE EX TYPE.
- Isaria sinclairii*** (Berkeley) Lloyd
[Sordariomycetes: Hypocreales]
Cordycipitaceae
-
- 6925 [ATCC 24400] Nymph, *Mogannia hebes* [Hemiptera: Cicadidae]. Rec'd 30 Nov 2001. Republic of China: Taiwan. Produces thermozytocidin, myriocidin.
- Isaria tenuipes*** Peck
[Sordariomycetes: Hypocreales]
Cordycipitaceae. Major synonym: *Paecilomyces tenuipes* (Peck) Samson. Reclassified during a phylogenetically necessary reclassification of *Paecilomyces* Section *Isarioidea*.
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- 2488 SR Sánchez Peña (A1). *Spodoptera frugiperda* [Lepidoptera: Noctuidae]. 16 Sep 1987. Mexico: Gómez Farías, Tamaulipas.
- 2489 SR Sánchez Peña (A2). *Spodoptera frugiperda* [Lepidoptera: Noctuidae]. 16 Sep 1987. Mexico: Gómez Farías, Tamaulipas.
- 2490 SR Sánchez Peña (B1). *Spodoptera frugiperda* [Lepidoptera: Noctuidae]. 16 Sep 1987. Mexico: Gómez Farías, Tamaulipas.
- 2491 SR Sánchez Peña (B2). *Spodoptera frugiperda* [Lepidoptera: Noctuidae]. 16 Sep 1987. Mexico: Gómez Farías, Tamaulipas.
- 3938 DR Sosa-Gómez (CNPSO-P41). [Lepidoptera: Noctuidae]. 31 Jan 1990. Brazil: Ivatuba, Paraná.
- 3939 DR Sosa-Gómez (CNPSO-P42). [Lepidoptera: Noctuidae]. Acc'd 18 Oct 1993. Brazil: Ponta Porã, Mato Grosso.
- 4096 LA Lacey (94006). Pupa, [Lepidoptera: Noctuidae]. Rec'd 28 Mar 1994. Brazil.
- 5134 KT Hodge (kth32a). Pupa, [Lepidoptera]. 17 Sep 1995. USA: Swamp off Hogsback Rd., Verona, Oneida County, New York. Specimen deposited in Cornell Plant Pathology Herbarium as CUP 63810.
- 5135 KT Hodge (kth32b). Pupa, [Lepidoptera]. 17 Sep 1995. USA: Swamp off Hogsback Rd. Verona, Oneida County, New York. Specimen deposited in Cornell Plant Pathology Herbarium as CUP 63811.
- 5700 JM Sung (KEFC-1662). Pupa, Phylum Arthropoda, Class Insecta. 20 Sep 1997. Republic of Korea: Book-Bang, Hong-Cheon Kun, Kangwon-do.
- 6249 [RCEF 0205] Pupa, [Lepidoptera]. Rec'd 24 Aug 1999. PR China: Anhui.
- 6788 FJ Posada (CEFC P-0003). Pupa, *Agraulis vanillae* [Lepidoptera: Nymphalidae] on *Passiflora edulis* Sims, maracuyá or purple granadilla. May 2000. Colombia: Butterfly rearing garden, Chinchiná, Caldas.
- 6889 H Cortez Madrigal (Pm). *Mocis latipes* [Lepidoptera: Noctuidae] on grass. Nov 2000. Mexico: Cárdenas, Tabasco.
- 7735 [SRCAMB B-104] V Likhovidov ← BA Borisov. Phylum Arthropoda, Class Insecta. Jul 2002. Russian Federation: Karachayevo-Cherkessiya Republ. Field Collection Number F-196.
- 7790 [SRCAMB VL-63] V Likhovidov. Pupa, [Lepidoptera]. 21 Sep 2001. Russian Federation: Caucasus region, Krasnaya Polyana, Krasnodarsky Krai. Field Collection Number F-303.
- 9531 [SRCAMB VL-1667] V Likhovidov. Pupa, [Lepidoptera]. 19 Sep 2004. Russian Federation: Caucasus region, Mostovsky District, Krasnodarsky Krai. Field Collection Number F-476.
- 9532 [SRCAMB VL-1564] V Likhovidov. Pupa, [Lepidoptera]. 14 Sep 2004. Russian Federation: Caucasus region, Sochi District, Krasnodarsky Krai. Field Collection Number F-488.
- 9533 [SRCAMB VL-1565/4] V Likhovidov. [Araneida]. 14 Sep 2004. Russian Federation: Caucasus region, Karachayevo-Cherkessiya Republ. Field Collection Number F-554.
- 9534 [SRCAMB B-667] V Likhovidov ← BA Borisov. Larva, [Lepidoptera]. 8 Jul 2005. Ukraine: Kiev. Field Collection Number F-1033.
- 11705 T Wen (FD-3). Pupa, [Lepidoptera]. 2011. PR China: Foding Mountain, Shiqian County, Guizhou Province.
- 11706 T Wen (FD-4). Pupa, [Lepidoptera]. 2011. PR China: Foding Mountain, Shiqian County, Guizhou Province.
- 11707 T Wen (LG-11-2). Pupa, [Lepidoptera]. 2011. PR China: Leigong Mountain, Guizhou Province.

Isaria sp.

[Coleoptera]
Unknown species 9519
[Diptera: Tipulidae]
Unknown species 9508
[Hemiptera: Adelgidae]
Adelges tsugae 11630
[Hemiptera: Pentatomidae]
Halyomorpha halys 13759
[Hemiptera: Psyllidae]
Unknown species 9517
[Hemiptera: Scutelleridae]
Eurygaster 10360 10363 10364 10365
10366 10367 10368 10369 10370
10371 10372 10373 10374 10375
10376 10377 10378 10379 10380
10381 10382 10383 10384 10385
11631 11632 11633 11634 11635
11636
[Hymenoptera: Cephidae]
Cephus cinctus 12941
[Orthoptera: Acrididae]
Melanoplus bivittatus 12433
Melanoplus femurrubrum 12409
[Thysanoptera: Thripidae]
Taeniothrips inconsequens 10162
11629

Isaria amoenerosea

[Coleoptera: Lagriidae]
Lagria vilosa 741 744 2220 2958 2959
2960 4097
[Coleoptera: Meloidae]
Unknown species 4849

Isaria andoi

[Diptera: Cecidomyiidae]
Resseliella odai 1684

Isaria cateniannulata

[Coleoptera: Curculionidae]
Unknown species 6241
Brachyderes incanus 6243
[Lepidoptera]
Unknown species 6240 9601 11722
[Lepidoptera: Arctiidae]
Hyphantria cunea 12167
[Lepidoptera: Lymantriidae]
Lymantria dissoluta 6242

Isaria cateniannulata(?)

[Lepidoptera: Arctiidae]
Hyphantria cunea 12166

Isaria cateniobliqua

[Coleoptera]
Unknown species 6244
[Orthoptera: Acridoidea]
Unknown species 6283

Isaria cicadae

[Lepidoptera]
Unknown species 11726

Isaria coleopterorum

[Coleoptera: Lampyridae]
Unknown species 9509
[Diptera: Tipulidae]
Unknown species 10163

Isaria farinosa

[Acari]
Unknown species 11825
[Araneida]
Unknown species 2376
[Araneida: Araneae]
Unknown species 5191
[Coleoptera]
Unknown species 2355 2379 9516
[Coleoptera: Buprestidae]
Agrilus planipennis 9944 9945
[Coleoptera: Carabidae]
Unknown species 11831
Agonum dorsale 4029 4044
Bembidion lampros 4043
Hapalus sp. 4045
[Coleoptera: Cerambycidae]
Unknown species 5073 5074 5075 5080
7276
Anoplophora glabripennis 8411
[Coleoptera: Chrysomelidae]
Unknown species 6491
Pyrrhalta luteola 1507 1508
[Coleoptera: Coccinellidae]
Unknown species 5754 5834
[Coleoptera: Curculionidae]
Unknown species 11830
Otiorynchus sulcatus 2431 2937
Premnotrypes vorax 799
Sitona lineatus 4039
[Coleoptera: Lagriidae]
Lagria vilosa 1957
[Coleoptera: Scarabaeidae]
Unknown species 6488 6489
Cylcocephala signaticolis 2973
[Coleoptera: Scolytidae]
Dendroctonus micans 9269 9270 9275
9276 9277 9278
[Coleoptera: Silphidae]
Unknown species 9511
[Coleoptera: Staphylinidae]
Staphylinus olens 4040
[Coleoptera: Tenebrionidae]
Unknown species 5699 11827
Alphitobius diaperinus 5858
Tenebrio molitor 8917
[Coleoptera: Elateroidea]
Unknown species 11710
[Collembola]
Unknown species 6482
[Diptera]
Unknown species 10156 10160 10165
11834 13362 13365
[Diptera: Bibionidae]
Unknown species 11828
[Diptera: Culicidae]
Aedes albifasciatus 2971
Aedes sierrensis 1939
[Diptera: Muscidae]
Unknown species 11832
[Diptera: Simuliidae]
Unknown species 11826
[Diptera: Tachinidae]
Unknown species 1348 1349
[Diptera: Tipulidae]
Unknown species 11824

[Diptera: Xylophagidae]
Unknown species 9512
[Hemiptera: Adelgidae]
Adelges tsugae 5178 5760 5761 5774
5775 5776 5784 5788 5790 5792
5797 5799 5800 5801 5802 5826
5827 5830 6028 6029 6030 6031
6032 6033 6034 6036 6037 6038
6048 6049
[Hemiptera: Aleyrodidae]
Aleurocanthus woglumi 2954
Bemisia tabaci 3572 3574 3575 3576
3578 3579 3580 3582 3583 3584
3585 3586 3587 3588 3589 3591
3592 3593 3658 3659 3661 5081
5082 5083 5084 5306
Trialeurodes vaporariorum 4405 4412
[Hemiptera: Aphididae]
Diuraphis noxia 6222 6609 6983
[Hemiptera: Coccidae]
Unknown species 9513
[Hemiptera: Delphacidae]
Nilaparvata lugens 2375
[Hemiptera: Lygaeidae]
Unknown species 6496
[Hemiptera: Miridae]
Unknown species 6607
[Hemiptera: Pentatomidae]
Unknown species 11833
Aelia 6097 6098 6493 6497
[Hemiptera: Scutelleridae]
Eurygaster 5675 5676 5679 6012 6017
6020 6044 6481 6490 6495
Eurygaster integriceps 6288
[Hymenoptera]
Unknown species 7249 7262
[Hymenoptera: Eulophidae]
Unknown species 11835
[Hymenoptera: Formicidae]
Unknown species 7728 9510
[Hymenoptera: Formicoidea]
Unknown species 9514
[Hymenoptera: Pamphiliidae]
Acantholyda erythrocephala 5548
[Hymenoptera: Tenthredinidae]
Pristiphora erichsonii 1851
[Lepidoptera]
Unknown species 2822 3152 4090 5996
6245 7118 7714 7720 7722 7723
7724 7725 7726 7730 7731 7733
7734 7736 7737 11721 11829
[Lepidoptera: Arctiidae]
Pyrrharctia isabella 3017
[Lepidoptera: Cossidae]
Prionoxystus robiniae 2269
[Lepidoptera: Geometridae]
Alosophila pometaria 5368
Lambda athisaria 3537 3538
[Lepidoptera: Lasiocampidae]
Unknown species 9515
Malacosoma americanum 3
[Lepidoptera: Lymantriidae]
Leucoma salicis 38
Lymantria dispar 20 648 697 2057
2131 2564 2835 3221 3490 3491
3492 3493 3494 3495 3496 3497

3498 3499 3500 3501 3502 3503	[Dictyoptera: Blattellidae]	[Lepidoptera: Arctiidae]
3504 3505 3506 3507 3508 3517	<i>Blattella germanica</i> 5855	<i>Hyphantria cunea</i> 1568 1569 1577
3518 3519 3520 3521 3522 3523	[Diptera]	1578 1579 10224 12172 12173
3524 3525 3526 3533 3595 3596	Unknown species 887	12174 12175 12177
3597 3598 3599 3664 3665 3666	[Diptera: ?Stratiomyidae]	[Lepidoptera: Bombycidae]
[Lepidoptera: Noctuidae]	Unknown species 2425	<i>Bombyx mori</i> 720 989 1005
<i>Agrotis segetum</i> 4010	[Diptera: Calliphoridae]	[Lepidoptera: Lymantriidae]
<i>Rivula atimeta</i> 2344	<i>Calliphora</i> 1646	<i>Lymantria dispar</i> 6206
<i>Spodoptera</i> 2546	[Diptera: Muscidae]	[Lepidoptera: Noctuidae]
[Lepidoptera: Notodontidae]	<i>Musca autumnalis</i> 1626	<i>Lycophotia</i> 3987
<i>Quadicalcarifera punctatella</i> 1042	<i>Musca domestica</i> 1644 1645 1867 1868	<i>Mamestra brassicae</i> 3986 3989
[Lepidoptera: Nymphalidae]	5860	<i>Scotia ipsilon</i> 3985
Unknown species 981	[Hemiptera: Aleyrodidae]	<i>Scotia segetum</i> 3984
<i>Chlosyne lacinia saundersii</i> 1065	<i>Bemisia</i> 3313 3800 6797 6798	<i>Spodoptera</i> 2734
[Lepidoptera: Pyralidae]	<i>Bemisia argentifolii</i> 5154 5155 5156	[Lepidoptera: Pieridae]
Unknown species 13274	5157 5158 5159 5462 5463 5464	<i>Pieris brassicae</i> 3982
<i>Galleria mellonella</i> 7531 7574 7575	<i>Bemisia tabaci</i> 3076 3083 3322 3408	[Lepidoptera: Plutellidae]
7576 7961 7962 8770 11656	3581 3590 3594 3660 3662 3663	<i>Plutella xylostella</i> 2749 5874 6799 6800
[Lepidoptera: Sesiidae]	3699 3700 3843 3848 3851 3878	[Lepidoptera: Pyralidae]
<i>Conopia myopaeformis</i> 1108	3889 4482 4483 4484 4485 4486	Unknown species 13273
[Lepidoptera: Tortricidae]	4490 4491 4492 4493 4494 4495	<i>Chilo suppressalis</i> 3988
<i>Cydia pomonella</i> 975 5883 5884 5885	4496 4497 4498 4499 4500 4501	<i>Diaphania hyalinata</i> 3302
6200 6202 6207	4502 4503 5085 5086 5087 5088	<i>Galleria mellonella</i> 6893 8333 8337
<i>Laspeyresia medicaginis</i> 1225	5089 5090 5107 5113 5115 5116	8345 8348 8448 9380 11657 11658
<i>Lobesia botrana</i> 1111	5117 5118 5119 5121 5122 5260	11659
[Opiliones]	5261 5262 5263 5264 5265 5266	<i>Ostrinia nubilalis</i> 3983
Unknown species 5194	5267 5268 5269 5270 5271 5272	[Lepidoptera: Tortricidae]
[Thysanoptera: Thripidae]	5297 5298 5299 5300 5301 5302	<i>Cydia pomonella</i> 6192 6203 6204
Unknown species 11822 11823	5303 5304 5305 5307 5308 5309	
<i>Taeniothrips inconsequens</i> 3564 10155	5310 5311 5312 5313 5314 5315	Isaria gualanensis
10157 10158 10159 10161 10231	5316 5317 5318 5319 5320 5322	[Orthoptera: Gryllidae]
	5323 5324 5325 5326 5327 5328	Unknown species 2152
Isaria farinosa(?)	5329 5330 5331 5475 5476 6434	
[Hemiptera: Psyllidae]	6435 6562	Isaria javanica
Unknown species 7219	<i>Trialeurodes vaporariorum</i> 2658 4205	[Coleoptera]
	4401 4404 4406 4407 4408 4409	Unknown species 7119
Isaria flavovirescens	4410 4411 4413 4414 4415 6916	[Coleoptera: Curculionidae]
[Diptera: Cecidomyiidae]	7051 7204 7205 8716 8717 8718	<i>Litodactylus leucogaster</i> 322
<i>Resseliella odai</i> 1686	8719 8720 8721 8723 8724 8725	[Hemiptera: Aleyrodidae]
	8726 8727 8728 8729 8730 8928	<i>Bemisia</i> 3303
Isaria fumosorosea		<i>Bemisia tabaci</i> 3573 3577 3776 3778
[Acari]	[Hemiptera: Aphididae]	5259 5321
Unknown species 6610	Unknown species 3682 4400 6789	<i>Trialeurodes vaporariorum</i> 7477
[Acari: Ixodidae]	<i>Diuraphis noxia</i> 3824 4383 4459 4460	[Lepidoptera: Bombycidae]
<i>Ixodes ricinus</i> 7069	4461 4698 4699 4700 4701 4702	<i>Bombyx mori</i> 704
[Coleoptera]	4703 4704 4705 4706 4707 4708	[Lepidoptera: Noctuidae]
Unknown species 5694 7716 9602	4709 4710 4711	<i>Mamestra brassicae</i> 3981
[Coleoptera: Buprestidae]	<i>Myzus persicae</i> 3458	
<i>Agrilus planipennis</i> 8142	[Hemiptera: Delphacidae]	Isaria poprawskii
[Coleoptera: Chrysomelidae]	<i>Nilaparvata lugens</i> 2198 2429	[Hemiptera: Aleyrodidae]
Unknown species 8840	[Hemiptera: Miridae]	<i>Bemisia argentifolii</i> 7028
<i>Pyrhalta luteola</i> 1506	<i>Adelphocoris</i> 1530 1532	
<i>Spaethiella</i> 2956	[Hemiptera: Pentatomidae]	Isaria sinclairii
[Coleoptera: Coccinellidae]	Unknown species 3429	[Hemiptera: Cicadidae]
<i>Coccinella septempunctata</i> 9521	[Hemiptera: Pseudococcidae]	<i>Mogannia hebes</i> 6925
[Coleoptera: Lagriidae]	<i>Phenacoccus solani</i> 2247	
<i>Lagria vilosa</i> 722 2216 2217 2219 2221	[Hemiptera: Psyllidae]	Isaria tenuipes
[Coleoptera: Scarabaeidae]	<i>Heteropsylla incisa</i> 2175	[Araneida]
<i>Popillia japonica</i> 2679	[Hemiptera: spf. Fulgoroidea]	Unknown species 9533
<i>Rhopaea magnicornis</i> 8892	Unknown species 7050	[Lepidoptera]
[Coleoptera: Scolytidae]	[Hymenoptera: Aphelinidae]	Unknown species 5134 5135 6249 7790
<i>Hypothenemus hampei</i> 6730 7284	<i>Eretmocerus californicus</i> 5253 5254	9531 9532 9534 11705 11706 11707
[Coleoptera: Tenebrionidae]	5255 5256 5257 5258	[Lepidoptera: Noctuidae]
<i>Alphitobius diaperinus</i> 5844 5845 5846	[Lepidoptera]	Unknown species 3938 3939 4096
5847	Unknown species 5251 5252 7743 9520	<i>Mocis latipes</i> 6889
<i>Tenebrio molitor</i> 5627		<i>Spodoptera frugiperda</i> 2488 2489 2490
		2491

[Lepidoptera: Nymphalidae]
Agraulis vanillae 6788

Animalia**Arthropoda • Arachnida****Acari**

Hungary
Isaria fumosorosea 6610
USA, Vermont
Isaria farinosa 11825

Acari: Ixodidae

Ixodes ricinus
Denmark
Isaria fumosorosea 7069

Araneida

Philippines
Isaria farinosa 2376
Russian Federation
Isaria tenuipes 9533

Araneida: Araneae

USA, Vermont
Isaria farinosa 5191

Opiliones

USA, Vermont
Isaria farinosa 5194

Arthropoda • Entognatha

Kyrgyz Republic
Isaria farinosa 6482

Arthropoda • Insecta

Belarus
Isaria sp. 9519
Philippines
Isaria farinosa 2355 2379
PR China
Isaria cateniobliqua 6244
Isaria fumosorosea 9602
Republic of Korea
Isaria fumosorosea 5694
Russian Federation
Isaria fumosorosea 7716
Ukraine
Isaria farinosa 9516
USA, Texas
Isaria javanica 7119

Coleoptera: Buprestidae

Agrilus planipennis
USA, Michigan
Isaria farinosa 9944 9945
Isaria fumosorosea 8142

Coleoptera: Carabidae

USA, Vermont
Isaria farinosa 11831
Agonum dorsale
Denmark
Isaria farinosa 4029 4044

Bembidion lampros
Denmark
Isaria farinosa 4043
Hapalus sp.
Denmark
Isaria farinosa 4045

Coleoptera: Cerambycidae

France
Isaria farinosa 5073 5074 5075 5080
Republic of Korea
Isaria farinosa 7276
Anoplophora glabripennis
USA, New York
Isaria farinosa 8411

Coleoptera: Chrysomelidae

Australia
Isaria fumosorosea 8840
Kazakhstan
Isaria farinosa 6491
Pyrrhalta luteola
France
Isaria farinosa 1507 1508
Isaria fumosorosea 1506
Spaethiella sp.
Brazil, Amazonas
Isaria fumosorosea 2956

Coleoptera: Coccinellidae

Turkey
Isaria farinosa 5754 5834
Coccinella septempunctata
Ukraine
Isaria fumosorosea 9521

Coleoptera: Curculionidae

PR China
Isaria cateniannulata 6241
USA, Vermont
Isaria farinosa 11830
Brachyderes incanus
PR China
Isaria cateniannulata 6243
Litodactylus leucogaster
USA, Florida
Isaria javanica 322
Otiorhynchus sulcatus
USA, Oregon
Isaria farinosa 2431 2937
Premnotrypes vorax
Colombia
Isaria farinosa 799
Sitona lineatus
Denmark
Isaria farinosa 4039

Coleoptera: Lagriidae

Lagria vilosa
Brazil
Isaria amoenerosea 4097
Brazil, Alagoas
Isaria farinosa 1957
Brazil, Goiás
Isaria amoenerosea 741 744 2220
2958 2959 2960
Isaria fumosorosea 722 2216 2217
2219 2221

Coleoptera: Lampyridae

Russian Federation
Isaria coleopterorum 9509

Coleoptera: Meloidae

Republic of Korea
Isaria amoenerosea 4849

Coleoptera: Scarabaeidae

Kazakhstan
Isaria farinosa 6488 6489
Cylcocephala signaticolis
 Argentina
Isaria farinosa 2973
Popillia japonica
 Portugal
Isaria fumosorosea 2679
Rhopaea magnicornis
 Australia
Isaria fumosorosea 8892

Coleoptera: Scolytidae

Dendroctonus micans
 Turkey
Isaria farinosa 9269 9270 9275 9276
 9277 9278
Hypothenemus hampei
 Ivory Coast
Isaria fumosorosea 6730
 Mexico
Isaria fumosorosea 7284

Coleoptera: Silphidae

Russian Federation
Isaria farinosa 9511

Coleoptera: Staphylinidae

Staphylinus olens
 Denmark
Isaria farinosa 4040

Coleoptera: Tenebrionidae

Republic of Korea
Isaria farinosa 5699
 USA, Vermont
Isaria farinosa 11827
Alphitobius diaperinus
Isaria fumosorosea 5844 5845 5846
 5847
 Denmark
Isaria farinosa 5858
Tenebrio molitor
 Finland
Isaria fumosorosea 5627
 Republic of China
Isaria farinosa 8917

Coleoptera: elateroidea

PR China
Isaria farinosa 11710

Dictyoptera: Blattellidae

Blattella germanica
 Denmark
Isaria fumosorosea 5855

Diptera

Chile
Isaria farinosa 13362 13365
 France
Isaria fumosorosea 887
 USA, Vermont
Isaria farinosa 10156 10160
 USA, New York
Isaria farinosa 10165
 USA, Vermont
Isaria farinosa 11834

Diptera: ?Stratiomyidae

Indonesia, Jawa Barat, Java
Isaria fumosorosea 2425

Diptera: Bibionidae

USA, Vermont
Isaria farinosa 11828

Diptera: Calliphoridae

Calliphora sp.
 France
Isaria fumosorosea 1646

Diptera: Cecidomyiidae

Resseliella odai
 Japan
Isaria andoi 1684
Isaria flavovirescens 1686

Diptera: Culicidae

Aedes albifasciatus
 Argentina
Isaria farinosa 2971
Aedes sierrensis
 USA, California
Isaria farinosa 1939

Diptera: Muscidae

USA, Vermont
Isaria farinosa 11832
Musca autumnalis
 France
Isaria fumosorosea 1626
Musca domestica
 Denmark
Isaria fumosorosea 5860
 France
Isaria fumosorosea 1644 1645 1867
 1868

Diptera: Simuliidae

USA, Vermont
Isaria farinosa 11826

Diptera: Tachinidae

Poland
Isaria farinosa 1348 1349

Diptera: Tipulidae

Ukraine
Isaria sp. 9508
 USA, Vermont
Isaria coleopterorum 10163
Isaria farinosa 11824

Diptera: Xylophagidae

Russian Federation
Isaria farinosa 9512

Hemiptera: Adelgidae

Adelges tsugae
 PR China
Isaria farinosa 6028 6029 6030 6031
 6032 6033 6034 6036 6037 6038
 6048 6049
 USA, Massachusetts
Isaria farinosa 5178
 USA, Virginia
Isaria farinosa 5760 5761
 USA, Massachusetts
Isaria farinosa 5774 5775 5776 5784
 5788 5790 5792 5797 5799 5800
 5801 5802
 USA, Connecticut
Isaria farinosa 5826 5827
 USA, Massachusetts
Isaria farinosa 5830
Isaria sp. 11630

Hemiptera: Aleyrodidae

Aleurocanthus woglumi
 USA, Florida
Isaria farinosa 2954
Bemisia sp.
 Hong Kong
Isaria fumosorosea 6797 6798
 Mexico
Isaria fumosorosea 3313 3800
Isaria javanica 3303
Bemisia argentifolii
 Brazil, Paraná
Isaria fumosorosea 5154 5155 5156
 5157 5158 5159
 USA, Texas
Isaria fumosorosea 5462 5463 5464
Isaria poprawskii 7028
Bemisia tabaci
 Brazil, São Paulo
Isaria fumosorosea 6434 6435
 India
Isaria fumosorosea 3699 3700 3843
 4490 4491 4492 4493 4494 4495
 4496 4497
 Location not specified
Isaria fumosorosea 3408 5299 5300
 5301 5302 5303 5304 5305 5329
 Nepal
Isaria fumosorosea 4482 4483 4484
 4485 4486 5297
 Pakistan
Isaria farinosa 5081 5082 5083 5084
Isaria fumosorosea 3848 3851 3878
 4498 4499 4500 4501 4502 4503
 5085 5086 5087 5088 5089 5090
 5107 5113 5115 5116 5117 5118
 5119 5121 5122 5272 5298 5475
 5476
 United Kingdom
Isaria fumosorosea 6562
 USA, Texas
Isaria farinosa 3572 3574 3575 3576
 3578 3579 3580 3582 3583 3584
 3585 3586 3587 3588 3589 3591
 3592 3593
 USA, California
Isaria farinosa 3658 3659 3661

USA, Texas <i>Isaria fumosorosea</i> 3581 3590 3594	Hemiptera: Coccidae Ukraine <i>Isaria farinosa</i> 9513	<i>Eurygaster integriceps</i> Iran <i>Isaria farinosa</i> 6288
USA, California <i>Isaria fumosorosea</i> 3660 3662 3663	Hemiptera: Delphacidae <i>Nilaparvata lugens</i>	Hemiptera: spf. Fulgoroidea Argentina <i>Isaria fumosorosea</i> 7050
USA, Texas <i>Isaria javanica</i> 3573 3577 3776 3778	Indonesia, Jawa Barat, Java <i>Isaria fumosorosea</i> 2429	Hymenoptera Republic of Korea <i>Isaria farinosa</i> 7249 7262
USA, Arizona <i>Isaria fumosorosea</i> 5327 5328	Philippines <i>Isaria farinosa</i> 2375 <i>Isaria fumosorosea</i> 2198	Hymenoptera: Aphelinidae <i>Eretmocerus californicus</i> USA, Texas <i>Isaria fumosorosea</i> 5253 5254 5255 5256 5257 5258
USA, Florida <i>Isaria fumosorosea</i> 3076 3083 3322	Hemiptera: Lygaeidae Kazakhstan <i>Isaria farinosa</i> 6496	Hymenoptera: Cephidae <i>Cephus cinctus</i> USA, Montana <i>Isaria</i> sp. 12941
USA, Hawaii <i>Isaria fumosorosea</i> 3889	Hemiptera: Miridae South Africa <i>Isaria farinosa</i> 6607	Hymenoptera: Eulophidae USA, New York <i>Isaria farinosa</i> 11835
USA, Texas <i>Isaria farinosa</i> 5306 <i>Isaria fumosorosea</i> 5260 5261 5262 5263 5264 5265 5266 5267 5268 5269 5270 5271 5307 5308 5309 5310 5311 5312 5313 5314 5315 5316 5317 5318 5319 5320 5322 5323 5324 5325 5326 5330 5331 <i>Isaria javanica</i> 5259 5321	<i>Adelphocoris</i> sp. Italy <i>Isaria fumosorosea</i> 1530 1532	Hymenoptera: Formicidae Russian Federation <i>Isaria farinosa</i> 7728 9510
<i>Trialeurodes vaporariorum</i> <i>Isaria fumosorosea</i> 8716	Hemiptera: Pentatomidae Costa Rica <i>Isaria fumosorosea</i> 3429	Hymenoptera: Formicoidea Belarus <i>Isaria farinosa</i> 9514
Argentina <i>Isaria fumosorosea</i> 6916 7051 7204 7205 8717 8718 8719 8720 8721 8723 8724 8725 8726 8727 8728 8729 8730 8928 <i>Isaria javanica</i> 7477	USA, Vermont <i>Isaria farinosa</i> 11833 <i>Aelia</i> sp. Kazakhstan <i>Isaria farinosa</i> 6493 6497	Hymenoptera: Pamphiliidae <i>Acantholyda erythrocephala</i> USA, New York <i>Isaria farinosa</i> 5548
Malaysia <i>Isaria farinosa</i> 4405 4412 <i>Isaria fumosorosea</i> 4205 4401 4404 4406 4407 4408 4409 4410 4411 4413 4414 4415	<i>Uzbekistan</i> <i>Isaria farinosa</i> 6097 6098 <i>Halyomorpha halys</i> Republic of Georgia <i>Isaria</i> sp. 13759	Hymenoptera: Tenthredinidae <i>Pristiphora erichsonii</i> Canada, British Columbia <i>Isaria farinosa</i> 1851
USA, Florida <i>Isaria fumosorosea</i> 2658	Hemiptera: Pseudococcidae <i>Phenacoccus solani</i> USA, Florida <i>Isaria fumosorosea</i> 2247	Lepidoptera Denmark <i>Isaria farinosa</i> 7118
Hemiptera: Aphididae Colombia <i>Isaria fumosorosea</i> 6789	Hemiptera: Psyllidae Russian Federation <i>Isaria farinosa</i> (?) 7219 <i>Isaria</i> sp. 9517 <i>Heteropsylla incisa</i> Philippines <i>Isaria fumosorosea</i> 2175	Mexico <i>Isaria farinosa</i> 2822
Malaysia <i>Isaria fumosorosea</i> 4400	Hemiptera: Scutelleridae <i>Eurygaster</i> sp. Iran <i>Isaria</i> sp. 10360 10363 10364 10365 10366 10367 10368 10369 10370 10371 10372 10373 10374 10375 10376 10377 10379 10380 10381 10382 10383 10384 10385 11631 11632 11633 11634 11635 11636	PR China <i>Isaria cateniannulata</i> 6240 9601 11722 <i>Isaria cicadae</i> 11726 <i>Isaria farinosa</i> 6245 11721 <i>Isaria tenuipes</i> 6249 11705 11706 11707
USA, Florida <i>Isaria fumosorosea</i> 3682	Kazakhstan <i>Isaria farinosa</i> 6481 6490 6495	Russian Federation <i>Isaria farinosa</i> 7714 7720 7722 7723 7724 7725 7726 7730 7731 7733 7736 7737 <i>Isaria fumosorosea</i> 7743 9520 <i>Isaria tenuipes</i> 7790 9531 9532
<i>Diuraphis noxia</i>	Republic of Kazakhstan <i>Isaria</i> sp. 10378	Ukraine <i>Isaria farinosa</i> 7734 <i>Isaria tenuipes</i> 9534
France <i>Isaria fumosorosea</i> 4383	Russian Federation <i>Isaria farinosa</i> 6012 6017 6020 6044	USA, New York <i>Isaria farinosa</i> 3152
Laboratory manipulation <i>Isaria fumosorosea</i> 3824 4459 4460 4461	Turkey <i>Isaria farinosa</i> 5675 5676 5679	USA, Oregon <i>Isaria farinosa</i> 5996
Lesotho <i>Isaria farinosa</i> 6609		
South Africa <i>Isaria farinosa</i> 6222 6983		
USA, New York <i>Isaria fumosorosea</i> 4698 4699 4700 4701 4702 4703 4704 4705 4706 4707 4708 4709 4710 4711		
<i>Myzus persicae</i> Location not specified <i>Isaria fumosorosea</i> 3458		
Hemiptera: Cicadidae <i>Mogannia hebes</i> Republic of China <i>Isaria sinclairii</i> 6925		

Lepidoptera

Lepidoptera: Sesiidae

Fungus by Host and Location

USA, Vermont
Isaria farinosa 11829
USA, New York
Isaria tenuipes 5134 5135
Isaria farinosa 4090
USA, Texas
Isaria fumosorosea 5251 5252

Lepidoptera: Arctiidae

Hyphantria cunea
Italy
Isaria fumosorosea 1568 1569 1577
1578 1579
Republic of Georgia
Isaria fumosorosea 10224
Turkey
Isaria cateniannulata 12167
Isaria cateniannulata(?) 12166
Isaria fumosorosea 12172 12173
12174 12175 12177
Pyrrharctia isabella
USA, New York
Isaria farinosa 3017

Lepidoptera: Bombycidae

Bombyx mori
Japan
Isaria fumosorosea 989 1005
PR China
Isaria fumosorosea 720
Isaria javanica 704

Lepidoptera: Cossidae

Prionoxystus robiniae
USA, Kentucky
Isaria farinosa 2269

Lepidoptera: Geometridae

Alosophila pometaria
Canada, Alberta
Isaria farinosa 5368
Lambdina athasaria
USA, Vermont
Isaria farinosa 3537 3538

Lepidoptera: Lasiocampidae

Russian Federation
Isaria farinosa 9515
Malacosoma americanum
USA, Massachusetts
Isaria farinosa 3

Lepidoptera: Lymantriidae

Leucoma salicis
Location not specified
Isaria farinosa 38
Lymantria dispar
France
Isaria fumosorosea 6206
USA, New York
Isaria farinosa 648 697 2564
USA, Maryland
Isaria farinosa 2835
USA, West Virginia
Isaria farinosa 3517 3518 3519 3520
3521 3522
USA, Pennsylvania
Isaria farinosa 3523

USA, Maryland
Isaria farinosa 3524
USA, West Virginia
Isaria farinosa 3525
USA, Maryland
Isaria farinosa 3526
USA, West Virginia
Isaria farinosa 3533
USA, New York
Isaria farinosa 3595 3596 3597 3598
3599
USA, Virginia
Isaria farinosa 3664 3665
USA, Maryland
Isaria farinosa 3666 2131 3492 3498
3507
USA, Oregon
Isaria farinosa 2057
USA, Pennsylvania
Isaria farinosa 20 3221 3491 3499
3500 3506
USA, Virginia
Isaria farinosa 3490 3493 3494 3496
3497 3501 3502 3503 3504 3505
3508
USA, West Virginia
Isaria farinosa 3495
Lymantria dissoluta
PR China
Isaria cateniannulata 6242

Lepidoptera: Noctuidae

Brazil
Isaria tenuipes 4096
Brazil, Mato Grosso
Isaria tenuipes 3939
Brazil, Paraná
Isaria tenuipes 3938
Agrotis segetum
Denmark
Isaria farinosa 4010
Lycophotia sp.
France
Isaria fumosorosea 3987
Mamestra brassicae
France
Isaria fumosorosea 3986 3989
Isaria javanica 3981
Mocis latipes
Mexico
Isaria tenuipes 6889
Rivula atimeta
Philippines
Isaria farinosa 2344
Scotia ipsilon
France
Isaria fumosorosea 3985
Scotia segetum
France
Isaria fumosorosea 3984
Spodoptera sp.
Location not specified
Isaria farinosa 2546
Philippines
Isaria fumosorosea 2734

Spodoptera frugiperda
Mexico
Isaria tenuipes 2488 2489 2490 2491

Lepidoptera: Notodontidae

Quadicalcarifera punctatella
Japan
Isaria farinosa 1042

Lepidoptera: Nymphalidae

United Kingdom
Isaria farinosa 981
Agraulis vanillae
Colombia
Isaria tenuipes 6788
Chlosyne lacinia saundersii
Brazil, Paraná
Isaria farinosa 1065

Lepidoptera: Pieridae

Pieris brassicae
France
Isaria fumosorosea 3982

Lepidoptera: Plutellidae

Plutella xylostella
Australia
Isaria fumosorosea 6799 6800
Philippines
Isaria fumosorosea 2749
Romania
Isaria fumosorosea 5874

Lepidoptera: Pyralidae

USA, Oregon
Isaria farinosa 13274
Isaria fumosorosea 13273
Chilo suppressalis
France
Isaria fumosorosea 3988
Diaphania hyalinata
Mexico
Isaria fumosorosea 3302
Galleria mellonella
Isaria fumosorosea 6893
Norway
Isaria farinosa 7574 7575 7576
11656
Isaria fumosorosea 11657 11658
11659
Switzerland
Isaria farinosa 7531
Turkey
Isaria fumosorosea 8333 8337 8345
8348 8448
USA, Alaska
Isaria farinosa 7961 7962
USA, North Carolina
Isaria farinosa 8770
USA, Maine
Isaria fumosorosea 9380
Ostrinia nubilalis
France
Isaria fumosorosea 3983

Lepidoptera: Sesiidae

Conopia myopaeformis
Italy
Isaria farinosa 1108

Fungus by Host and Location

Lepidoptera: Tortricidae

Thysanoptera: Thripidae

Lepidoptera: Tortricidae

Cydia pomonella

Bulgaria

Isaria farinosa 6207

Isaria fumosorosea 6192

France

Isaria farinosa 5883 5884 5885 6200

6202

Isaria fumosorosea 6203 6204

United Kingdom

Isaria farinosa 975

Laspeyresia medicaginis

France

Isaria farinosa 1225

Lobesia botrana

Italy

Isaria farinosa 1111

Orthoptera: Acrididae

Melanoplus bivittatus

USA, North Dakota

Isaria sp. 12433

Melanoplus femurrubrum

USA, Montana

Isaria sp. 12409

Orthoptera: Acridoidea

PR China

Isaria cateniobliqua 6283

Orthoptera: Gryllidae

Indonesia, Sulawesi Selatan, Celebes

Isaria guaensis 2152

Thysanoptera: Thripidae

USA, Vermont

Isaria farinosa 11822

USA, New Hampshire

Isaria farinosa 11823

Taeniothrips inconsequens

USA, Vermont

Isaria farinosa 3564 10155 10157

10158 10159 10161 10231

USA, New York

Isaria sp. 10162

USA, Vermont

Isaria sp. 11629

Antarctica

Isaria farinosa 2975

Argentina

Buenos Aires

Isaria farinosa 2971 2973 7777

Isaria fumosorosea 6916 7050 7051

7204 7205 8717 8718 8719 8720 8721

8723 8724 8725 8726 8727 8728 8729

8730 8928

Isaria javanica 7477

Australia

New South Wales

Isaria fumosorosea 8892

Queensland

Isaria fumosorosea 6799 6800

Tasmania

Isaria fumosorosea 8840

Belarus

Isaria farinosa 9514

Isaria sp. 9519

Brazil

Isaria amoenerosea 4097

Isaria fumosorosea 3852 3857

Isaria tenuipes 4096

Alagoas

Isaria farinosa 1957

Amazonas

Isaria fumosorosea 2956

Distrito Federal

Isaria fumosorosea 3480

Goiás

Isaria amoenerosea 741 744 2220 2958

2959 2960

Isaria fumosorosea 722 2216 2217

2219 2221

Mato Grosso

Isaria tenuipes 3939

Paraná

Isaria farinosa 1065

Isaria fumosorosea 5154 5155 5156

5157 5158 5159

Isaria tenuipes 3938

São Paulo

Isaria fumosorosea 6434 6435

Bulgaria

Isaria farinosa 6207

Isaria fumosorosea 6192

Canada

Alberta

Isaria farinosa 5368

British Columbia

Isaria cicadae(?) 7973

Isaria farinosa 1851 8016 8017 8018

8019 8020 8021

Chile

Isaria farinosa 13367

Los Lagos

Isaria farinosa 13362 13365

Colombia

Caldas

Isaria fumosorosea 6789

Isaria tenuipes 6788

Nariño

Isaria farinosa 799

Costa Rica

Isaria fumosorosea 3429

Denmark

Isaria farinosa 4043 4044

Jutland

Isaria farinosa 5858 7118

Zealand

Isaria farinosa 4010 4039 4045

Isaria fumosorosea 5855 5860 7069

Zeeland

Isaria farinosa 4029 4040

Ecuador

Isaria farinosa 2556

Finland

Isaria fumosorosea 5627

France

Isaria fumosorosea 1644 1645 6206

Béarn

Isaria fumosorosea 3983

de Gourgas

Isaria farinosa 5080

Gard

Isaria farinosa 5883 5884 5885 6200

6202

Isaria fumosorosea 6203 6204

Hérault

Isaria farinosa 5073 5074 5075

Ile de France

Isaria fumosorosea 3982 3984 3985

3986 3988 3989

Isaria javanica 3981

La Valette

Isaria fumosorosea 4383

Morbihan

Isaria fumosorosea 1867 1868

Paris

Isaria fumosorosea 887

Provence

Isaria fumosorosea 3987

Seine-Maritime

Isaria fumosorosea 1626

Vauchuse

Isaria farinosa 1507 1508

Isaria fumosorosea 1506

Vienne

Isaria farinosa 1225

Yvelines

Isaria fumosorosea 1646

Hong Kong

Isaria fumosorosea 6797 6798

Hungary

Budapest

Isaria fumosorosea 6610

India

Isaria fumosorosea 3699 3700 3843

4490 4491 4492 4493 4494 4495 4496

4497

Isaria sp. 55

Indonesia

Jawa Barat, Java

Isaria fumosorosea 2425 2429

Sulawesi Selatan, Celebes

Isaria guaensis 2152

Iran

Isaria sp. 10360 10363 10364 10365

10366 10367 10368 10369 10370

10371 10372 10373 10374 10375

10376 10377 10379 10380 10381

10382 10383 10384 10385 11631

11632 11633 11634 11635 11636

Esfahan

Isaria farinosa 6288

Italy

Emilia-Romagna

Isaria farinosa 1108 1111

Isaria fumosorosea 1568 1569 1577

1578 1579

Umbria

Isaria fumosorosea 1530 1532

Ivory Coast

Isaria fumosorosea 6730

Japan

Iwate Prefecture

Isaria farinosa 1042

Oita Prefecture

Isaria andoi 1684

Isaria flavovirescens 1686

Saitama Prefecture

Isaria fumosorosea 989

Tokyo Prefecture

Isaria fumosorosea 1005

Kazakhstan

Isaria farinosa 6481 6488 6489 6490

6491 6493 6495 6496 6497

Kyrgyz Republic

Isaria farinosa 6482

Laboratory manipulation

Isaria fumosorosea 3824 4459 4460

4461 5540

Lesotho

Isaria farinosa 6609

Malaysia

Isaria farinosa 4405 4412

Isaria fumosorosea 4205 4400 4401

4404 4406 4407 4408 4409 4410 4411

4413 4414 4415

Geographical Origin

Mexico

Baja California
Isaria fumosorosea 3302
Chiapas
Isaria fumosorosea 7284
Coahuila
Isaria farinosa 13507
Colima
Isaria fumosorosea 3313 3800
Isaria javanica 3303
Durango
Isaria farinosa 2822
Tabasco
Isaria tenuipes 6889
Tamaulipas
Isaria tenuipes 2488 2489 2490 2491

Nepal

Isaria farinosa 7243
Isaria fumosorosea 4482 4483 4484
4485 4486 5297

Norway

Sogn og Fjordane
Isaria farinosa 7574 7575 7576 11656
Isaria fumosorosea 11657 11658 11659

Pakistan

Isaria farinosa 5081 5082 5083 5084
Isaria fumosorosea 3848 3851 3878
4498 4499 4500 4501 4502 4503 5085
5086 5087 5088 5089 5090 5107 5113
5115 5116 5117 5118 5119 5121 5122
5272 5298 5475 5476

Philippines

Benguet
Isaria farinosa 2724 2726 3191
Isaria fumosorosea 2733 2734 2744
2745 2749 3179 3188
Leyte
Isaria fumosorosea 2175
Manila
Isaria farinosa 2344 2355 2375 2376
2379
Isaria fumosorosea 2198
Pangasinan
Isaria amoenerosea 3192
Isaria fumosorosea 2804
Quezon
Isaria farinosa 2807 3183 3184 3185
3186
Isaria fumosorosea 3177

Poland

Isaria farinosa 475 476 1348 1349
1354 1355 1358
Isaria fumosorosea 240

Portugal

Azores
Isaria fumosorosea 2679

PR China

Anhui
Isaria cateniannulata 6240 6241 6242
6243
Isaria cateniobliqua 6244 6283
Isaria farinosa 6246
Isaria tenuipes 6249
Guizhou Province
Isaria cateniannulata 9601
Isaria cicadae 11726
Isaria farinosa 11710
Isaria fumosorosea 9602
Isaria tenuipes 11705 11706 11707
Sichuan Province
Isaria cateniannulata 11722
Isaria farinosa 6028 6029 6030 6031
6032 6033 6034 6036 6037 6038 6048
6049
Yunnan
Isaria farinosa 6245
Yunnan Province
Isaria farinosa 11721
Zhijiang
Isaria fumosorosea 720
Isaria javanica 704

Republic of China

Taiwan
Isaria farinosa 8917
Isaria sinclairii 6925

Republic of Georgia

Isaria fumosorosea 10224
Isaria sp. 13759
Autonomous Republic of Adjara
Isaria sp. 13662 13663 13664 13665
13667 13668 13669 13670 13671
13672 13673 13674 13675 13676
13677 13679 13680 13681 13695
13698 13699 13700

Republic of Kazakhstan

Isaria sp. 10378

Republic of Korea

Gyeonggi Province
Isaria farinosa 5699 7249
Kangwon-do
Isaria amoenerosea 4849
Isaria farinosa 7245 7262 7263 7276
Isaria fumosorosea 5694
Isaria tenuipes 5700

Romania

Isaria fumosorosea 5874

Russian Federation

Karachayevo-Cherkessiya Republ
Isaria farinosa 7723 9511
Isaria tenuipes 7735 9533
Krasnodarsky Krai
Isaria farinosa 7733 9512
Isaria fumosorosea 9520
Isaria tenuipes 7790 9531 9532
Moscow Region
Isaria coleopterorum 9509
Isaria farinosa 9515

Primorsky Krai

Isaria farinosa 7714 7715 7717 7718
7720 7722 7724 7725 7726 7727 7729
7730 7731 7732 7736 7737 7739
Isaria farinosa(?) 7219
Isaria fumosorosea 7716 7740 7743
Isaria sp. 9517 9518

Rostov

Isaria farinosa 6012 6017 6020 6044

Sakhalin Region

Isaria farinosa 7719 7728 9510

South Africa

Cape Province

Isaria farinosa 6607 6611

Free State

Isaria farinosa 6222 6983

Switzerland

Bern

Isaria farinosa 7531

Turkey

Isaria cateniannulata 12167
Isaria cateniannulata(?) 12166
Isaria fumosorosea 12172 12173 12174
12175 12177

Artvin

Isaria fumosorosea 8348

Gaziantep

Isaria farinosa 5675 5754 5834

Giresun

Isaria fumosorosea 8345

Kahraman Maras

Isaria farinosa 5676 5679

Rize

Isaria fumosorosea 8337 8448

Trabzon

Isaria farinosa 9269 9270 9275 9276
9277 9278
Isaria fumosorosea 8333

Ukraine

Isaria farinosa 9513
Isaria tenuipes 9534
Kherson Oblast
Isaria farinosa 7734 9516
Isaria fumosorosea 9521
Isaria sp. 9508

United Kingdom

Isaria fumosorosea 6562 13225
England
Isaria farinosa 975 981

USA

Alaska

Isaria farinosa 7961 7962

Arizona

Isaria fumosorosea 5327 5328

California

Isaria farinosa 1939 3658 3659 3661
Isaria fumosorosea 3660 3662 3663
4480 4481 4489

Isaria sp. 11628

Connecticut

Isaria farinosa 5826 5827

Florida	<i>Isaria javanica</i> 3573 3577 3776 3778
<i>Isaria farinosa</i> 2954	5259 5321 7119
<i>Isaria fumosorosea</i> 2247 2658 3076	<i>Isaria poprawskii</i> 7028
3083 3322 3682 4479 7347	Vermont
<i>Isaria javanica</i> 322	<i>Isaria coleopterorum</i> 10163
Hawaii	<i>Isaria farinosa</i> 3537 3538 3564 5191
<i>Isaria farinosa</i> 7094	5194 9292 9293 9574 9575 9576 9577
<i>Isaria fumosorosea</i> 3889	9578 9579 9580 10155 10156 10157
Kentucky	10158 10159 10160 10161 10231
<i>Isaria farinosa</i> 2269	11822 11824 11825 11826 11827
Maine	11828 11829 11830 11831 11832
<i>Isaria fumosorosea</i> 9380	11833 11834
Maryland	<i>Isaria farinosa</i> (?) 9567 9568 9569
<i>Isaria farinosa</i> 2131 2835 3492 3498	9570 9571 9572 9573 9581
3507 3524 3526 3666	<i>Isaria fumosorosea</i> 9294 9582 9583
Massachusetts	9584 9585 9586
<i>Isaria farinosa</i> 3 5178 5774 5775 5776	<i>Isaria</i> sp. 11629 11753
5784 5788 5790 5792 5797 5799 5800	Virginia
5801 5802 5830	<i>Isaria farinosa</i> 3490 3493 3494 3496
<i>Isaria</i> sp. 11630	3497 3501 3502 3503 3504 3505 3508
Michigan	3664 3665 5760 5761
<i>Isaria farinosa</i> 9944 9945	Washington
<i>Isaria farinosa</i> (?) 8806	<i>Isaria farinosa</i> 8022
<i>Isaria fumosorosea</i> 8142	West Virginia
Montana	<i>Isaria farinosa</i> 3495 3517 3518 3519
<i>Isaria</i> sp. 12409 12941	3520 3521 3522 3525 3533 3771
Nebraska	Uzbekistan
<i>Isaria</i> sp. 12190	<i>Isaria farinosa</i> 6097 6098
New Hampshire	
<i>Isaria farinosa</i> 11823	
New York	
<i>Isaria farinosa</i> 648 697 2564 3017	
3152 3461 3595 3596 3597 3598 3599	
4090 5548 8411 10165 11835	
<i>Isaria fumosorosea</i> 4698 4699 4700	
4701 4702 4703 4704 4705 4706 4707	
4708 4709 4710 4711	
<i>Isaria</i> sp. 10162	
<i>Isaria tenuipes</i> 5134 5135	
North Carolina	
<i>Isaria farinosa</i> 8770	
North Dakota	
<i>Isaria</i> sp. 12433	
Oregon	
<i>Isaria farinosa</i> 2057 2431 2937 5996	
13274	
<i>Isaria fumosorosea</i> 13273	
Pennsylvania	
<i>Isaria farinosa</i> 20 3221 3491 3499	
3500 3506 3523	
Tennessee	
<i>Isaria cateniannulata</i> 8310	
Texas	
<i>Isaria farinosa</i> 3572 3574 3575 3576	
3578 3579 3580 3582 3583 3584 3585	
3586 3587 3588 3589 3591 3592 3593	
5306	
<i>Isaria fumosorosea</i> 3581 3590 3594	
4487 4488 5251 5252 5253 5254 5255	
5256 5257 5258 5260 5261 5262 5263	
5264 5265 5266 5267 5268 5269 5270	
5271 5307 5308 5309 5310 5311 5312	
5313 5314 5315 5316 5317 5318 5319	
5320 5322 5323 5324 5325 5326 5330	
5331 5462 5463 5464	

Agudelo-Silva, Fernando

10S87 *Isaria farinosa* 2431

Ansari, Minshad Ali

BNL301 *Isaria fumosorosea* 13225

Aoki, Joji

Cordy. 1 *Isaria farinosa* 1042
Paec. 2 *Isaria fumosorosea* 1005
Paec. 3 *Isaria fumosorosea* 989

APHIS

WFP-362 *Isaria fumosorosea* 5272
WFP-362 *Isaria fumosorosea* 5298
WFP-363 *Isaria fumosorosea* 5297

ARSEF

2198 *Isaria fumosorosea* 4699
2344 *Isaria farinosa* 2375
2355 *Isaria farinosa* 2379
2375 (never frozen) *Isaria farinosa* 2344
2379 (never frozen) *Isaria farinosa* 2355
2749 *Isaria fumosorosea* 4700
3572 *Isaria fumosorosea* 5316
3572 *Isaria fumosorosea* 5317
3572 *Isaria fumosorosea* 5318
3572 *Isaria fumosorosea* 5319
3572 *Isaria fumosorosea* 5327
3572 *Isaria fumosorosea* 5328
3572 *Isaria fumosorosea* 5329
3699 *Isaria fumosorosea* 4459
3699 *Isaria fumosorosea* 4460
3699 *Isaria fumosorosea* 4461
4460 *Isaria fumosorosea* 4702
4480 *Isaria fumosorosea* 4704
4481 *Isaria fumosorosea* 4705
4489 *Isaria fumosorosea* 4708
4491 *Isaria fumosorosea* 4709
4492 *Isaria fumosorosea* 4710
4493 *Isaria fumosorosea* 4711

ATCC

24318 *Isaria fumosorosea* 3824
24319 *Isaria farinosa* 3
24400 *Isaria sinclairii* 6925

Balazy, Stanislaw

1584c *Isaria farinosa* 1348
1584e *Isaria farinosa* 1349
1594a *Isaria farinosa* 1354
1594b *Isaria farinosa* 1355
1595e *Isaria farinosa* 1358

Bauer, Leah S.

Legg Park 1 *Isaria farinosa* 9944
Legg Park 2 *Isaria farinosa* 9945

Brownbridge, Michael

HL-1.1 *Isaria farinosa* 3537
HL-2.3 *Isaria farinosa* 3538
L3741 *Isaria* sp. 11629
R-38 *Isaria farinosa* 3564

Burjanadze, Medea

MB-001 *Isaria* sp. 13662
MB-002 *Isaria* sp. 13663
MB-003 *Isaria* sp. 13664
MB-004 *Isaria* sp. 13665
MB-006 *Isaria* sp. 13667
MB-007 *Isaria* sp. 13668
MB-008 *Isaria* sp. 13669
MB-009 *Isaria* sp. 13670
MB-010 *Isaria* sp. 13671
MB-011 *Isaria* sp. 13672
MB-012 *Isaria* sp. 13673
MB-013 *Isaria* sp. 13674
MB-014 *Isaria* sp. 13675
MB-015 *Isaria* sp. 13676
MB-016 *Isaria* sp. 13677
MB-018 *Isaria* sp. 13679
MB-019 *Isaria* sp. 13680
MB-020 *Isaria* sp. 13681
MB-035 *Isaria* sp. 13695
MB-039 *Isaria* sp. 13699
MB-03B *Isaria* sp. 13698
MB-040 *Isaria* sp. 13700
MB-103 *Isaria* sp. 13759

Castrillo, Louela A.

A2s8 *Isaria farinosa*(?) 8806

CBS

111113 *Isaria farinosa* 7118
118466 *Isaria andoi* 1684

CENARGEN

CG 123 *Isaria fumosorosea* 2956
CG 162 *Isaria amoenerosea* 2958
CG 163 *Isaria amoenerosea* 2959
CG 164 *Isaria amoenerosea* 2960
CG 35 *Isaria fumosorosea* 3480

CEP

(S) 004 *Isaria farinosa* 7777
051 *Isaria fumosorosea* 7204
055 *Isaria fumosorosea* 7205
107 *Isaria javanica* 7477
302 *Isaria fumosorosea* 8716
303 *Isaria fumosorosea* 8717
304 *Isaria fumosorosea* 8718
305 *Isaria fumosorosea* 8719
306 *Isaria fumosorosea* 8720
307 *Isaria fumosorosea* 8721
308 *Isaria fumosorosea* 8723
309 *Isaria fumosorosea* 8724
310 *Isaria fumosorosea* 8725
311 *Isaria fumosorosea* 8726
312 *Isaria fumosorosea* 8727
313 *Isaria fumosorosea* 8728
314 *Isaria fumosorosea* 8729
315 *Isaria fumosorosea* 8730
316 *Isaria fumosorosea* 8928

Chandler, David

HRI 402.93 *Isaria fumosorosea* 6562

CNPAF

82-1-15-05 *Isaria fumosorosea* 722
82-1-15-06 *Isaria amoenerosea* 741
82-2-15-05 *Isaria amoenerosea* 744
85-7-22-1 *Isaria farinosa* 1957
86-06-02-2 *Isaria fumosorosea* 2217
86-06-05-1 *Isaria fumosorosea* 2216
86-06-05-1 *Isaria fumosorosea* 2221
86-06-05-3 *Isaria fumosorosea* 2219
86-06-05-4 *Isaria amoenerosea* 2220

CNPS

26 *Isaria farinosa* 1065

Cortez Madrigal, Hipolito

Pm *Isaria tenuipes* 6889

CP

18 *Isaria fumosorosea* 722
182 *Isaria farinosa* 1957
19 *Isaria amoenerosea* 741
212 *Isaria fumosorosea* 2216
213 *Isaria fumosorosea* 2217
215 *Isaria fumosorosea* 2219
216 *Isaria amoenerosea* 2220
217 *Isaria fumosorosea* 2221
26 *Isaria amoenerosea* 744

CSIRO

FI-0935 *Isaria farinosa* 8599
FI-1275 *Isaria fumosorosea* 8840
FI-1296 *Isaria fumosorosea* 8892

Demirbag, Zihni

KTU-1 *Isaria fumosorosea* 8333
KTU-13 *Isaria fumosorosea* 8345
KTU-16 *Isaria fumosorosea* 8348
KTU-42 *Isaria fumosorosea* 8448
KTU-5 *Isaria fumosorosea* 8337

Deseö, Katlin V.

101 *Isaria fumosorosea* 1568
104 *Isaria fumosorosea* 1577
107 *Isaria fumosorosea* 1569
108 *Isaria fumosorosea* 1578
110 *Isaria fumosorosea* 1579
27 *Isaria farinosa* 1108
32A *Isaria farinosa* 1111

EcoScience Corporation

32-51 *Isaria farinosa* 2937

ERL

143 *Isaria* sp. 11630
148 *Isaria farinosa* 5776
1592 *Isaria farinosa* 9292
1593 *Isaria farinosa* 9293
1594 *Isaria fumosorosea* 9294
1724 *Isaria farinosa*(?) 9567
1725 *Isaria farinosa*(?) 9568
1726 *Isaria farinosa*(?) 9569
1727 *Isaria farinosa*(?) 9570
1728 *Isaria farinosa*(?) 9571
1729 *Isaria farinosa*(?) 9572
1730 *Isaria farinosa*(?) 9573
1731 *Isaria farinosa* 9574
1732 *Isaria farinosa* 9575
1733 *Isaria farinosa* 9576
1734 *Isaria farinosa* 9577

1735 *Isaria farinosa* 9578
1736 *Isaria farinosa* 9579
1737 *Isaria farinosa* 9580
1738 *Isaria farinosa*(?) 9581
1739 *Isaria fumosorosea* 9582
1740 *Isaria fumosorosea* 9583
1741 *Isaria fumosorosea* 9584
1742 *Isaria fumosorosea* 9585
1743 *Isaria fumosorosea* 9586
1815 *Isaria farinosa* 10155
1816 *Isaria farinosa* 10156
1817 *Isaria farinosa* 10157
1818 *Isaria farinosa* 10158
1819 *Isaria farinosa* 10159
1820 *Isaria farinosa* 10160
1821 *Isaria farinosa* 10161
1822 *Isaria* sp. 10162
1823 *Isaria coleopterorum* 10163
1825 *Isaria farinosa* 10165
1897 *Isaria farinosa* 10231
2008 *Isaria* sp. 11753
2019 *Isaria farinosa* 11822
2035 *Isaria farinosa* 11823
2036 *Isaria farinosa* 11824
2037 *Isaria farinosa* 11825
2038 *Isaria farinosa* 11826
2039 *Isaria farinosa* 11827
2040 *Isaria farinosa* 11828
2041 *Isaria farinosa* 11829
2042 *Isaria farinosa* 11830
2043 *Isaria farinosa* 11831
2044 *Isaria farinosa* 11832
2045 *Isaria farinosa* 11833
2046 *Isaria farinosa* 11834
2047 *Isaria farinosa* 11835
253 *Isaria farinosa* 8917
390 *Isaria* sp. 10363
391 *Isaria* sp. 10364
392 *Isaria* sp. 10365
393 *Isaria* sp. 10366
394 *Isaria* sp. 10367
395 *Isaria* sp. 10368
396 *Isaria* sp. 10369
397 *Isaria* sp. 10370
398 *Isaria* sp. 10371
399 *Isaria* sp. 10372
400 *Isaria* sp. 10373
401 *Isaria* sp. 10374
402 *Isaria* sp. 10375
403 *Isaria* sp. 10376
404 *Isaria* sp. 10377
48 *Isaria* sp. 11629
527 *Isaria* sp. 10378
540 *Isaria* sp. 10379
546 *Isaria* sp. 11631
548 *Isaria* sp. 10380
549 *Isaria* sp. 10381
554 *Isaria* sp. 10382
555 *Isaria* sp. 11632
556 *Isaria* sp. 10383
558 *Isaria* sp. 10360
559 *Isaria* sp. 11633
560 *Isaria* sp. 11634
561 *Isaria* sp. 10384
564 *Isaria* sp. 11635
565 *Isaria* sp. 11636

571 *Isaria* sp. 10385
606 *Isaria* sp. 11628

Erper, Ismail

TR-55-4 *Isaria cateniannulata*(?) 12166
TR-55-5 *Isaria cateniannulata* 12167
TR-78-2 *Isaria fumosorosea* 12172
TR-78-3 *Isaria fumosorosea* 12173
TR-78-4 *Isaria fumosorosea* 12174
TR-78-5 *Isaria fumosorosea* 12175
TR-78-7 *Isaria fumosorosea* 12177

Farices, Angela

34 *Isaria fumosorosea* 4383

Farrokhi, Shahram

PPDRI 3 *Isaria farinosa* 6288

Forschler, Brian T.

RF-1 *Isaria farinosa* 2269

FPMI

759 *Isaria farinosa* 648
760 *Isaria farinosa* 697
961 *Isaria fumosorosea* 3824

GCRI

112-82 *Isaria farinosa* 975
52-81 *Isaria farinosa* 981

Gouli, Svetlana

GA-101 *Isaria farinosa* 5191
GA-92 *Isaria farinosa* 5194
GP-65 *Isaria farinosa* 5178
HWA2 *Isaria* sp. 11630
Thr-08-P1 *Isaria farinosa* 9292
THR-11-25 *Isaria farinosa* 11824
THR-11-27 *Isaria farinosa* 11826
THR-11-29 *Isaria farinosa* 11828
THR-11-31 *Isaria farinosa* 11830
THR-11-33 *Isaria farinosa* 11832
THR-11-35 *Isaria farinosa* 11834
Thr.-08-P/1 *Isaria farinosa*(?) 9567
Thr.-08-P/11 *Isaria farinosa* 9577
Thr.-08-P/13 *Isaria farinosa* 9579
Thr.-08-P/15 *Isaria farinosa*(?) 9581
Thr.-08-P/17 *Isaria fumosorosea* 9583
Thr.-08-P/19 *Isaria fumosorosea* 9585
Thr.-08-P/3 *Isaria farinosa*(?) 9569
Thr.-08-P/5 *Isaria farinosa*(?) 9571
Thr.-08-P/7 *Isaria farinosa*(?) 9573
Thr.-08-P/9 *Isaria farinosa* 9575
Thr.-10-105 *Isaria farinosa* 10231
Thr.-10-18 *Isaria farinosa* 10156
Thr.-10-20 *Isaria farinosa* 10158
Thr.-10-22 *Isaria farinosa* 10160
Thr.-10-24 *Isaria* sp. 10162

Gouli, Vladimir

CA-701 *Isaria* sp. 11628
SPT-R-160 *Isaria farinosa* 6012
SPT-R-172 *Isaria farinosa* 6044
SPT-R-175 *Isaria farinosa* 6017
SPT-R-185(b) *Isaria farinosa* 6020
Thr-08-P2 *Isaria farinosa* 9293
THR-11-11 *Isaria farinosa* 11822
THR-11-24 *Isaria farinosa* 11823
THR-11-26 *Isaria farinosa* 11825
THR-11-28 *Isaria farinosa* 11827
THR-11-30 *Isaria farinosa* 11829
THR-11-32 *Isaria farinosa* 11831
THR-11-34 *Isaria farinosa* 11833
THR-11-36 *Isaria farinosa* 11835
Thr.-08-P/10 *Isaria farinosa* 9576
Thr.-08-P/12 *Isaria farinosa* 9578
Thr.-08-P/14 *Isaria farinosa* 9580
Thr.-08-P/16 *Isaria fumosorosea* 9582
Thr.-08-P/18 *Isaria fumosorosea* 9584
Thr.-08-P/2 *Isaria farinosa*(?) 9568
Thr.-08-P/20 *Isaria fumosorosea* 9586
Thr.-08-P/4 *Isaria farinosa*(?) 9570
Thr.-08-P/6 *Isaria farinosa*(?) 9572
Thr.-08-P/8 *Isaria farinosa* 9574
Thr.-10-17 *Isaria farinosa* 10155
Thr.-10-19 *Isaria farinosa* 10157
Thr.-10-21 *Isaria farinosa* 10159
Thr.-10-23 *Isaria farinosa* 10161
Thr.-10-25 *Isaria coleopterorum* 10163
Thr.-10-27 *Isaria farinosa* 10165

Gouli, Vladimir & Svetlana

Thr-08-P3 *Isaria fumosorosea* 9294

Gutierrez Samperio, Jorge

18 *Isaria fumosorosea* 3302
19 *Isaria javanica* 3303
29 *Isaria fumosorosea* 3313

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02 NY 5-6-1 *Isaria farinosa* 8411
1 *Isaria farinosa* 3664
102a *Isaria farinosa* 3520
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140a *Isaria farinosa* 3522
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146 *Isaria farinosa* 3596
149 *Isaria farinosa* 3597
166a *Isaria farinosa* 3524
18b *Isaria farinosa* 3493
1b *Isaria farinosa* 3490
203b *Isaria farinosa* 3525
216b *Isaria farinosa* 3526
21a *Isaria farinosa* 3494
23 *Isaria farinosa* 3665
26a *Isaria farinosa* 3495
27 *Isaria farinosa* 3666
298b *Isaria farinosa* 3533
32c *Isaria farinosa* 3496
35 *Isaria farinosa* 3595
36a *Isaria farinosa* 3497
370 *Isaria farinosa* 3598
37c *Isaria farinosa* 3498
438 *Isaria farinosa* 3599
47b *Isaria farinosa* 3500
49b *Isaria farinosa* 3501

- 4a *Isaria farinosa* 3491
52b *Isaria farinosa* 3502
53a *Isaria farinosa* 3503
54b *Isaria farinosa* 3504
57b *Isaria farinosa* 3505
62a *Isaria farinosa* 3506
64a *Isaria farinosa* 3507
68c *Isaria farinosa* 3508
91a *Isaria farinosa* 3517
94b *Isaria farinosa* 3518
95a *Isaria farinosa* 3519
9b *Isaria farinosa* 3492
Red b (40) *Isaria farinosa* 3499
- Hatting, Justin L.**
2 *Isaria fumosorosea* 6610
Lesotho A *Isaria farinosa* 6609
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- Hodge, Kathie T.**
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- Holdom, David G.**
080287-2 *Isaria fumosorosea* 2425
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- Huang, Bo**
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51 *Isaria fumosorosea* 887
fr039 *Isaria fumosorosea* 3984
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Pfr032 *Isaria fumosorosea* 3985
Pfr035 *Isaria fumosorosea* 3986
Pfr039 *Isaria fumosorosea* 3984
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- Jaronski, Stefan T.**
14WS27 *Isaria* sp. 12941
83D *Isaria* sp. 12433
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- Keller, Siegfried**
955 *Isaria farinosa* 7531
- King, Brian C.**
10 *Isaria farinosa* 8018
11 *Isaria farinosa* 8019
22 *Isaria farinosa* 8020
43 *Isaria farinosa* 8021
47 *Isaria farinosa* 8017
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7 *Isaria farinosa* 8016
75 *Isaria farinosa* 8022
Spec 1 *Isaria farinosa* 8252
- Klingen, Ingeborg**
NCRI 164/02 *Isaria farinosa* 7575
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- Krueger, Steve V.**
549 *Isaria farinosa* 3461
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92136 *Isaria fumosorosea* 4485
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93018 *Isaria javanica* 3981
93019 *Isaria fumosorosea* 3982
93020 *Isaria fumosorosea* 3983
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93022 *Isaria fumosorosea* 3985
93023 *Isaria fumosorosea* 3986
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93025 *Isaria fumosorosea* 3988
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94009 *Isaria fumosorosea* 4383
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95073 *Isaria farinosa* 5083
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- Lestari, Anis S.**
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- Liu, Houping**
MF-233 *Isaria fumosorosea* 8142
- López Lastra, Claudia**
2 *Isaria fumosorosea* 6916
- Majchrowicz, Irena**
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71 *Isaria fumosorosea* 1506
76 *Isaria farinosa* 1508
- McManus, Jennifer**
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EBCL 00051 *Isaria fumosorosea* 6799
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Osborne, Lance S.

PFR-97 *Isaria fumosorosea* 3682
UK-1 *Isaria fumosorosea* 2247

Ostrovskaya, Katherine

51 *Isaria fumosorosea* 3429

Parker, Bruce L.

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HWA 134/2 *Isaria farinosa* 5788
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HWA 175 *Isaria farinosa* 5792
HWA 303 *Isaria farinosa* 5797
HWA 305 *Isaria farinosa* 5799
HWA 306 *Isaria farinosa* 5800
HWA 307 *Isaria farinosa* 5830
HWA 308 *Isaria farinosa* 5801
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SP-475 *Isaria* sp. 10364

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SP-531 *Isaria* sp. 10381
SP-560 *Isaria* sp. 11632
SP-564 *Isaria* sp. 10383
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SP-571 *Isaria* sp. 11634
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SP-587 *Isaria* sp. 10377
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SPT-KZ-418 *Isaria farinosa* 6488
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SPT-KZ-440 *Isaria farinosa* 6496
SPT-KZ-443 *Isaria farinosa* 6497
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Poprawski, Tadeusz J.

0103B *Isaria fumosorosea* 1626
0127A(bis) *Isaria fumosorosea* 1530
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0141A *Isaria fumosorosea* 1644
0141B *Isaria fumosorosea* 1645
0142 *Isaria fumosorosea* 1646
0171 *Isaria fumosorosea* 1867
0172 *Isaria fumosorosea* 1868
10 *Isaria farinosa* 3580
2 *Isaria farinosa* 3572
21 *Isaria fumosorosea* 3590
22 *Isaria farinosa* 3591
23 *Isaria farinosa* 3592
24 *Isaria farinosa* 3593
25 *Isaria fumosorosea* 3594
3 *Isaria javanica* 3573
4 *Isaria farinosa* 3574
40 *Isaria farinosa* 3658
41 *Isaria farinosa* 3659
43 *Isaria fumosorosea* 3660
44 *Isaria farinosa* 3661
45 *Isaria fumosorosea* 3662
48 *Isaria fumosorosea* 3663
5 *Isaria farinosa* 3575
6 *Isaria farinosa* 3576
7 *Isaria javanica* 3577
8 *Isaria farinosa* 3578
9 *Isaria farinosa* 3579

TJP927 *Isaria fumosorosea* 5462
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Posada, Francisco J.

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Rangel, Drauzio Eduardo Naretto

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Reyes, Enrique Reyes Dominguez

PF4 *Isaria fumosorosea* 3800

Riethmacher, Guenter W.

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Roberts, Donald W.

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Rodríguez Sierra, Dora Alba

UJ89002 *Isaria javanica* 5806

Rombach, Michiel C.

130586-3 *Isaria fumosorosea* 2175
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1 *Isaria fumosorosea* 5251
10 *Isaria fumosorosea* 5260
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103 *Isaria fumosorosea* 5313
104 *Isaria fumosorosea* 5314
105 *Isaria fumosorosea* 5315
11 *Isaria fumosorosea* 5261
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119 *Isaria fumosorosea* 5317
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120 *Isaria fumosorosea* 5318
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124 *Isaria fumosorosea* 5320
125 *Isaria javanica* 5321
126 *Isaria fumosorosea* 5322
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20 *Isaria fumosorosea* 5270
21 *Isaria fumosorosea* 5271
28 *Isaria fumosorosea* 5299
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3 *Isaria fumosorosea* 5253
30 *Isaria fumosorosea* 5272
30 *Isaria fumosorosea* 5301
31 *Isaria fumosorosea* 5302
34 *Isaria fumosorosea* 5297
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40 *Isaria fumosorosea* 5303
42 *Isaria fumosorosea* 5304
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Shimazu, Mitsuaki

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Skinner, Margaret

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Soares, George G.

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Sosa-Gómez, Daniel R.

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137 *Isaria farinosa* 4010
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EFCC 2948 *Isaria farinosa* 7263
EFCC 9251 *Isaria farinosa* 7276
KEFC-1170 *Isaria farinosa* 5699
KEFC-1662 *Isaria tenuipes* 5700
KEFC-919 *Isaria fumosorosea* 5694

Tanyeli, Elif

Dm-10 *Isaria farinosa* 9276
Dm-11 *Isaria farinosa* 9277
Dm-12 *Isaria farinosa* 9278
Dm-3 *Isaria farinosa* 9269
Dm-4 *Isaria farinosa* 9270
Dm-9 *Isaria farinosa* 9275

Tatman, Kathy

MD109#3 *Isaria farinosa* 2835

Tavares, Joao B.

BRA-000141 *Isaria fumosorosea* 3852
BRA-000159 *Isaria fumosorosea* 3857

Tigano-Milani, Myrian Silvana

CG-335 *Isaria fumosorosea* 3852
CG-338 *Isaria fumosorosea* 3857

Torres Barragan, Andrea

Ral 6 *Isaria farinosa* 8770

Turlington, Lewis

West Borax 1, colony B *Isaria farinosa*
1939

Underwood, Nancy

ARSEF3682 *Isaria fumosorosea* 3824

Vänninen, Irene

SF86-82 *Isaria fumosorosea* 5627

Vega, Fernando E.

EBCL 97054 *Isaria fumosorosea* 6730
EBCL 98001 *Isaria fumosorosea* 5874
EBCL 98024 *Isaria farinosa* 5883
EBCL 98025 *Isaria farinosa* 5884
EBCL 98026 *Isaria farinosa* 5885
EBCL 98026 *Isaria farinosa* 6200
EBCL 98028 *Isaria farinosa* 6202
EBCL 98039 *Isaria fumosorosea* 6203
EBCL 98040 *Isaria fumosorosea* 6204
EBCL 98042 *Isaria fumosorosea* 6206
EBCL 98052 *Isaria farinosa* 6207
EBCL 99029 *Isaria fumosorosea* 6192
MPM-5 *Isaria fumosorosea* 7284

Wen, Ting-chi

09QL *Isaria cicadae* 11726
09XS-3 *Isaria farinosa* 11721
CC113 *Isaria cateniannulata* 11722
FD-3 *Isaria tenuipes* 11705
FD-4 *Isaria tenuipes* 11706
LG-11-2 *Isaria tenuipes* 11707
LG-11-26 *Isaria farinosa* 11710

Whitney, H. Stuart

R631 *Isaria farinosa* 1851

Wraight, Stephen P.

11 *Isaria fumosorosea* 3581
12 *Isaria farinosa* 3582
13 *Isaria farinosa* 3583
14 *Isaria farinosa* 3584
16 *Isaria farinosa* 3585
17 *Isaria farinosa* 3586
18 *Isaria farinosa* 3587
19 *Isaria farinosa* 3588
20 *Isaria farinosa* 3589
3572-Bt-1 *Isaria fumosorosea* 5327
3572-Bt-10 *Isaria fumosorosea* 5317
3572-Bt-11 *Isaria fumosorosea* 5318
3572-Bt-12 *Isaria fumosorosea* 5319
3572-Bt-2 *Isaria fumosorosea* 5328
3572-Bt-9 *Isaria fumosorosea* 5316
3572-Btx3 *Isaria fumosorosea* 5329
EC-1 *Isaria fumosorosea* 5253
EC-2 *Isaria fumosorosea* 5254
EC-3 *Isaria fumosorosea* 5255
EC-4 *Isaria fumosorosea* 5256
EC-5 *Isaria fumosorosea* 5257
EC-6 *Isaria fumosorosea* 5258
F92-2 *Isaria javanica* 3778
LACEY 921155-BT1 *Isaria fumosorosea*
5299
Lacey 92118-Bt1 *Isaria fumosorosea*
5305

Lacey 92133-Bt1 *Isaria fumosorosea*
5300

Lacey 92135-Bt1 *Isaria fumosorosea*
5304

Lacey Ma21-Bt1 *Isaria fumosorosea*
5303

LEP-1 *Isaria fumosorosea* 5251

LEP-2 *Isaria fumosorosea* 5252

SPW-11 *Isaria javanica* 3776

SPW-15 *Isaria javanica* 5259

SPW-16 *Isaria fumosorosea* 5260

SPW-17 *Isaria fumosorosea* 5261

SPW-18 *Isaria fumosorosea* 5262

SPW-19 *Isaria fumosorosea* 5263

SPW-20 *Isaria fumosorosea* 5264

SPW-21 *Isaria fumosorosea* 5265

SPW-22 *Isaria fumosorosea* 5266

SPW-23 *Isaria fumosorosea* 5267

SPW-24 *Isaria fumosorosea* 5268

SPW-29 *Isaria fumosorosea* 5269

SPW-30 *Isaria fumosorosea* 5270

SPW-31 *Isaria fumosorosea* 5271

SPW-32 *Isaria farinosa* 5306

SPW-34 *Isaria fumosorosea* 5308

SPW-35 *Isaria fumosorosea* 5309

SPW-36 *Isaria fumosorosea* 5310

SPW-37 *Isaria fumosorosea* 5311

SPW-38 *Isaria fumosorosea* 5312

SPW-39 *Isaria fumosorosea* 5313

SPW-40 *Isaria fumosorosea* 5314

SPW-41 *Isaria fumosorosea* 5315

SPW-50 *Isaria fumosorosea* 5320

SPW-51 *Isaria javanica* 5321

SPW-52 *Isaria fumosorosea* 5322

SPW-53 *Isaria fumosorosea* 5323

SPW-54 *Isaria fumosorosea* 5324

SPW-55 *Isaria fumosorosea* 5325

SPW-56 *Isaria fumosorosea* 5326

Wraight, Steve

Lacey 92119-Bt1 *Isaria fumosorosea*
5301

Lacey Ma19-Bt1 *Isaria fumosorosea*
5302

Yoder Bros. Inc

F2-28 *Isaria farinosa* 2954

F2-4 BR *Isaria fumosorosea* 3322

Zhioua, Elyes

T81 *Isaria fumosorosea* 6893

Zou, Xiao

8 *Isaria cateniannulata* 9601

9 *Isaria fumosorosea* 9602

3	Isaria farinosa	2425	Isaria fumosorosea	3502	Isaria farinosa
20	Isaria farinosa	2429	Isaria fumosorosea	3503	Isaria farinosa
38	Isaria farinosa	2431	Isaria farinosa	3504	Isaria farinosa
55	Isaria sp.	2488	Isaria tenuipes	3505	Isaria farinosa
240	Isaria fumosorosea	2489	Isaria tenuipes	3506	Isaria farinosa
294	Isaria farinosa	2490	Isaria tenuipes	3507	Isaria farinosa
322	Isaria javanica	2491	Isaria tenuipes	3508	Isaria farinosa
475	Isaria farinosa	2546	Isaria farinosa	3517	Isaria farinosa
476	Isaria farinosa	2556	Isaria farinosa	3518	Isaria farinosa
648	Isaria farinosa	2564	Isaria farinosa	3519	Isaria farinosa
697	Isaria farinosa	2576	Isaria farinosa	3520	Isaria farinosa
704	Isaria javanica	2577	Isaria farinosa	3521	Isaria farinosa
720	Isaria fumosorosea	2578	Isaria farinosa	3522	Isaria farinosa
722	Isaria fumosorosea	2658	Isaria fumosorosea	3523	Isaria farinosa
741	Isaria amoenerosea	2679	Isaria fumosorosea	3524	Isaria farinosa
744	Isaria amoenerosea	2724	Isaria farinosa	3525	Isaria farinosa
799	Isaria farinosa	2726	Isaria farinosa	3526	Isaria farinosa
887	Isaria fumosorosea	2733	Isaria fumosorosea	3533	Isaria farinosa
975	Isaria farinosa	2734	Isaria fumosorosea	3537	Isaria farinosa
981	Isaria farinosa	2744	Isaria fumosorosea	3538	Isaria farinosa
989	Isaria fumosorosea	2745	Isaria fumosorosea	3564	Isaria farinosa
1005	Isaria fumosorosea	2749	Isaria fumosorosea	3572	Isaria farinosa
1042	Isaria farinosa	2804	Isaria fumosorosea	3573	Isaria javanica
1065	Isaria farinosa	2807	Isaria farinosa	3574	Isaria farinosa
1108	Isaria farinosa	2822	Isaria farinosa	3575	Isaria farinosa
1111	Isaria farinosa	2835	Isaria farinosa	3576	Isaria farinosa
1225	Isaria farinosa	2937	Isaria farinosa	3577	Isaria javanica
1348	Isaria farinosa	2954	Isaria farinosa	3578	Isaria farinosa
1349	Isaria farinosa	2956	Isaria fumosorosea	3579	Isaria farinosa
1354	Isaria farinosa	2958	Isaria amoenerosea	3580	Isaria farinosa
1355	Isaria farinosa	2959	Isaria amoenerosea	3581	Isaria fumosorosea
1358	Isaria farinosa	2960	Isaria amoenerosea	3582	Isaria farinosa
1506	Isaria fumosorosea	2971	Isaria farinosa	3583	Isaria farinosa
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1532	Isaria fumosorosea	3076	Isaria fumosorosea	3587	Isaria farinosa
1568	Isaria fumosorosea	3083	Isaria fumosorosea	3588	Isaria farinosa
1569	Isaria fumosorosea	3152	Isaria farinosa	3589	Isaria farinosa
1577	Isaria fumosorosea	3177	Isaria fumosorosea	3590	Isaria fumosorosea
1578	Isaria fumosorosea	3179	Isaria fumosorosea	3591	Isaria farinosa
1579	Isaria fumosorosea	3183	Isaria farinosa	3592	Isaria farinosa
1626	Isaria fumosorosea	3184	Isaria farinosa	3593	Isaria farinosa
1644	Isaria fumosorosea	3185	Isaria farinosa	3594	Isaria fumosorosea
1645	Isaria fumosorosea	3186	Isaria farinosa	3595	Isaria farinosa
1646	Isaria fumosorosea	3188	Isaria fumosorosea	3596	Isaria farinosa
1684	Isaria andoi	3191	Isaria farinosa	3597	Isaria farinosa
1686	Isaria flavovirescens	3192	Isaria amoenerosea	3598	Isaria farinosa
1851	Isaria farinosa	3221	Isaria farinosa	3599	Isaria farinosa
1867	Isaria fumosorosea	3302	Isaria fumosorosea	3658	Isaria farinosa
1868	Isaria fumosorosea	3303	Isaria javanica	3659	Isaria farinosa
1939	Isaria farinosa	3313	Isaria fumosorosea	3660	Isaria fumosorosea
1957	Isaria farinosa	3322	Isaria fumosorosea	3661	Isaria farinosa
2057	Isaria farinosa	3408	Isaria fumosorosea	3662	Isaria fumosorosea
2131	Isaria farinosa	3429	Isaria fumosorosea	3663	Isaria fumosorosea
2152	Isaria guensis	3458	Isaria fumosorosea	3664	Isaria farinosa
2175	Isaria fumosorosea	3461	Isaria farinosa	3665	Isaria farinosa
2198	Isaria fumosorosea	3480	Isaria fumosorosea	3666	Isaria farinosa
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2219	Isaria fumosorosea	3492	Isaria farinosa	3700	Isaria fumosorosea
2220	Isaria amoenerosea	3493	Isaria farinosa	3771	Isaria farinosa
2221	Isaria fumosorosea	3494	Isaria farinosa	3776	Isaria javanica
2247	Isaria fumosorosea	3495	Isaria farinosa	3778	Isaria javanica
2269	Isaria farinosa	3496	Isaria farinosa	3800	Isaria fumosorosea
2344	Isaria farinosa	3497	Isaria farinosa	3824	Isaria fumosorosea
2355	Isaria farinosa	3498	Isaria farinosa	3843	Isaria fumosorosea
2375	Isaria farinosa	3499	Isaria farinosa	3848	Isaria fumosorosea
2376	Isaria farinosa	3500	Isaria farinosa	3851	Isaria fumosorosea
2379	Isaria farinosa	3501	Isaria farinosa	3852	Isaria fumosorosea

3857 Isaria fumosorosea	4699 Isaria fumosorosea	5297 Isaria fumosorosea
3878 Isaria fumosorosea	4700 Isaria fumosorosea	5298 Isaria fumosorosea
3889 Isaria fumosorosea	4701 Isaria fumosorosea	5299 Isaria fumosorosea
3917 Isaria fumosorosea	4702 Isaria fumosorosea	5300 Isaria fumosorosea
3938 Isaria tenuipes	4703 Isaria fumosorosea	5301 Isaria fumosorosea
3939 Isaria tenuipes	4704 Isaria fumosorosea	5302 Isaria fumosorosea
3981 Isaria javanica	4705 Isaria fumosorosea	5303 Isaria fumosorosea
3982 Isaria fumosorosea	4706 Isaria fumosorosea	5304 Isaria fumosorosea
3983 Isaria fumosorosea	4707 Isaria fumosorosea	5305 Isaria fumosorosea
3984 Isaria fumosorosea	4708 Isaria fumosorosea	5306 Isaria farinosa
3985 Isaria fumosorosea	4709 Isaria fumosorosea	5307 Isaria fumosorosea
3986 Isaria fumosorosea	4710 Isaria fumosorosea	5308 Isaria fumosorosea
3987 Isaria fumosorosea	4711 Isaria fumosorosea	5309 Isaria fumosorosea
3988 Isaria fumosorosea	4849 Isaria amoenerosea	5310 Isaria fumosorosea
3989 Isaria fumosorosea	5073 Isaria farinosa	5311 Isaria fumosorosea
4010 Isaria farinosa	5074 Isaria farinosa	5312 Isaria fumosorosea
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4040 Isaria farinosa	5081 Isaria farinosa	5315 Isaria fumosorosea
4043 Isaria farinosa	5082 Isaria farinosa	5316 Isaria fumosorosea
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4045 Isaria farinosa	5084 Isaria farinosa	5318 Isaria fumosorosea
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4097 Isaria amoenerosea	5087 Isaria fumosorosea	5321 Isaria javanica
4205 Isaria fumosorosea	5088 Isaria fumosorosea	5322 Isaria fumosorosea
4383 Isaria fumosorosea	5089 Isaria fumosorosea	5323 Isaria fumosorosea
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4401 Isaria fumosorosea	5107 Isaria fumosorosea	5325 Isaria fumosorosea
4404 Isaria fumosorosea	5113 Isaria fumosorosea	5326 Isaria fumosorosea
4405 Isaria farinosa	5115 Isaria fumosorosea	5327 Isaria fumosorosea
4406 Isaria fumosorosea	5116 Isaria fumosorosea	5328 Isaria fumosorosea
4407 Isaria fumosorosea	5117 Isaria fumosorosea	5329 Isaria fumosorosea
4408 Isaria fumosorosea	5118 Isaria fumosorosea	5330 Isaria fumosorosea
4409 Isaria fumosorosea	5119 Isaria fumosorosea	5331 Isaria fumosorosea
4410 Isaria fumosorosea	5121 Isaria fumosorosea	5368 Isaria farinosa
4411 Isaria fumosorosea	5122 Isaria fumosorosea	5462 Isaria fumosorosea
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4460 Isaria fumosorosea	5157 Isaria fumosorosea	5548 Isaria farinosa
4461 Isaria fumosorosea	5158 Isaria fumosorosea	5627 Isaria fumosorosea
4479 Isaria fumosorosea	5159 Isaria fumosorosea	5675 Isaria farinosa
4480 Isaria fumosorosea	5178 Isaria farinosa	5676 Isaria farinosa
4481 Isaria fumosorosea	5191 Isaria farinosa	5679 Isaria farinosa
4482 Isaria fumosorosea	5194 Isaria farinosa	5694 Isaria fumosorosea
4483 Isaria fumosorosea	5251 Isaria fumosorosea	5699 Isaria farinosa
4484 Isaria fumosorosea	5252 Isaria fumosorosea	5700 Isaria tenuipes
4485 Isaria fumosorosea	5253 Isaria fumosorosea	5754 Isaria farinosa
4486 Isaria fumosorosea	5254 Isaria fumosorosea	5760 Isaria farinosa
4487 Isaria fumosorosea	5255 Isaria fumosorosea	5761 Isaria farinosa
4488 Isaria fumosorosea	5256 Isaria fumosorosea	5774 Isaria farinosa
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4490 Isaria fumosorosea	5258 Isaria fumosorosea	5776 Isaria farinosa
4491 Isaria fumosorosea	5259 Isaria javanica	5784 Isaria farinosa
4492 Isaria fumosorosea	5260 Isaria fumosorosea	5788 Isaria farinosa
4493 Isaria fumosorosea	5261 Isaria fumosorosea	5790 Isaria farinosa
4494 Isaria fumosorosea	5262 Isaria fumosorosea	5792 Isaria farinosa
4495 Isaria fumosorosea	5263 Isaria fumosorosea	5797 Isaria farinosa
4496 Isaria fumosorosea	5264 Isaria fumosorosea	5799 Isaria farinosa
4497 Isaria fumosorosea	5265 Isaria fumosorosea	5800 Isaria farinosa
4498 Isaria fumosorosea	5266 Isaria fumosorosea	5801 Isaria farinosa
4499 Isaria fumosorosea	5267 Isaria fumosorosea	5802 Isaria farinosa
4500 Isaria fumosorosea	5268 Isaria fumosorosea	5806 Isaria javanica
4501 Isaria fumosorosea	5269 Isaria fumosorosea	5826 Isaria farinosa
4502 Isaria fumosorosea	5270 Isaria fumosorosea	5827 Isaria farinosa
4503 Isaria fumosorosea	5271 Isaria fumosorosea	5830 Isaria farinosa
4698 Isaria fumosorosea	5272 Isaria fumosorosea	5834 Isaria farinosa

ARSEF Number

5844	Isaria fumosorosea	6789	Isaria fumosorosea	8020	Isaria farinosa
5845	Isaria fumosorosea	6797	Isaria fumosorosea	8021	Isaria farinosa
5846	Isaria fumosorosea	6798	Isaria fumosorosea	8022	Isaria farinosa
5847	Isaria fumosorosea	6799	Isaria fumosorosea	8142	Isaria fumosorosea
5855	Isaria fumosorosea	6800	Isaria fumosorosea	8251	Isaria farinosa
5858	Isaria farinosa	6889	Isaria tenuipes	8252	Isaria farinosa
5860	Isaria fumosorosea	6893	Isaria fumosorosea	8310	Isaria cateniannulata
5874	Isaria fumosorosea	6916	Isaria fumosorosea	8333	Isaria fumosorosea
5883	Isaria farinosa	6925	Isaria sinclairii	8337	Isaria fumosorosea
5884	Isaria farinosa	6983	Isaria farinosa	8345	Isaria fumosorosea
5885	Isaria farinosa	7028	Isaria poprawskii	8348	Isaria fumosorosea
5996	Isaria farinosa	7029	Isaria fumosorosea	8411	Isaria farinosa
6012	Isaria farinosa	7050	Isaria fumosorosea	8448	Isaria fumosorosea
6017	Isaria farinosa	7051	Isaria fumosorosea	8599	Isaria farinosa
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6028	Isaria farinosa	7094	Isaria farinosa	8717	Isaria fumosorosea
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6030	Isaria farinosa	7119	Isaria javanica	8719	Isaria fumosorosea
6031	Isaria farinosa	7204	Isaria fumosorosea	8720	Isaria fumosorosea
6032	Isaria farinosa	7205	Isaria fumosorosea	8721	Isaria fumosorosea
6033	Isaria farinosa	7219	Isaria farinosa(?)	8723	Isaria fumosorosea
6034	Isaria farinosa	7243	Isaria farinosa	8724	Isaria fumosorosea
6036	Isaria farinosa	7245	Isaria farinosa	8725	Isaria fumosorosea
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6038	Isaria farinosa	7262	Isaria farinosa	8727	Isaria fumosorosea
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6097	Isaria farinosa	7347	Isaria fumosorosea	8770	Isaria farinosa
6098	Isaria farinosa	7477	Isaria javanica	8806	Isaria farinosa(?)
6192	Isaria fumosorosea	7523	Isaria fumosorosea	8840	Isaria fumosorosea
6200	Isaria farinosa	7531	Isaria farinosa	8892	Isaria fumosorosea
6202	Isaria farinosa	7574	Isaria farinosa	8917	Isaria farinosa
6203	Isaria fumosorosea	7575	Isaria farinosa	8928	Isaria fumosorosea
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6206	Isaria fumosorosea	7714	Isaria farinosa	9270	Isaria farinosa
6207	Isaria farinosa	7715	Isaria farinosa	9275	Isaria farinosa
6222	Isaria farinosa	7716	Isaria fumosorosea	9276	Isaria farinosa
6240	Isaria cateniannulata	7717	Isaria farinosa	9277	Isaria farinosa
6241	Isaria cateniannulata	7718	Isaria farinosa	9278	Isaria farinosa
6242	Isaria cateniannulata	7719	Isaria farinosa	9292	Isaria farinosa
6243	Isaria cateniannulata	7720	Isaria farinosa	9293	Isaria farinosa
6244	Isaria cateniobliqua	7722	Isaria farinosa	9294	Isaria fumosorosea
6245	Isaria farinosa	7723	Isaria farinosa	9380	Isaria fumosorosea
6246	Isaria farinosa	7724	Isaria farinosa	9508	Isaria sp.
6249	Isaria tenuipes	7725	Isaria farinosa	9509	Isaria coleopterorum
6283	Isaria cateniobliqua	7726	Isaria farinosa	9510	Isaria farinosa
6288	Isaria farinosa	7727	Isaria farinosa	9511	Isaria farinosa
6434	Isaria fumosorosea	7728	Isaria farinosa	9512	Isaria farinosa
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6493	Isaria farinosa	7736	Isaria farinosa	9520	Isaria fumosorosea
6495	Isaria farinosa	7737	Isaria farinosa	9521	Isaria fumosorosea
6496	Isaria farinosa	7739	Isaria farinosa	9531	Isaria tenuipes
6497	Isaria farinosa	7740	Isaria fumosorosea	9532	Isaria tenuipes
6562	Isaria fumosorosea	7743	Isaria fumosorosea	9533	Isaria tenuipes
6607	Isaria farinosa	7777	Isaria farinosa	9534	Isaria tenuipes
6609	Isaria farinosa	7790	Isaria tenuipes	9567	Isaria farinosa(?)
6610	Isaria fumosorosea	7961	Isaria farinosa	9568	Isaria farinosa(?)
6611	Isaria farinosa	7962	Isaria farinosa	9569	Isaria farinosa(?)
6615	Isaria fumosorosea	7973	Isaria cicadae(?)	9570	Isaria farinosa(?)
6619	Isaria farinosa	8016	Isaria farinosa	9571	Isaria farinosa(?)
6623	Isaria farinosa	8017	Isaria farinosa	9572	Isaria farinosa(?)
6730	Isaria fumosorosea	8018	Isaria farinosa	9573	Isaria farinosa(?)
6788	Isaria tenuipes	8019	Isaria farinosa	9574	Isaria farinosa

9575 Isaria farinosa	11632 Isaria sp.	13700 Isaria sp.
9576 Isaria farinosa	11633 Isaria sp.	13759 Isaria sp.
9577 Isaria farinosa	11634 Isaria sp.	
9578 Isaria farinosa	11635 Isaria sp.	
9579 Isaria farinosa	11636 Isaria sp.	
9580 Isaria farinosa	11656 Isaria farinosa	
9581 Isaria farinosa(?)	11657 Isaria fumosorosea	
9582 Isaria fumosorosea	11658 Isaria fumosorosea	
9583 Isaria fumosorosea	11659 Isaria fumosorosea	
9584 Isaria fumosorosea	11705 Isaria tenuipes	
9585 Isaria fumosorosea	11706 Isaria tenuipes	
9586 Isaria fumosorosea	11707 Isaria tenuipes	
9601 Isaria cateniannulata	11710 Isaria farinosa	
9602 Isaria fumosorosea	11721 Isaria farinosa	
9944 Isaria farinosa	11722 Isaria cateniannulata	
9945 Isaria farinosa	11726 Isaria cicadae	
10155 Isaria farinosa	11753 Isaria sp.	
10156 Isaria farinosa	11822 Isaria farinosa	
10157 Isaria farinosa	11823 Isaria farinosa	
10158 Isaria farinosa	11824 Isaria farinosa	
10159 Isaria farinosa	11825 Isaria farinosa	
10160 Isaria farinosa	11826 Isaria farinosa	
10161 Isaria farinosa	11827 Isaria farinosa	
10162 Isaria sp.	11828 Isaria farinosa	
10163 Isaria coleopterorum	11829 Isaria farinosa	
10165 Isaria farinosa	11830 Isaria farinosa	
10224 Isaria fumosorosea	11831 Isaria farinosa	
10231 Isaria farinosa	11832 Isaria farinosa	
10234 Isaria farinosa	11833 Isaria farinosa	
10237 Isaria farinosa	11834 Isaria farinosa	
10238 Isaria farinosa	11835 Isaria farinosa	
10239 Isaria farinosa	12166 Isaria cateniannulata(?)	
10240 Isaria farinosa	12167 Isaria cateniannulata	
10241 Isaria farinosa	12172 Isaria fumosorosea	
10242 Isaria farinosa	12173 Isaria fumosorosea	
10247 Isaria farinosa	12174 Isaria fumosorosea	
10248 Isaria farinosa	12175 Isaria fumosorosea	
10249 Isaria farinosa	12177 Isaria fumosorosea	
10250 Isaria farinosa	12190 Isaria sp.	
10251 Isaria farinosa	12409 Isaria sp.	
10252 Isaria farinosa	12433 Isaria sp.	
10258 Isaria fumosorosea	12941 Isaria sp.	
10360 Isaria sp.	13225 Isaria fumosorosea	
10363 Isaria sp.	13273 Isaria fumosorosea	
10364 Isaria sp.	13274 Isaria farinosa	
10365 Isaria sp.	13362 Isaria farinosa	
10366 Isaria sp.	13365 Isaria farinosa	
10367 Isaria sp.	13367 Isaria farinosa	
10368 Isaria sp.	13507 Isaria farinosa	
10369 Isaria sp.	13662 Isaria sp.	
10370 Isaria sp.	13663 Isaria sp.	
10371 Isaria sp.	13664 Isaria sp.	
10372 Isaria sp.	13665 Isaria sp.	
10373 Isaria sp.	13667 Isaria sp.	
10374 Isaria sp.	13668 Isaria sp.	
10375 Isaria sp.	13669 Isaria sp.	
10376 Isaria sp.	13670 Isaria sp.	
10377 Isaria sp.	13671 Isaria sp.	
10378 Isaria sp.	13672 Isaria sp.	
10379 Isaria sp.	13673 Isaria sp.	
10380 Isaria sp.	13674 Isaria sp.	
10381 Isaria sp.	13675 Isaria sp.	
10382 Isaria sp.	13676 Isaria sp.	
10383 Isaria sp.	13677 Isaria sp.	
10384 Isaria sp.	13679 Isaria sp.	
10385 Isaria sp.	13680 Isaria sp.	
11628 Isaria sp.	13681 Isaria sp.	
11629 Isaria sp.	13695 Isaria sp.	
11630 Isaria sp.	13698 Isaria sp.	
11631 Isaria sp.	13699 Isaria sp.	