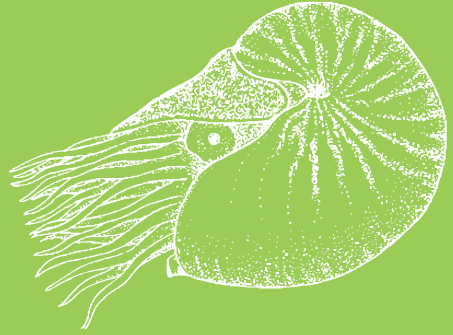


Scratchpads: what are they?

The idea behind the EDIT Scratchpads is simple enough: make web sites easy to get, easy to use, and easy to read by computers and humans alike. The first step toward starting a Scratchpad is a vision: what would you like to see up on the web for your taxonomic group? Initially, this may be no more than a personal statement about your work, but it will grow more quickly if you can share that vision with others. As an illustration, one of the first Scratchpads is devoted to the family *Sciarioidea* (fungus gnats). While the pages were being built some taxonomists from Norway found the site, and with the permission of the site maintainer started adding data of their own. This epitomises our hopes that the Scratchpads will nucleate new communities of taxonomic experts.



Nautilus macromphalus

You might be wondering whether we are truly offering something for nothing, like the sorcerer in the tale of Aladdin from the Arabian Nights offering new lamps for old. What EDIT wants out of the Scratchpads is simple: content and community integration. We know that many taxonomists have data on their own computers and, in many cases, would like to share these data but lack the technical capacity to do so. We also know that many taxonomists will happily contribute a bit of time and effort to enhance a database that they use themselves, either with new information or through quality control. Scratchpads provide a mechanism for doing this. By bringing data and people together, Scratchpads create something that is greater than the sum of their parts. Through their use, EDIT will succeed in its primary goal of integration.

At the heart of this concept is a need to develop an attitude to information that is open, to facilitate the sharing and reuse of data. If someone has put a lot of effort into assembling a body of information, there is a natural tendency to feel ownership and a

desire to exploit this for personal gain. In the case of taxonomists, personal gain means both the resolution of scientific questions and the recognition of this effort by ones peers. It is central to EDIT's philosophy that taxonomists get credit for their work and are given space to exploit their efforts, but these concerns need to be balanced against the needs of others to build on the work of the whole taxonomic community. It is in the interests of taxonomists and the future of taxonomy that we make our work visible to the widest possible audience. Scratchpads facilitate this by putting the creators of taxonomic data in control of when and where their efforts are published. They provide a mechanism whereby individuals can build content privately or collaboratively, and at the push of a button expose that content to a larger audience, be that other members of the site, or everybody with access to the World Wide Web. The rights associated with work published on a Scratchpad are protected through a Creative Commons Licence that allows others to use the work for non-commercial purposes as long as the creators of the work are acknowledged. Scratchpad

content is also citable because all changes to a page are archived. Any combination of web address and date allows a visitor to see precisely what was said at a given time, even if a page has changed substantially since it was referenced.

Scratchpads are simply template web sites equipped with a number of tools and services that make it easy to add taxonomically relevant material. They are quite literally white space when you first start them up and the person who applied for the site, a role we call the «maintainer», has to choose the style and structure. These can be from a selection of pre-defined palettes or designed from scratch if the maintainer has the skills. Most importantly they are not branded in any way. All we ask is that maintainers preserve a small statement at the bottom of each page that includes the Creative Commons Licence, and acknowledges EDIT and the programming team that created the software. In this way a user-community can develop an identity of its own rather than being seen as part of a large, more anonymous movement. The community can also fix its own agenda, and determine its own set of standards and values. Site maintainers take ultimate responsibility for the content on the site, but in most cases maintainers choose to pass legal responsibility on to the individuals that create or upload content. This is done through a «conditions of use» page that must be accepted by site members during the registration process.

For the technically minded, Scratchpads are a content management system (CMS) that uses the open-source package Drupal. Individual pages and content elements are held in a database to be served on demand. This makes the management and maintenance of interrelated content straightforward. For the first few sites EDIT purchased site domain names (web addresses) for the life of the EDIT project. These cost a few Euros per year, and hopefully will not challenge anyone to keep them going. For reasons of scalability, new sites will be mounted at a subdomain of "myspecies.info", unless the maintainer has purchased a

Examples of existing scratchpads.

Complete list available at

<http://www.editwebrevisions.info/scratchpadSiteList>

domain name themselves. This allows us to automate the process of establishing new sites, rather than waiting several weeks to register and purchase new domains. Most maintainers prefer to purchase their own domain names and we provide guidance on how to map these addresses to the server that hosts the sites. This can be done at any time before or after a Scratchpad has been set up. Independent site names enhance the community identity over corporate membership because there is no natural way to navigate from one Scratchpad to another, except via the EDIT web site. All sites are currently mounted on a server in London that is independent of the many web addresses that point to this machine. In other words the server could be moved anywhere and all the links to these sites would be preserved. The London server is backed-up daily and all the content is archived, so its continuity of operation is as secure as we can reasonably make it.

There are many benefits to using a CMS in this way. For example, to create content you can use the built-in editor that looks and behaves like a word processor. You can use HTML, but you don't have to if you don't want to. You can cut and paste into it and you can add links to internal or external material in the same way you would with Microsoft Word. The editor is one of many modules we have

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plugged into the CMS to add functionality and, because Drupal is an open source project, there are already a bewildering array of modules available in the public domain: for example there is a bibliographic module that handles citations like a reference manager, so that users can download citations into their own system for local formatting. There are also modules that allow users to upload structured data such as that in Microsoft Excel spreadsheets. We use these so that users can upload taxonomic names, specimen lists, molecular data or custom lists at the click of a button. The project team add new modules and services from time to time, which are then available to all of the Scratchpads on the main server.

When there is no module that does what is required, there are two approaches. An immediate solution is to run another Web based applications in a frame of its own that is embedded on the site. This is not an elegant solution because the content in the frame cannot easily be reused within the rest of the site, but it is quick and it works. A better solution is to write a new module, but that demands more time and effort, both of which are strictly limited. As EDIT develops we hope that we can develop a priority list for new modules and we hope to get resources to write at least some of them.

Individuals can apply for membership of an existing Scratchpad and will be allocated to one of three roles: editor, contributor, or user. Anonymous users can view all the public pages on a site, but only registered users, contributors or editors can contribute to discussions on accessible pages, either by leaving page level comments, or through dedicated fora. Members can also access restricted content such a documents uploaded



Ginkgo Biloba

to the private portion of the Scratchpad's filestore. Contributor level access has all the rights of a registered user, plus the ability to create new content such as bibliographic entries, specimen lists and images. Importantly, contributors can only edit content they have created. This distinguishes them from editors, who have the ability to add, edit or delete contributions from other members, as well as their own content. The allocation of these roles and the creation of the private areas are tasks of the Scratchpad maintainer, but there can be more than one maintainer for a site. Top-level access is restricted to administrators and this role is kept within the project team because actions of an administrator can affect all Scratchpads on the system.

Anyone can apply for a Scratchpad by completing a form available on the EDIT web site. All that is required is a statement of scope and a site name. The scope can be taxonomic (e.g. lizards), geographical (e.g. the Maldives), or both (e.g. lizards of the Maldives). In some cases specialist societies have used a Scratchpad to manage and disseminate information to their society members. We encourage all applicants to consider the scope carefully, so that taxonomically or geographically related sites can be kept together as sections of a single site. This is



Locusta migratoria

simply a question of user convenience, so that someone looking for information can navigate within and not between sites. It also increases web traffic and improves the sites rank within search engines. Collaboration and agreement are not conditions of use and if a community has something distinct to offer from another Scratchpad, even if it is on the same topic, we will consider the application. Long term, we hope that Scratchpads will become a focal point for a community, but it is not necessary for that community to exist at the time a Scratchpad is set up.

Scratchpads by design contain structured data. Our development plan, in conjunction with WP5, is to capture this structured information in a central data warehouse and serve it back to users as required. Integrating the data in this way should create new opportunities for data analysis and can be expected to improve both data quality and data accessibility. Consider, for example, building a bibliography and requiring a citation for Ehrenberg, (1831). Since this is a wide-ranging treatment of invertebrates, there is a good chance that it will already be in the common central bibliography. Or consider the problem of finding homonyms, or searching taxonomic sites by geographical location: but this is a topic for a future article.

The potential for the Scratchpads is only constrained by your imagination. ♦♦

Dr D.McL. Roberts,
Tel: +44 (0)20 7942 5086
Fax: +44 (0)20 7942 5054
d.roberts@nhm.ac.uk



Lepas anatifera

To go further

Find more information about Scratchpads on EDIT WP6 website:

<http://www.editwebrevisions.info>

A live Scratchpad to test is available at:

<http://sandbox.editwebrevisions.info/>

You can fill the Scratchpad application form at:

<http://www.editwebrevisions.info/application>