

# NetQuest

## Exploring Zoology

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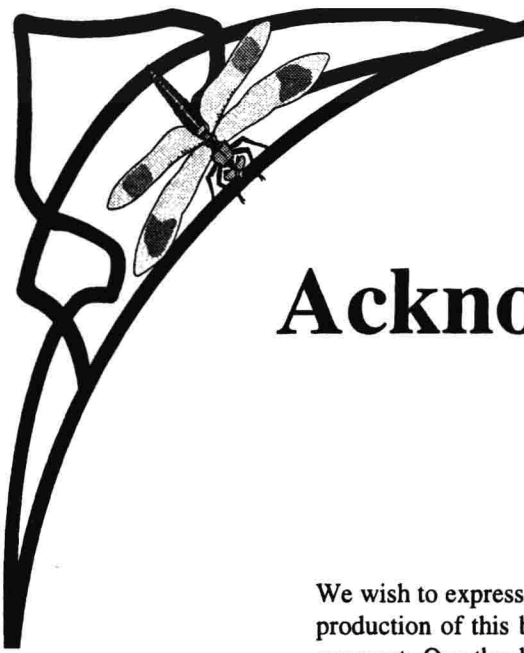
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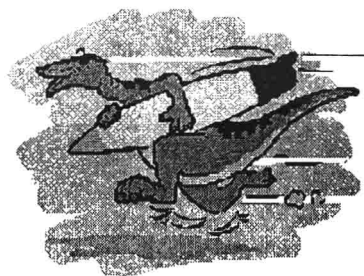
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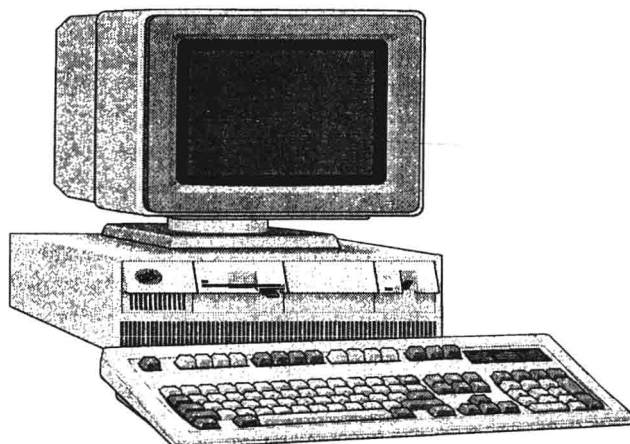
We wish to express our appreciation to those persons who helped in the production of this book by their service, advice, patience, and encouragement. Our thanks are extended to Shaun, Chad, Bryan, and Cindy Pendarvis, Matthew and Nancy Dardis, Cayl Bridges, Sandy Howell, Maria Lyles, Leslie Diamond, Adora Pozolinski, Carl Vogel, Donna Alonzo, and Rebekah Laurent.

# Surfing The Internet



## Getting Started

### Overview



In recent years the terms World Wide Web and Internet have become household words. Each day more individuals are accessing the new information super highway with awe and excitement. Scientists too, have found that this means of communications is efficient, exciting, and effective. This is particularly true in Zoology because of the overwhelming scope of information and diversity of subdisciplines within this ever-growing branch of biology.

The Internet links academic, private, military, government, and commercial interests primarily through networked computer systems. Since its inception in 1969, the Internet has grown from a national defense-oriented technology to a cosmopolitan tool of information exchange. The system has expanded from 23 host

computers in 1971, to 10,000 in 1987, to exceed 3.2 million networked host computers in 1994.

Network participation affords a convenient and unobtrusive way for students to learn. In addition, it allows communication with experts in various fields as well as with fellow students, exchange of data, and a graphical interface. With this immediate access to enormous amounts of information, the Internet may lead to the democratization of science. Students at isolated stations may conduct research and communicate on a scale not possible before the Internet.

It is time to embark on a journey that will touch the future and change your academic life. Welcome to the Internet.

#### Tips for Beginners:

1. Do not be intimidated by computers.
2. Experiment with and learn the capabilities of your hardware and software.
3. Do not limit your use of the Internet to academics.
4. Do not be bashful. Ask questions.
5. Have fun! Make new friends and meet new colleagues! Share your hobbies with others over the net.

*"The whole of the developments  
and operations of analysis are now capable  
of being executed by machinery....  
As soon as an Analytical Engine exists,  
it will necessarily guide  
the future course of science."  
Charles Babbage*

## Activity I

### Setting up for the journey.

1. Where did you go to surf the net?
2. Describe the hardware that you used during this experience.
3. Was entering the Internet simple?
4. What is your university's homepage address?
5. Describe the homepage of your university's biology department.

## Activity II

### Just for practice.

1. List the available search engines.
2. Using Yahoo, conduct a search for Charles Darwin.
  - A. How many references did you find?
  - B. How can you limit your search to find where Darwin lived?
  - C. List the URL for Darwin's home.
  - D. Where is his home located and how much does it cost to visit?
  - E. Where is the Darwin Research Station?

## Activity III

### Playing Around

1. What is the URL for the homepage of the biology department at Harvard?
2. What is the URL for the homepage of the National Institute of Health?
3. Describe the format of the On-Line Mendelian Dictionary.
4. While in the above site, look up and describe the following genetic disorders: Jumping Frenchmen of Maine Disorder, Cystic Fibrosis, and Cat's Eye Syndrome.
5. Find the Museum of Paleontology at Berkeley and describe the current exhibits.
6. From the above site look up and describe *Archaeopteryx lithographica*.
7. When is the next shuttle launch? How did you find out?
8. Locate The Dictionary of Cell Biology and describe the makeup of microtubules.
9. What can you learn from The Tree of Life?

10. What kind of information is available in the Electronic Zoo?
11. Find and describe in detail the site Nanoworld.
12. Find a cool biological site, give its URL and describe the site in detail.
13. List several sites that might help you if you have a sick snake.
14. Describe a site that includes an electronic frog dissection.
15. List the URL's to several popular science magazines that are on-line. How do they differ from the written magazine?
16. How can you explore career opportunities in the biological sciences?
17. List several on-line distributors of biological supplies.
18. How can you join organizations to save the dolphins?

## In Conclusion

1. Did you find surfing the net easy?
2. Did you find surfing the net exciting?
3. How can the Internet be helpful to you in future academic endeavors?
4. How can the Internet be useful to you in other ways?
5. What did you like and dislike the most about using the Internet?

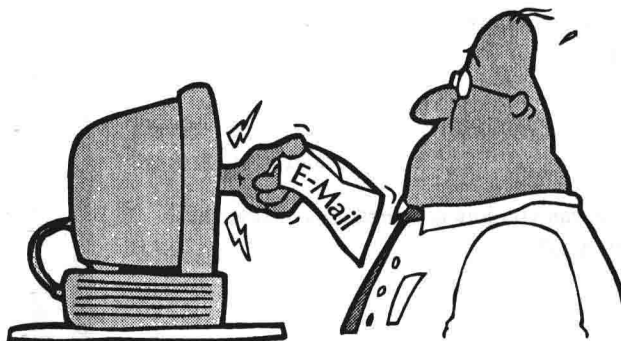
*"The computer is the most significant of human inventions because it complements the human brain in precisely the two ways which limit the brain--- slowness and boredom..."*

Colin Pittendrigh, English Biologist

## Important Terms

The following terms may be useful when using the Internet.

<b>Browser</b>	Software that lets you connect to other Internet sites. Some are graphical like NetScape and Mosaic which let you see formatting, images, sound and video and others are text only such as Lynx which lets you only read the text at the site.
<b>Bulletin Board</b>	Used to post and receive messages to various groups of people interested in common areas of interest such as a hobby.
<b>CD ROM</b>	Compact Disk used to store large quantities of information on one disk.
<b>CPU</b>	Central Processing Unit.
<b>Domain</b>	The last term in an address such as 'edu' for education or 'com' for commercial.
<b>DOS</b>	Disk Operating System. Software that runs the computer by telling it what to do when you send a command.
<b>Download</b>	The electronic transfer of information from one computer to a local computer.
<b>E-Mail</b>	Electronic mail sent by computer.
<b>FAQ</b>	Frequently Asked Questions File
<b>File Server</b>	The machines that run networks.
<b>FTP</b>	File Transfer Protocol is used to transfer files.
<b>Flame</b>	Usually a criticism in inflammatory language.
<b>Gopher</b>	Information management system that allows you to search for information by using menus.
<b>HTTP:/</b>	Hyper-Text Transfer Protocol.
<b>HTML</b>	Hyper Text Markup Language which lets the browser see the formatting when they access a URL.



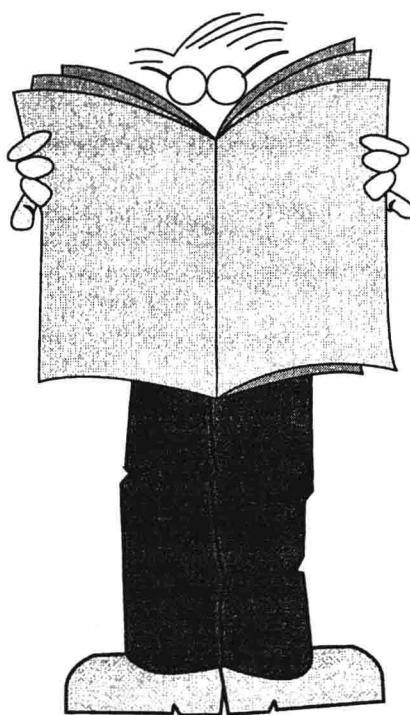


<b>Icon</b>	A graphic representation on the computer screen.
<b>IRC</b>	Internet Relay Chat allows people to talk in real time.
<b>Internet</b>	Collection of computer networks that are all interconnected.
<b>Listserv</b>	Software used to manage electronic discussion lists.
<b>Lurking</b>	Reading a mailing list discussion or newsgroup without participating.
<b>Menu Driven</b>	A system that allows the user to choose from a menu rather than typing in commands.
<b>MODEM</b>	A device that enables computer communication through telephone lines.
<b>Moderator</b>	The person in charge of a network discussion group.
<b>MUSE</b>	Multiple User Science Education. A text based virtual reality where players interact.
<b>Mouse</b>	A peripheral device hooked to a computer and used to input commands.
<b>Monitor</b>	The video output device for the computer.
<b>Navigate</b>	Moving about within a virtual environment.
<b>Netiquette</b>	Etiquette or manners on a computer network.
<b>Network</b>	Groups of computers that are linked so they can exchange information.
<b>Postmaster</b>	The person responsible for answering questions about users and e-mail at a site.
<b>Snail Mail</b>	Mail that the U.S. Post Office delivers.
<b>Telnet</b>	Allows user to interact with another computer as if directly connected.
<b>Thread</b>	A series of posts to a discussion group all on the same subject.
<b>URL</b>	Universal Resource Locator. The address for a site located on the Internet.
<b>WWW</b>	Allows users to create, edit, and browse hypertext documents.



# Newsgroups

A newsgroup is a platform for exchanging ideas on a particular subject. News posts are like e-mail except they are sent to one place where anyone can read them and comment. You can go to a newsgroup to ask questions, get ideas, and learn about a specific topic. It is a good idea to read a newsgroup for about a week before posting to it. Read the FAQ's to make sure you are not repeating a question that has already been asked. You may want to check out several of the following science newsgroups.



bionet.general

bionet.cell.biol

bionet.genome.chromosomes

bionet.journal.content

bionet.immunology

bionet.metabolic-reg

bionet.microbiology

bionet.molbio.evolution

bionet.molbio.hiv

bionet.molbio.proteins

bionet.molecules.peptides

bionet.molbio.genebank

bionet.molec-model

bionet.organisms.parasitology

bionet.population-bio

bionet.biology.symbiosis

sci.bio.herp

bionet.info-theory

bionet.protista

sci.bio.ecology

sci.bio.microbiology

sci.bio.systematics

sci.bio.technology

sci.med

sci.answers

sci.bio.entomology.misc

bionet.announce

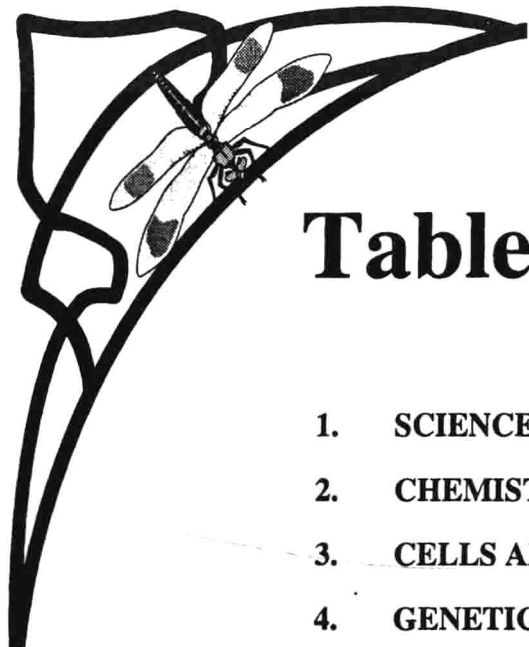
bionet.biology.vectors

bionet.ecology.physiology

bionet.molbio.molluscs

bionet.protista

bionet.sci-resources



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7. INVERTEBRATES
8. THE CHORDATES
9. ANIMAL SYSTEMS
10. FUNDAMENTALS OF ECOLOGY

*Science and Zoology***OVERVIEW**

Classically, science has been defined as an organized body of knowledge that attempts to explain natural phenomenon. However, this definition does not recognize that science is also a dynamic process based upon observation, experimentation, and information processing. In the past thirty years, science has been characterized by ever accelerating changes; including a flood of information, ideas, and unifying concepts. In order to be successful in science, students must be able to balance classical as well as contemporary science in a meaningful manner.

The nature of science is a synthesis of content, process, and attitude. Without content, the student cannot understand the grandeur of the universe. Without process, the student cannot participate in and experience the excitement of discovery. Without a healthy scientific attitude, the student cannot value content and cannot appreciate the act of discovery.

Biology is the study of living things. One of the major subdisciplines of biology is zoology. Primarily, zoology is the study of animal life. It incorporates every aspect of animals from anatomy through ecology. In order to pursue careers in agriculture, biology, medicine, science education, veterinary medicine, and other scientific fields, a solid foundation in zoology is imperative. This solid foundation is also essential for nonscience majors in their preparation for becoming responsible citizens.

As we approach the formative years of the new millinium, there will be an increased emphasis in science mathematics, and technology education. In order to flourish, society must recognize the importance of these fields and make every effort possible to provide students at all levels the best possible education.

**URLS**

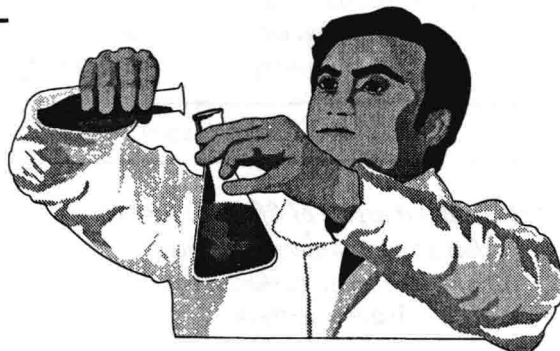
## 1. Society for Amateur Scientists

<http://www.thesphere.com/SAS/>

In this site for dedicated science lovers, one may participate in an electronic science forum, read about research opportunities for amateur scientists, find science fair suggestions, link to other science groups, and participate in free advertisement for buying, selling, or swapping scientific equipment or supplies.

**ACTIVITY:** A. List three organizations that promote scientific literacy.

B. Discuss two research opportunities for amateur scientists.



2. The Electronic Zoo

**<http://netvet.wustl.edu/e-zoo.htm>**

An incredible site that serves as an electronic link to specific sources about animals and veterinary science.

ACTIVITY: Why is this site valuable to animal lovers?

3. A Virtual Tour of the Museum of Science, Boston, Massachusetts

**<http://www.mos.org/mos/homepage.html>**

The museum serves as a fascinating site for exploring science. Included in the virtual tour is a section on dinosaurs, an archaeological dig, a rainforest exhibit, information on biotechnology and many more fascinating activities.

ACTIVITY: A. What is the value of a site such as the one that you just explored?

B. Describe your favorite activity.

4. Exploratorium Museum

**<http://www.exploratorium.edu/>**

This site is located in the Palace of Fine Arts in the marina district of San Francisco. It includes electronic exhibits, science news and resources, and a learning studio.

ACTIVITY: What other resources are available at this site?

5. Miami Museum of Science

**<http://www.miamisci.org/>**

This virtual museum features a zoology and wildlife center, as well as, a guide to the dinosaur families.

ACTIVITY: Critique one of the feature articles in this electronic source.

*"The saddest aspect of life right now is  
that science gathers knowledge  
faster than society gathers wisdom."  
Isaac Asimov*

6. "The Philadelphia Inquirer" at the Franklin Institute

<http://www.phillynews.com/>

This site features stories covering current topics in science and medicine. Reprints of past stories are also available. This site is valuable for background research.

ACTIVITY: A. Discuss one of the hot topics in science or medicine presented in this site.

7. Strange Science: Planet Science

<http://www.newscientist.com/ps/strange/index.html>

In this site, you can ask and find answers to questions about the strange phenomena that occur in our everyday world.

ACTIVITY: How can this site be valuable to a young scientist?

8. Natural Perspectives

<http://www.rahul.net/nature>

This site serves as an introduction to the Biosphere. In addition, the five kingdoms of life can be explored with text and graphics.

ACTIVITY: List and give three representative members for each of the five kingdoms.

9. New Scientist: Planet Science

<http://www.newscientist.com/>

This site was chosen as the the winner of the Best Web Site Award by 1995-Internet Magazine and serves as the world's leading science and technology weekly. This site includes news of the week in science and technology, specials, and science gossip.

ACTIVITY: A. What is the latest science gossip?

10. Internetting for Biologists and Others

**<http://www.fsci.umn.edu/fscn5111/5111.html>**

This site serves as a comprehensive guide to understanding the internet for those in the biological sciences.

ACTIVITY: A. What does the future hold for using the Internet in the biological sciences?

11. Scanning Electron Microscope

**<http://www.mos.org/sIn/sem/intro.html>**

This site includes information on the scanning electron microscope and a fascinating image gallery.

12. Geology and Geologic Time

**<http://www.ucmp.berkeley.edu/exhibit/geology.html>**

This site provides the user with an intriguing journey through geologic time.

13. The Evolution Exhibit

**<http://www.ucmp.berkeley.edu/history/evolution.html>**

Developed by the Museum of Paleontology of the University of California at Berkeley, this site serves as a comprehensive survey of evolutionary biology, paleontology, geologic time, and evolution.

ACTIVITY: A. Why is evolution considered the unifying principle of biology?

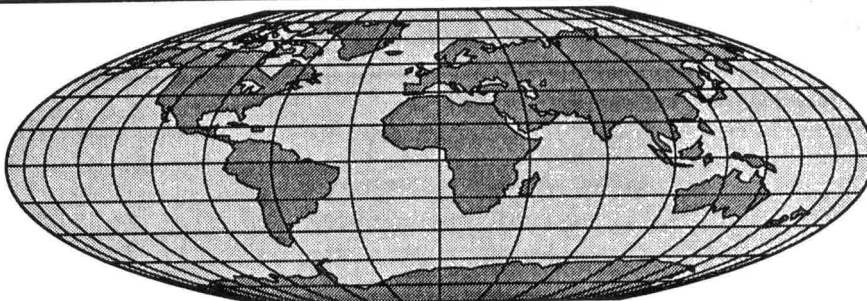
B. What is paleontology?

14. MBG Biome Map

**<http://www.mobot.org/MBGnet/biome/>**

This site provides the user with a graphical interface on biomes. Included in this site is information about the world's biomes and the organisms that live in these regions.

ACTIVITY: List and describe the major biomes.



15. Paleontology Without Walls

**<http://www.ucmp.berkeley.edu/exhibit/exhibits.html>**

This site provides links to phylogeny, geologic time, and evolutionary thought.

ACTIVITY: A. Why is it important to study geologic time in a basic zoology course?

16. The Tree of Life

**<http://phylogeny.arizona.edu/tree/phylogeny.html>**

This site contains information about the phylogenetic relationships, characteristics of organisms, and biodiversity.

17. Biodiversity, Ecology, and the Environment

**<http://www.bio.uci.edu/academic/upgrad/resource.html#TOC25479>**

This useful site supplies the user with general information about environmental science and diversity.

18. Cells Alive

**<http://www.comet.chv.va.us/quill/>**

This intriguing site contains video microscopy of living cells, bacteria, protozoans, and parasites. In addition, 3-D biological animations are found at this site.

ACTIVITY: Are the 3-D animations valuable to the user?

19. Educational Hotlists: Animals

**<http://www.fi.edu/tfi/hotlists/animals.html>**

Organized list of animals, background information, and images are presented in this site.

ACTIVITY: What do whales, dolphins, bats, and shrews share in common?

20. Frank Potter's Science Gems - Life Science

**<http://www-sci.lib.uci.edu/SEP/life.html#5>**

This site is a collection of interesting links to many biology topics.

ACTIVITY: Evaluate the value of this site to students of all ages.

21. History of Science, Technology, and Medicine

**<http://www-sci.lib.uci.edu/SEP/life.html#5>**

This site allows the user to interface with a comprehensive history of science, technology, and medicine.

ACTIVITY: A. Where can information be found on Barbara McClintock?

B. Where is this site located and who is the webmaster?



22. Discover magazine

<http://www.eneews.com/magazines/discover/>

Discover magazine online includes the same great features of the hard copy plus additional information available to only on-line users.

ACTIVITY: How does this version compare to the magazine?

23. Nanoworld

<http://www.uq.oz.au/nanoworld/nanohome.html>

Electron micrographs of a variety of materials and organisms can be found at this fascinating site.

24. Niel's Timelines and Scales of Measurement

<http://xalph.ast.cam.ac.uk/public/niel/scals.html>

This site includes a variety of interesting timelines on: Science, Technology, Evolution, and Cosmological Time.

ACTIVITY: Discuss the contributions of A. R. Wallace.

25. Science Daily

<http://www.sciencedaily.com/index.htm>

This site contains interesting science news from many labs and technical centers throughout North America.

26. Popular Science

<http://www.popsci.com>

The magazine *Popular Science* is now online and provides the user with hours of interesting reading.

ACTIVITY: In your opinion, are the on-line magazines a valuable resource?

27. Internet 1996 World Exposition

<http://park.org/main.text.html>

This site is filled with interesting science information.

