biomedical publications from 1965 onwards.

Internet News

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A brief look at digital images
In this column I will be exploring the world of digital images available online. This is, of course, a vast subject area and more the scope of a book or two, so this will be, of necessity, a rather brief personal exploration.

New Developments
One recent development has been the opening of the NewYork Public Library's NYPL Digital Gallery, which supplements their existing online image collections with a further 275,000 images. These images are organised into collections and were selected by curators from all divisions of the New York Public Library's four research libraries. Included in the searchable database are prints, illuminated manuscripts, photographs, maps, postcards, cigarette cards, menus, posters, and many other visual materials. One of the interesting things about this collection is not only its breadth of content but the ability to download the images free of charge for personal use. Additional images will be added to the collection with the aim of doubling its size to over 500 000 images over the coming months. This initiative has not been achieved overnight since planning for it commenced in 1999 with the curators selecting images from their collections based on the following criteria – "demand by the public, a desire to highlight particular collecting strengths of the Library, the fragility of original materials whose preservation would be aided by use of digital surrogates, large or ungainly formats that make materials difficult to handle in person, and interest in giving attention to worthy but little-known materials." (http://www.nypl.org/press/digitalgallery.cfm) The NYPL Digital Gallery can be found at http://digitalgallery.nypl.org.

Somewhat closer to home, The British Library has launched its own image collection online. Although this resource is pitched at the commercial image market such as publishers, TV researchers and the like, it is possible to download a 72dpi image for free if it is for personal or school use. The range of images reflects the depth of The British Library's collections (http://www.imagesonline.bl.uk/britishlibrary/).

Searching for images with text
This can be a real challenge to a searcher's methodology and approach. Major search engines like Google have a separate image search capability. Google claims to have one billion images indexed and available. It allows the use of Boolean terms and other operators from Google Text Search in the Advanced Image Search page, enabling complex searches to be undertaken.
One of the challenges is that so many images are held within databases, and so form part of the so-called 'invisible web' because they tend to be out of reach of search engine spiders.

An in-depth analysis of the performance of various search engines with reference to image retrieval was conducted by the Technical Advisory Service for Images (TASI) in October 2004. The results are available at http://www.tasi.ac.uk/resources/searchengines.html.

Of course, metadata is becoming increasingly important in the consistent presentation of information about images. Whilst Dublin Core elements

can be used to catalogue images, efforts have continued within the cultural community to create metadata elements specifically for images of works of art. The Visual Resources Association (VRA) has developed the VRA Core Categories which is a single element set that can be applied as many times as necessary to create records to describe works of visual culture as well as the images that document them (http://www.vraweb.org/vracore3.htm).

Searching for images by content
Research is being undertaken into using more visual cues to retrieve images. This is known as Content Based Image Retrieval (CBIR). It is the process of retrieving images from a collection on the basis of features (such as colour, texture and shape) automatically extracted from the images themselves. Whilst this is a technology still in its infancy, it has been shown to have relevance to particular fields such as patents and trademarks identification and police suspect identification. You can see how such a system works with the Digital Collection on the Hermitage Museum website (http://www.hermitagemuseum.org/fcgi-bin/db2www/browse.mac/category?selLang=English). This uses IBM's Query By Image Content (QBIC™) to enable you to search for an image based on its predominant colours or by drawing the shapes or composition you are looking for.

The Institute for Image Data Research has a research interest in this field and its website (http://www.unn.ac.uk/iidr/) contains further information about this area. Some areas of the website do not appear to be particularly current but are still useful for background information and links.

Creating your own collection of digital images?

I can do no better than to refer you (again!) to the excellent TASI website which contains a wealth, in both scope and depth, of articles covering this subject. They also run training courses for those involved in image digitisation projects, those who wish to capture images and those who wish to use digital images in learning and teaching.

Moving Images
There is a wonderful collection of a variety of digitised moving images at http://www.archive.org/movies/movies.php. Their aim is "to provide easy access to a rich and fascinating core collection of archival films".

It is from this digital collection that I leave you with a final gem – a wonderful short film from 1947, part of the Prelinger Archives, it is on the work of Librarians (http://www.archive.org/movies/details-db.php?collection=prelinger&collectionid=00526&from=landingReviews).

Reference Management

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Fancy it for free?
There are two new services which offer reference software for free to the academic community. Neither requires any special software although registration is essential.

CiteULike
Citeulike is a free service to help academics share, store and organise, with references being stored in your personal web library. The system captures the citation details from within the web browser. Further details from http://www.citeulike.org.