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Forensic Web Watch

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SUMMARY. The chosen subject for this month's review is toxicology and covers sites touching upon prescription and illicit drugs, analytical techniques and poisonous plants. It highlights a common problem to the user of the Internet. As more and more people log on and put their web site on for public access, searching for a single, comprehensive, all-encompassing single site becomes almost impossible. Many sites are repetitive or purely personal adverts. Unless you are recommended a site or you are prepared to wade your way through all the junk, one will never find the 'El Dorado' you are seeking. © APS/Harcourt Publishers Ltd 2001

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GENERAL OBSERVATIONS

When searching for toxicology sites on the world-wide web (WWW), one is confronted with an astounding number of 'hits', with over 200 000 sites on several well-known search engines. Most of these advertise the services of independent toxicology laboratories or an independent expert, the overwhelming majority of which come from the USA. This is a common problem on the WWW and can lead to frustration sorting out the adverts from the sites of information. The search we were performing hoped to identify sites that would be useful to a medical practitioner as either an *aide memoire* or to answer a particular toxicological query. Swamping by the advertising sites makes searching for useful sites time-consuming, and quite possible that some excellent sources of information were overlooked. Thus, try to use a search engine, such as Yahoo, which rank the usefulness of the sites which you identify on your search.

SOCIETIES

The London Toxicology web site is a site provided by analytical toxicologists. It provides a wealth of up-to-date information on current developments and discusses both the latest political and press information, as well as new drugs. The latest drugs to be discussed include dextromethorphan, gamma-hydroxybutyrate (GHB) and tiletamine. Each drug is discussed in a formatted and methodical way. The history, drug dose, duration of effect, metabolism and autopsy findings are of particular use to the medical practitioner, and are comprehensibly covered. For the analytical toxicologist the tablet form, gas chromatography/mass spectrometry (GC/MS) profile, colour tests and immunoassays are also presented. Each section is furnished with pictures and diagrams. References are also available. The main criticism of this site is that there is no information on common prescription drugs, and the site information is limited to latest updates.

Other society sites such as the Society of Toxicology and the American Board of Forensic Toxicology provide little in the way of intrinsic information, and concentrate mainly on information related to society activities (membership, meetings etc). However, some of these society websites do provide a member's only area, which may enable access to further information. The Society of Toxicology also allows linkage to its publications, Toxicological Sciences and The Journal of Toxicology and Applied Pharmacology.

PERSONAL PAGES

In keeping with other reviews, the personal web pages provide a plethora of useful information, although often presented in colourful and unconventional ways. Anil Aggrawal's Forensic Toxicology page discusses in depth a host of unusual poisons including Spanish Fly (an insect poison), boron and ratti seeds.

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The information is presented in the form of a conversation, taking place between an experienced forensic pathologist and an intelligent 15-year-old boy (Tarun). The conversations take place during an autopsy. The information takes a little time to extract from the prose, and will be of most use to medical practitioners.

The Web of Addictions contains little intrinsic information, but is a well-compiled list of Internet links, taking the user to numerous factual drug-related sites. Of particular use are the links to searchable databases of slang terms for drugs.

Botanical.com is a large site dedicated to herbs. It also contained the hypertext version of a book written in 1931 (A Modern Herbal). One section of this site is dedicated to poisonous plants with 44 plants discussed, although in little detail, and no pictures are available. There is also an extensive section on the latest news from around the world concerning the use of medicinal herbs. This site is of limited use, but is enjoyable to read.

Alan Barbour's Toxicology page greets you close to the top of several search engine lists, and is also appears frequently as a link from other sites. This site provides several useful links to individuals and societies, and is best used as a launch platform for delving into the Internet world of toxicology.

The Virtual GC/MS site allows one to participate in analytical experiments. However, this site provides little factual information about how GC/MS works, and there is minimal interaction. The site is worth a visit, however, if you have little experience using GC/MS.

EDUCATIONAL INSTITUTIONS

The NHS Regional Laboratory for Toxicology based in Birmingham (UK) is primarily aimed at those who will be using their services, but information is abundant and useful to all practitioners involved with toxicology. Guidelines for taking samples from a body, what preservatives to add and how to store the specimen until analysis are provided. Problems of contamination, redistribution and false results are also discussed. A review of each individual poison is available, including heavy-metal poisoning. One can also access molecular structures of each compound and sample reports are also provided with explanation. This site is particularly useful for those collecting specimens and provides an excellent revision of current techniques.

As with Botanical.com, Cornell University's (USA) Animal Science and Plants department provide a site dedicated to the poisonous plant. Although this site is designed for those seeking information on how toxic plants affect animals, human disease is also included. The site contains pictures and descriptions of the plants with there constituent poisons. This site is not yet complete, but will eventually provide excellent information. Links are available to other Northern American sites detailing poisonous plants.

The University of Akron's Department of Chemistry provide a web site featuring GC/MS. Although not from a toxicological point of view, it does provide some useful information on technique and methodology. This site is primarily aimed at chromatographers, but those with a little knowledge of toxicological technique may find this site useful.

INTERNET JOURNAL

As with previous reviews we try to keep you up to date not only with a variety of interesting sites to visit and bookmark upon chosen review subjects, but we also try to bring no innovations to your attention. This month we draw attention to a recently launched, purely Internet based journal, the Internet Journal of Forensic Medicine and Toxicology. Run by our old friend Anil Aggrawal, this quarterly journal contains peer-reviewed papers on subjects touching upon or related to forensic practice and experience.

CONCLUSIONS

Toxicology is covered comprehensively on the Internet, although finding the information does take time unless you have a list of favourite sites. One must be prepared to sample several sites to find exactly what you are looking for. No single site could entirely satisfy an interested party, and at the end of the day it may be simpler to refer to some of the basic texts of toxicology, rather than sift through the Internet, although this is undoubtedly a growing source of quality information. Due to the volume of 'hits' generated we accept that some excellent sites may have been overlooked in this review.

Table 1 Internet sites reviewed

http://www.londontox.org/
http://www.toxicology.org/
http://www.abft.org/
http://members.tripod.com/Prof_Anil_Aggrawal/
http://www.well.com/user/ woa/
http://www.botanical.com/botanical/mgmh/poison.html
http://userzweb.lightspeed. net/~abarbour/
http://www.lehigh.edu/~ingcms/ingcms.html
http://www.toxlab.co.uk/
http://www.ansci.cornell.edu/plants/plants.html
http://ull.chemistry.uakron.edu/gcms/index.html
http://www.freeyellow.com/members2/marygoldgupta/index.html