

Integrating Taverna Player into Scratchpads

www.taverna.org.uk | scratchpads.eu

Robert Haines⁺, Simon Rycroft^{*},

Vince Smith^{*}, Carole Goble⁺

⁺*University of Manchester, UK*; ^{*}*Natural History Museum, UK*

robert.haines@manchester.ac.uk



Scratchpads and Taverna Player

- What are Scratchpads?
 - Taverna and Taverna Player
 - Why integrate the two?
 - Lightweight integration (embed)
 - Tight integration (Web Service)
-
- Scratchpads developed in ViBRANT
 - Taverna Player developed in BioVeL





Scratchpads

Virtual Research Environments

 **Scratchpads**
biodiversity online

[contact us](#) 

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Why choose Scratchpads?

Create your own site **Publish your data online** **Contribute to biodiversity knowledge** **Collaborate with your peers**

Scratchpads are an easy and effective way to present your data online.
[READ MORE](#)



Join the community!

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-  [Join a Scratchpad](#)
-  [Try our sandbox](#)
-  [Become a Scratchpads ambassador](#)
-  [Develop Scratchpads source code](#)
-  [Read about our policies](#)

Case studies

African ichthyology portal

Africhthy is a web portal for African ichthyology created to make available species data & literature as well as to promote efficient networking and collaboration among professionals, students and hobbyists.

[VISIT THIS SCRATCHPAD](#)



Making taxonomy digital, open & linked



What are Scratchpads?

- Virtual Research Environments
- Hosted websites for biodiversity data
- Virtual research & publication platform
- Curated data and analysis
- Completely open access & open source
- Modular & flexible

Cypripedioideae
(Slipper Orchids)

ContentList Report status Log in

Search All Taxonomy

HOME ABOUT SLIPPER ORCHIDS CYPRIPEDIOIDEAE LITERATURE MEDIA GALLERY SPECIMENS BLOG

Welcome to Cypripedioideae

The slipper orchids (Cypripedioideae, Orchidaceae) comprise one of the five sub-families in the Orchid family.

The most prominent feature of slipper orchids is the pouch or 'slipper-shaped' lip, which forms a trap for visiting insects that effect pollination as they make their escape. The lateral sepals are fused to form a synsepal. As with all orchids, the male and female reproductive parts of the flower (stamens and stigma) are located on the dorsal sepal. In slipper orchids, the upper anther is topped by a conspicuous, more or less 'shield-shaped' staminode (present in all species except *Phragmipedium caudatum*).

The classification data and nomenclature (including protologue citation) used in emonocot Cypripedioideae are derived from the World Checklist of Selected Plant Families. Taxon descriptions and associated images (including icons) and other data are derived from a variety of taxonomic treatments, with permission from the publishers. These include the monographs by Philip J. Cribb (for *Cypripedium*, *Paphiopedilum* and *Sesleria*), the treatment of *Zygopetalum* by Leslie McCormick (1990) and the description of the monotypic Mexican genus *Habenaria* by Mark Chase (1996).

To learn more about the emonocot project, see [emonocot.org](#)

RECENT BLOG ENTRIES

Integration of the IPNI web service into emonocot scratchpads
R. Bone - 2012-07-26
R. has written a blog that describes his recent work on integration of the IPNI web service in T

Searching for protologues
R. Bone - 2012-07-10
The emonocot Content Team aims to gather protologues for

General Orchidaceae and emonocot orchid sites of the future
R. Bone - 2012-07-02
To date, virtually all content on the emonocot Cypripedioideae site has come from the monographs

LATEST LITERATURE

Original Description of *Uviediella lindenii*
Scratchpad Team - 2012-07-16

Original Description of *Uviediella*
Scratchpad Team - 2012-07-16

Original Description of *Subsection Cyrtosedium*
Scratchpad Team - 2012-07-16

RECENT TAXON DESCRIPTIONS

Cypripedium
R. Bone - 2012-07-03

Mesepidium
R. Bone - 2012-07-02

Phragmipedium
R. Bone - 2012-07-02

Links

Home About slipper orchids Cypripedioideae Literature Media gallery Specimens Taxa

Log in

Scratchpads University of Bristol

Sixes Orchid Foundation

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Cite this page: emonocot Team Cypripedioideae <http://cypripedioideae.emonocot.org> (accessed 4 October 2012)



What are Scratchpads?

facilitate

development of online research communities

through

standardized environment of entering and curating data

that allow

sharing and interlinking

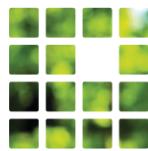
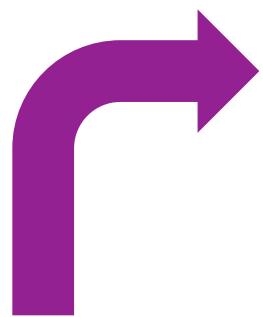
and

dissemination of research products



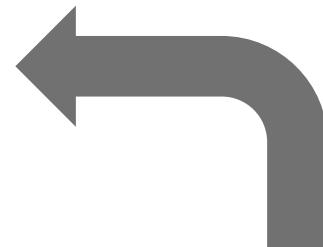
The Scratchpads concept

A Scratchpad is a website that holds data for you and your community



Scratchpads

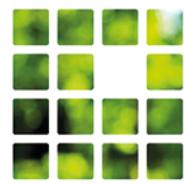
biodiversity online



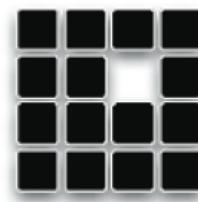
Your data



External data & services



The Scratchpads concept



Scratchpads
biodiversity online



Scratchpads details

- Drupal CMS (7.26) with both custom and Drupal.org contributed modules.
- Over 500 Scratchpads sites managed by Aegir
 - www.aegirproject.org
- Hosted on two application servers
 - Load balancing and caching performed by Varnish
- 2 MySQL database servers
 - master-master configuration
- 1 Apache Solr search server





Taverna

- Scientific Workflow Management System
- Workbench
 - Desktop application
- Command-line tool
 - Batch
- Server
 - Multi-user
 - Secure separation of workflow runs
 - REST and SOAP interfaces





Taverna Player

- A Ruby on Rails plugin library
 - Hooks into host application's
 - Workflow model
 - Authentication and authorization system
 - Provides a REST interface
- Talks to Taverna Server's REST interface
 - Uploads the workflow, sets inputs
 - Presents workflow interactions to the user
 - Retrieves results, logs and provenance data

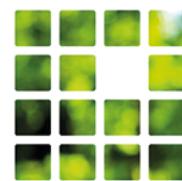




Taverna Player

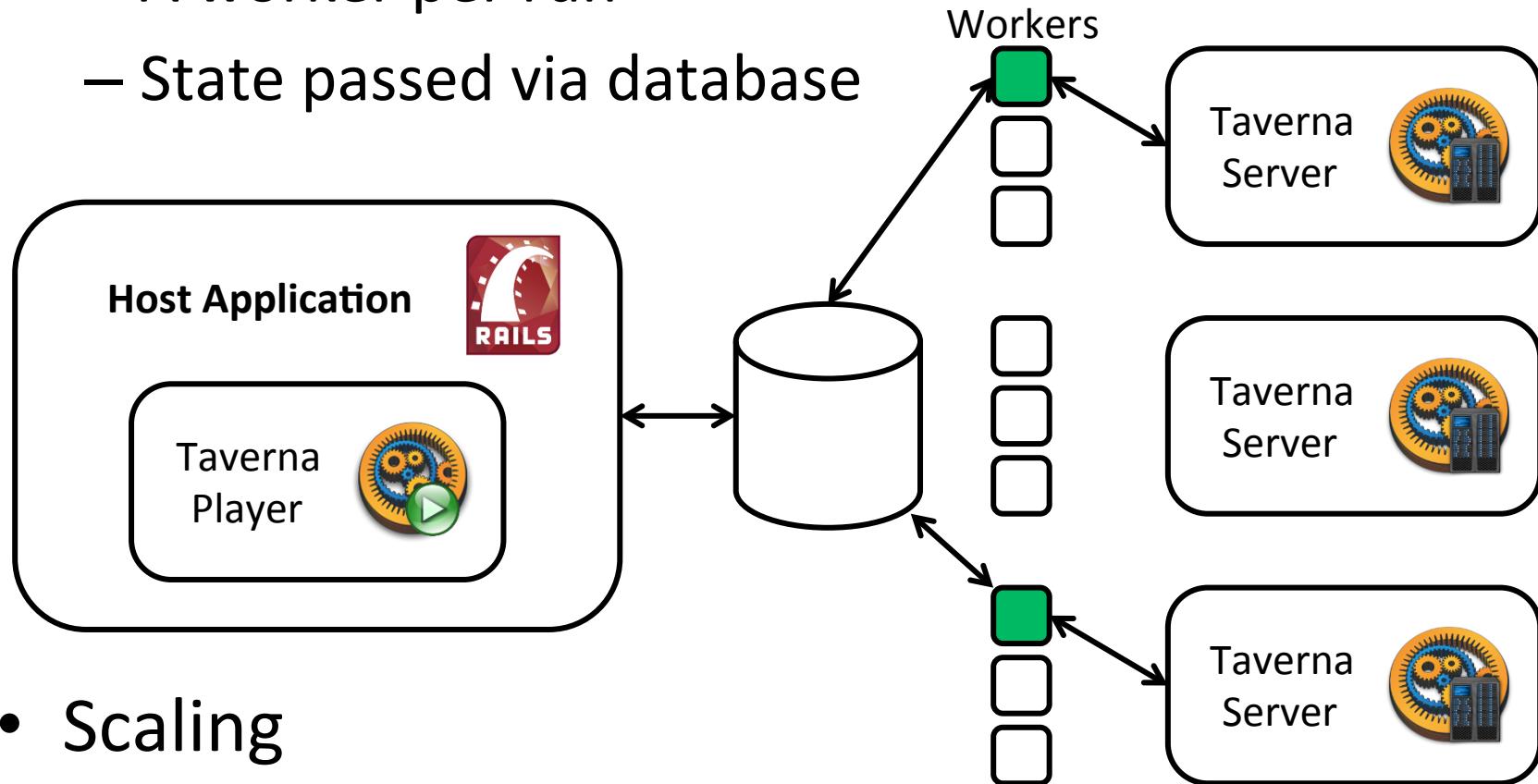
- Surfaces a workflow run in three ways:
 - As a Web interface in the browser
 - In the host application
 - As an embeddable widget
 - In any Web page (c.f. YouTube videos)
 - As a REST-based Web Service
- All look-and-feel and styling is derived from the host application
 - Rails's hierarchical layouts and views

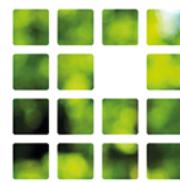




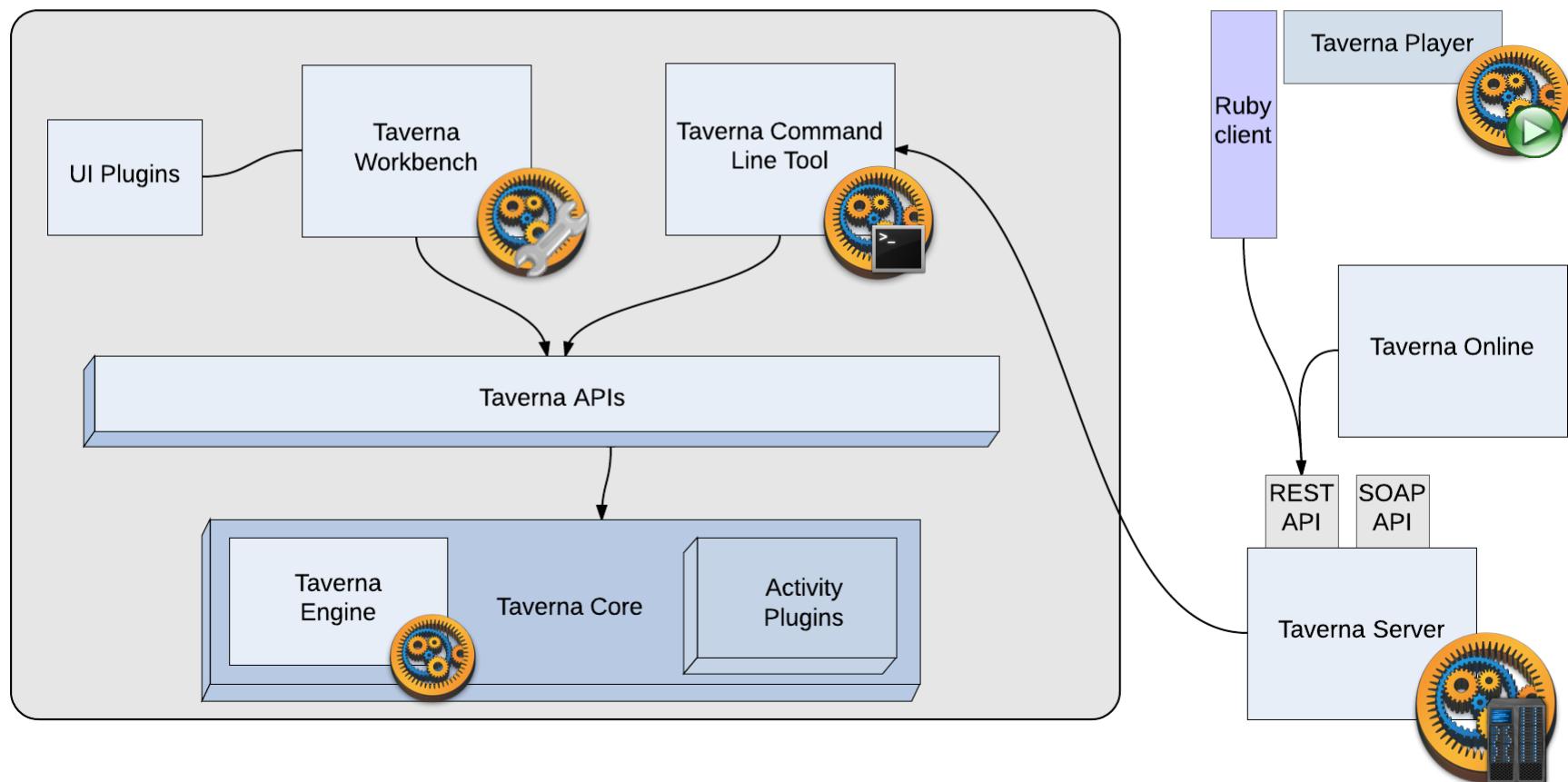
Taverna Player

- Total workflow run isolation
 - A worker per run
 - State passed via database





Taverna all together





Taverna Player details

- Ruby on Rails
 - Version 3.2 (released) and 4.x (testing)
 - Plugin
- Delayed Job for workflow run isolation
 - Manages workflow run queues
 - Start workers to match Taverna Server capacity
 - Loss of a workflow run will not affect any others





Player in the BioVeL Portal

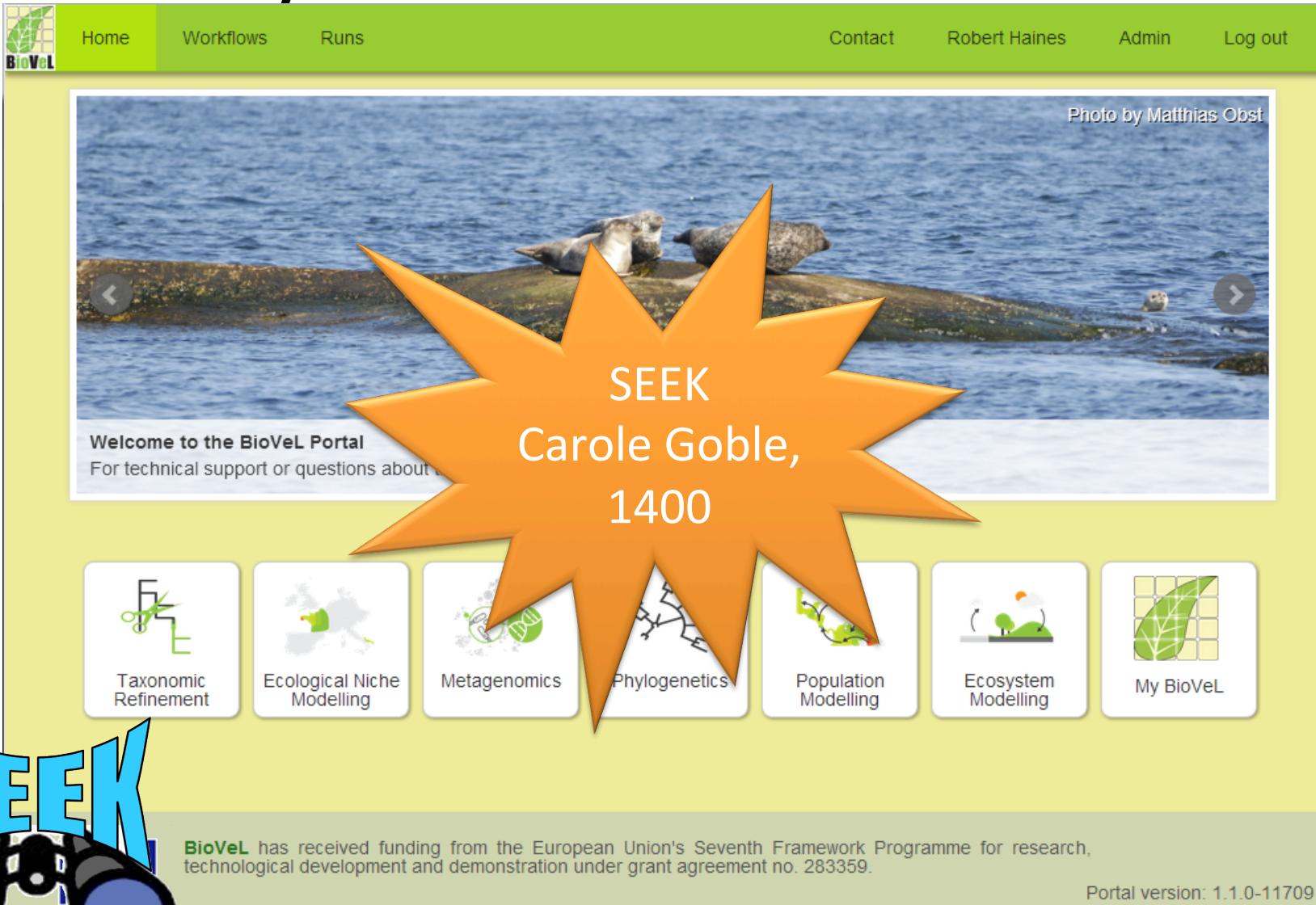
A screenshot of the BioVeL Portal homepage. At the top, there's a navigation bar with links for Home, Workflows, Runs, Contact, Robert Haines, Admin, and Log out. The main content area features a large image of seals on a rock, with a starburst overlay containing the text "SEEK Carole Goble, 1400". Below this are six workflow icons: Taxonomic Refinement, Ecological Niche Modelling, Metagenomics, Phylogenetics, Population Modelling, and Ecosystem Modelling. A "My BioVeL" icon is also present. The bottom of the page includes a "SEEK" logo with binoculars, a funding acknowledgment, and a portal version number.

Photo by Matthias Obst

Welcome to the BioVeL Portal
For technical support or questions about

SEEK
Carole Goble,
1400

Taxonomic Refinement

Ecological Niche Modelling

Metagenomics

Phylogenetics

Population Modelling

Ecosystem Modelling

My BioVeL

BioVeL has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no. 283359.

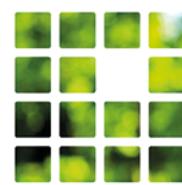
Portal version: 1.1.0-11709

<https://www.youtube.com/watch?v=s3D8JXc-tSM>



Why integrate?

- Join two communities
- BioVeL Portal
 - Good for the “day job”, collaboration with others in, or close to, the project.
- Scratchpads
 - Dissemination; wide reach but focussed area
 - Move science into the public domain
 - Lots of data compatible with BioVeL pipelines



Workflows in Scratchpads I

- Lightweight embedding of a workflow
- Scratchpads updated to expose public data
 - As CSV
 - For each individual taxa
- Workflow is run as “guest” user
 - Embedding only available for “public” workflows
- Results stay in Taverna Player



Workflows in Scratchpads I

- Embed like a YouTube video
- Embedded workflow is passed the URI of data

```
<iframe src="http://portal.org/runs/new?
    embedded=true&
    workflow_id=1&
    input_uri=http://scratchpad.org/taxa/1234/data">
</iframe>
```

- This level of integration is lightweight
 - Science showcases
 - One off analyses

<https://github.com/myGrid/taverna-player/wiki/Embedding>



Workflows in Scratchpads I

Bio STIF Biodiversity Spatial Temporal Interactive interface

Version 0.2.0 Help

Continue the Workflow Abort the Workflow

Toolbar

Selection layer

Map selector tools

Aggregation type

Hide coordinates

Longitude: -34.97652, Latitude: 7.26301

1,194 results with location information

Datasources

species_points

Additional maps

pheidole_megacephala_1

species_points

1-100 of 1194 Results

decimalLatitude nameComplete occurrenceID

	decimalLatitude	nameComplete	occurrenceID
<input type="checkbox"/>	-24.95694	Pheidole megacephala	CASC-BLF05316-CASENT0019150
<input type="checkbox"/>	-13.08333	Pheidole megacephala	CASC-BLF09426-CASENT0041336
<input type="checkbox"/>	-16.01	Pheidole megacephala	CASC-BLF06812-CASENT0025506

1 < Page 1 of 12 > N

Cancel

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Search

All Taxonomy

TAXA (ALSO SEARCH BY USING TAXONIC SEARCH BAR IN HEADER)

- Amblyoponinae (2)
- Tanymecinae (1)
- Tetramoriinae (1)
- Cerapachyinae (1)
- Ectatomminae (2)
- Dolichoderinae (6)
- Fomicinae (9)
- Myrmicinae (17)
- Myrmecinae (1)
- Acromyrmex (1)
- Aneristus (1)
- Atta (2)
- Camponotus (7)
- Leptothorax (1)
- Crematogaster (2)
- Cyphomyrmex (1)
- Euroharpalathine (1)
- Monomorium (1)
- Myrmica (1)
- Pheidole (25)
 - Pheidole anastasi
 - Pheidole bimacki
 - Pheidole fervens
 - Pheidole megacephala
 - Pheidole moerens
 - Pheidole obscurithorax
 - Pheidole punctatissima
 - Pheidole teneriffae
- Brachymyrmex (1)
- Solenopsis (1)
- Strumigenys (12)
- Tetramorium (9)
- Vollenhovia (1)
- Wasmannia (2)
- Proteromyces (1)
- Pseudomyrmecinae (1)

Home > Pheidole megacephala > Myrmicinae > Pheidole > Pheidole megacephala

Run status: Waiting for user input

Welcome to the BioVeL Portal
For technical support or questions a

Taxonomic Refinement Ecological Nich Modelling

BioVeL has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 654079.

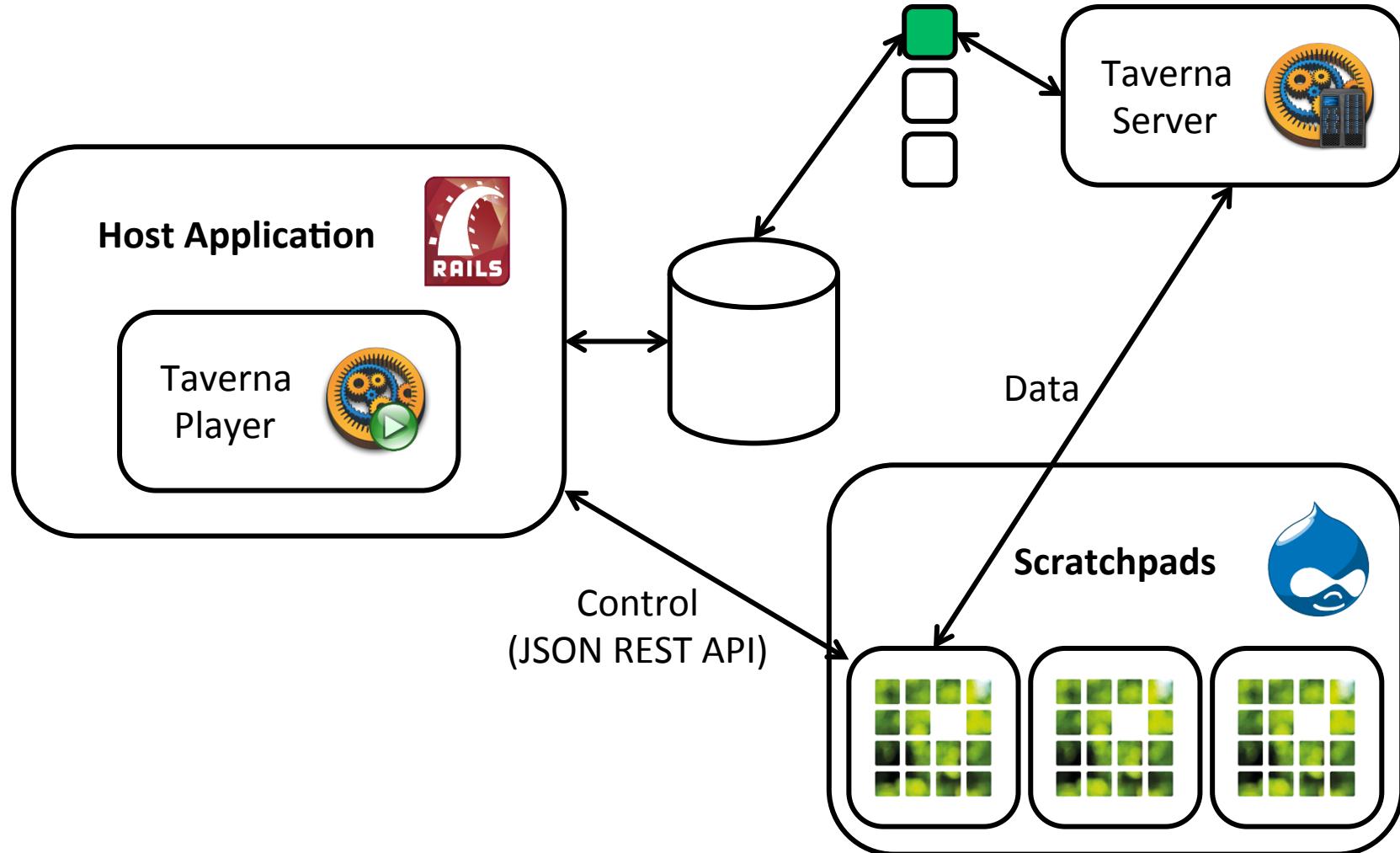


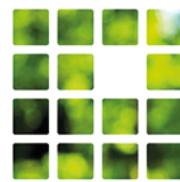
Workflows in Scratchpads II

- Tighter integration of analysis pipelines
 - Scratchpads directly controls Taverna Player
- Scratchpads has ‘offsite computation’ modules
 - Large scale batch operations, etc
 - Workflow runs added to this group
- Scratchpads uses the Taverna Player REST API
 - Within the host application/portal



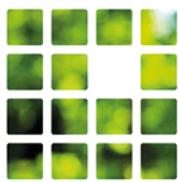
Workflows in Scratchpads II





Workflows in Scratchpads II

- Scratchpads can
 - Authenticate to Taverna Player
 - Get a list of workflows and show these to the user
 - Set up the workflow run, inputs, etc
 - Present interactions to the user
 - Retrieve results for further analysis
- This level of integration is more suited to
 - Long-running workflows
 - Larger, repeated studies



Workflows in Scratchpads II

Dashboard Content Services Structure Appearance People Configuration Import Help Hello **username** Log out

Edit shortcuts

...sens|

HOME > ADD TAVERNA RUN > MULTI-INTERACTION >

+ X

Create Multi-interaction run

NAME *

Simple Interaction

Create

This screenshot shows the 'Create Multi-interaction run' interface in the Scratchpads II application. The top navigation bar includes links for Dashboard, Content, Services, Structure, Appearance, People, Configuration, Import, Help, and a personalized greeting 'Hello username'. A 'Log out' link is also present. Below the navigation is a breadcrumb trail: HOME > ADD TAVERNA RUN > MULTI-INTERACTION. On the far right of the breadcrumb trail are a '+' button and an 'X' button. The main form has a 'NAME *' field containing 'Simple Interaction' and a 'Create' button.



Workflows in Scratchpads II

[Home](#) » [Services](#) » Simple Interaction

Simple Interaction

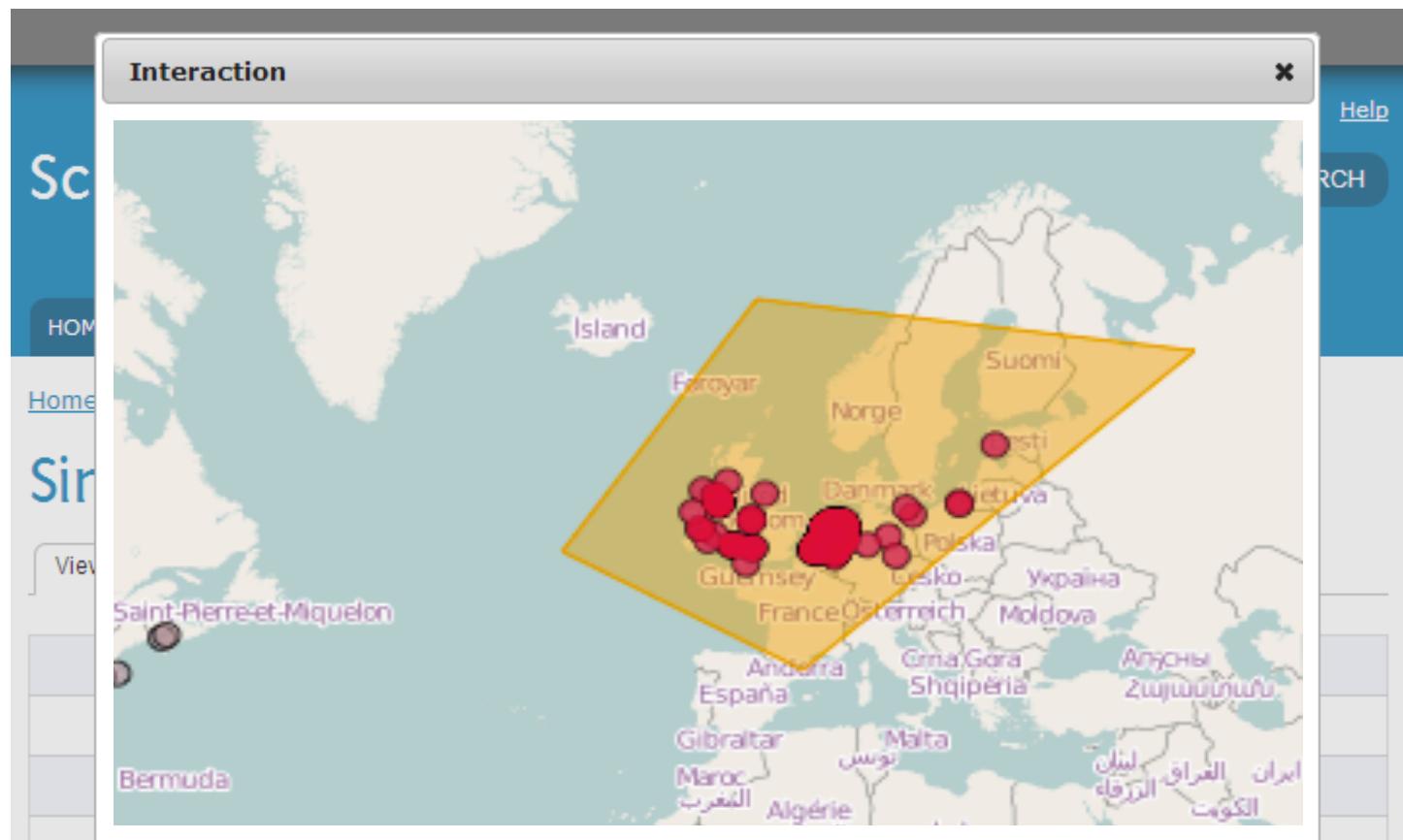
[View](#) [Delete](#)

Job name	Simple Interaction
Job type	Multi-interaction
Created	Thu, 2014-07-10 15:31
Changed	Thu, 2014-07-10 15:31

Id	1103
Name	Multi-interaction (Multi-interaction (Thu, 2014-07-10 15:31))
Workflow id	52
State	running
Start time	2014-07-10T15:31:55Z
Finish time	
Status message	Running
Inputs	



Workflows in Scratchpads II





Workflows in Scratchpads II

[Home](#) » [Services](#) » Simple Interaction

Simple Interaction

[View](#) [Delete](#)

Job name	Simple Interaction
Job type	Multi-interaction
Created	Thu, 2014-07-10 15:31
Changed	Thu, 2014-07-10 15:34
Output file	taverna-1103.zip

Id	1103
Name	Multi-interaction (Multi-interaction (Thu, 2014-07-10 15:31))
Workflow id	52
State	finished
Start time	2014-07-10T15:31:55Z
Finish time	2014-07-10T15:34:32Z
Status message	Finished
Inputs	
Log	/runs/1103/download/log



Integration comparison

Lightweight embedding

- Run a specified workflow
 - Chosen by the Scratchpads owner
- Results are not stored in the Scratchpads itself
- Workflow run retains host app look and feel

Tight integration

- Run any workflow
 - That the Scratchpads is authorized to see
- Results are available for further analysis
- Workflow appears as part of the Scratchpads

Common

- Workflows are run within Taverna Player in the host app
- Interactions are presented to the user
- Results can be downloaded



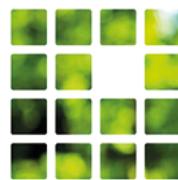
Tool Statistics

Taverna

- Workbench
 - Over 90,000 downloads
 - 1,000 in month after release
 - Over 380 sites use/used it
- Server
 - ?
- Player
 - Over 2000 downloads

Scratchpads

- Over 500 Scratchpads
- Over 900,000 pages
- Over 6,000 users



Thank you!

- Taverna Player
 - Robert Haines: robert.haines@manchester.ac.uk
 - Web: www.taverna.org.uk
 - Code: github.com/myGrid/taverna-player
 - Licence: BSD
- Scratchpads
 - Simon Rycroft: s.rycroft@nhm.ac.uk
 - Web: scratchpads.eu
 - Code: git.scratchpads.eu/git/scratchpads-2.0.git
 - Licence: GPL2

This work was enabled by BioVeL (grant no. 283359) and ViBRANT (grant no. 261532) that received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration.

www.biovel.eu | www.vbrant.eu