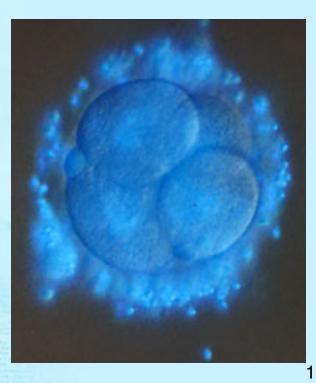
### Cell Structure and Function



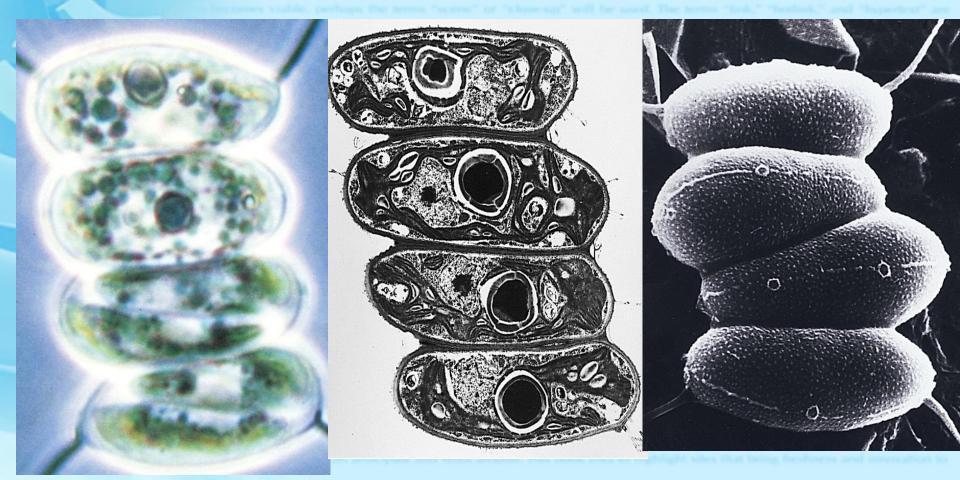
Loren Another Stationers

recomes stable, perhaps the terms "scene" or "klose-up" will be used. The terms "link," "hotlink," and "hypertext" are by digital content, evoking new linear experiences, as does the term "Web" Iseff. It is exciting to know that there are cadres of individuals, young and old, who are naming a living designing and shaping the Web of the future. Surely that Web will contry different from today's Web.

Whele designees device their tools from print publishing applications such as Adobe PageMaker or QuarkXPress, which have write to add HENR. (FyperText Markup Language) tags for Web publishing, or every to add multimedia smend and user intercapability. Multimedia programs such as Macromedia Director have created applications that will strip files down to Webtrate: Macromedia's version of this is the Shockounce/Atterburner combination. Even basic word-processing programs have applications to add HTML tags to plain vanifia documents. Photoshop offers the option to save an image as a GEF (Graphic erge Format), in essence, the same suite of tools that faeled the desktop revolution is also driving the 72-tipi revolution.

#### I. Types of Microscopes and Their Advantages and Limitations

Resolution= the ability of the microscope to show two close objects as separate in the image. Magnification= the increase in the size of the **image** when compared to its real life size.

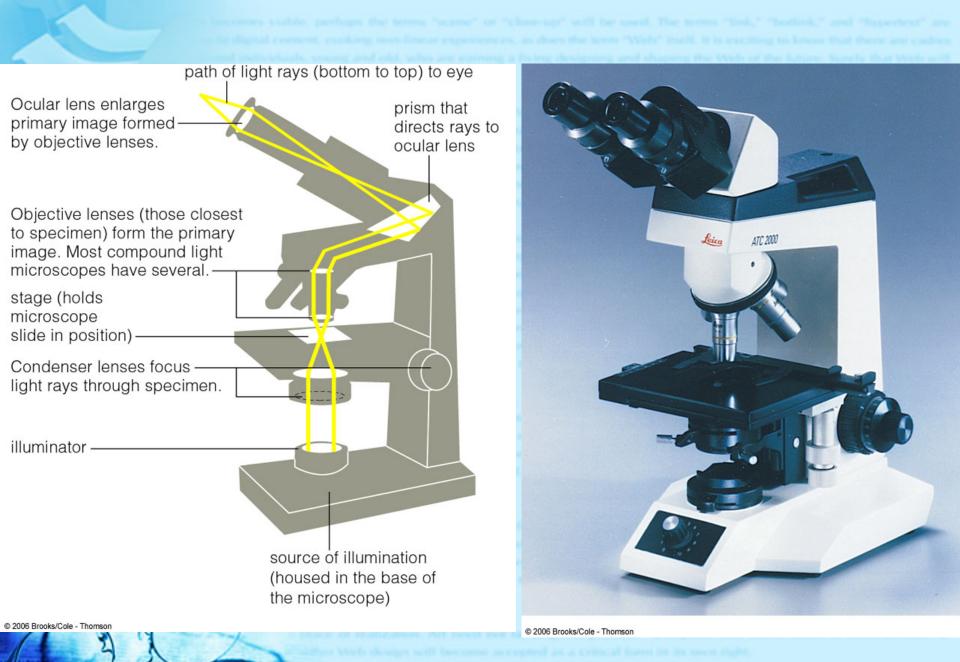


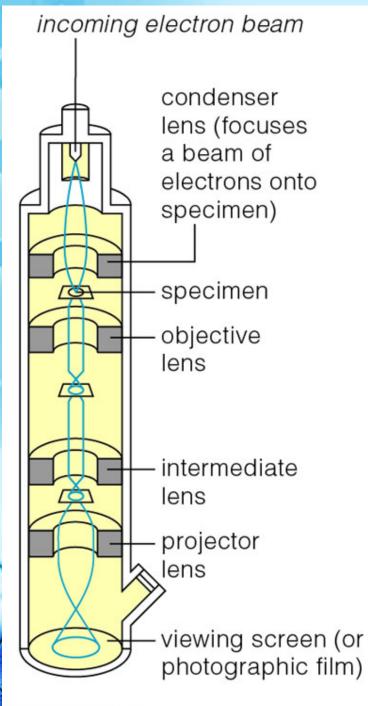
Light microscope

ALGAE

Transmission Electron Microscope (TEM)

Scanning Electron Microscope (SEM)





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- In dust	Light	Transmission	Scanning Electron
	Light	Electron	Microscope (SEM)
	ligners derive their tools from pr	Microscope (TEM)	Pagettalar or Quark/XPress, which have
Energy Source	<ol> <li>Multimedia programs such a accornedia's version of this is the</li> </ol>	Macromedia Director have created appl Shockscare/Alterburner combination. Ex	mations that will strip files down to Web- on basic word-processing programs have
Max. resolution	trail. In essence, the same sume	to documents. Photoshap offers the op- of tools that facled the desktop revolution	on to save an image as a GF (Grapher o is also driving the 72-dpi revolution.
Max. magnification	namie design environment. Wh nhmology is in constant fluxa	to the fassic Web design tools are those to are being improved, new features also	used in print publishing and multimedia or being added. The basic HTML tag law
Type of image	store the availability of stable in	Perfection and Advancement Principle windo	and Explorer are the browners of chemics, a page. New processes have been devel-
Limitations	1.	and the server company. If the server is to	rought in-house, then the design firm can ling on the number of hits they expect to
	2.	2. 3.	widers and pass the costs on to the client.
	second a challinge for designer	4.	and video professionals produce a static professionals create shifting sand charge
	of links form and there to income	5.	me obsolete and tired easily, a tendency tes that being fresherers and innexation to
,		6	
Advantages	1.	1.	ective use of color and shape as well as
March .	2.	2.	images, sounds, and animations small to
	4.	red not be tangible, physical—it require	
	5.	serve accorpted as a critical form in its os	6

nesed. The terms "link," "hodiaris," and "hypertext" are "Web" itself. It is exciting to know that there are cadres and shaping the Web of the future. Surely that Web will

#### What is this?

#### What kind of microscope was used?

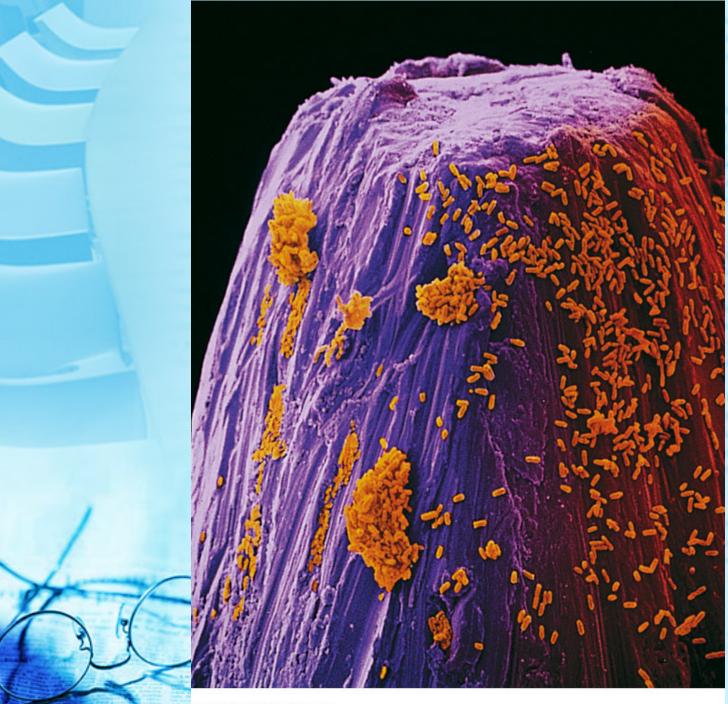
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Gava, Shockwaree, Real-Audin, Virtual Reality Modeling, Whereas print and video professionals produce a static relation—Wells professionals create shifting sand duries rige. Sites became obsolete and tired easily, a tendency s to highlight sites that being fresheres and increation to

to detail, not just on the horse page, but on the solution racterized by effective use of color and shape as well as multiple technology—schether it's lawa scripting. Cif 8% he total size of images, sounds, and animations small to

ical-it requires shift and a desire to continuescate. It I have in its own right.

7



"Institute," and "Inspectrust" are ing to know that there are cadres. the fature. Sarely that Web will

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1," "Buillink," and "hypertext" are ting to know that there are cadres of the future. Surely that Web will

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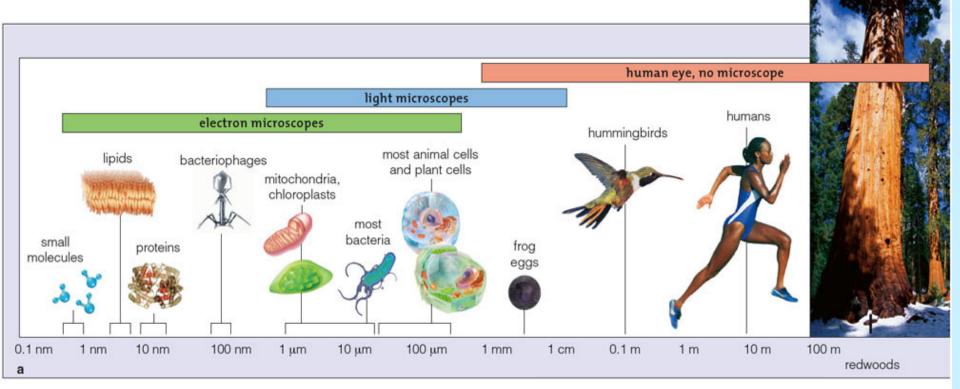
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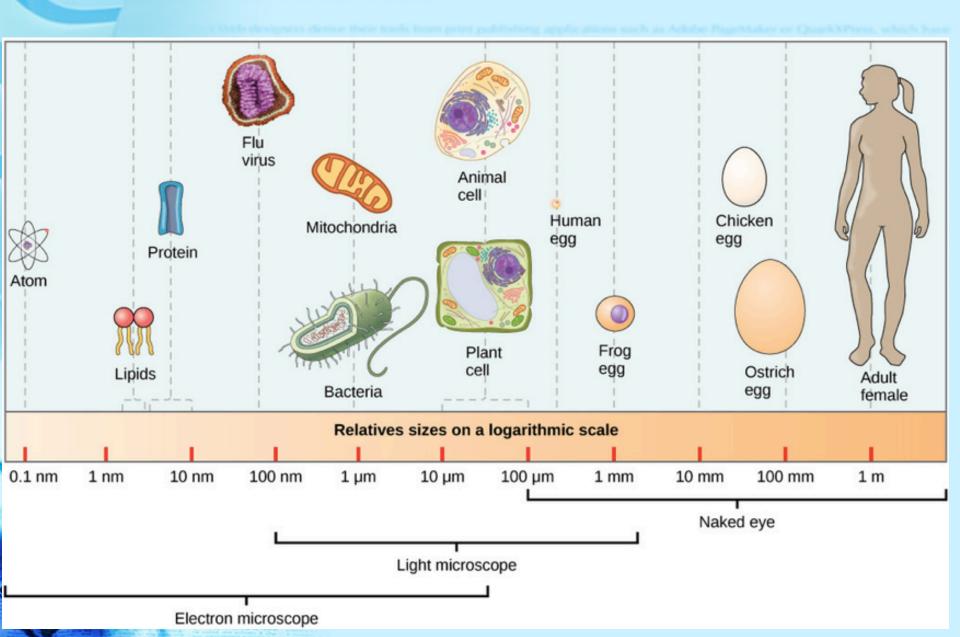


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**Relative Sizes of Things!** 

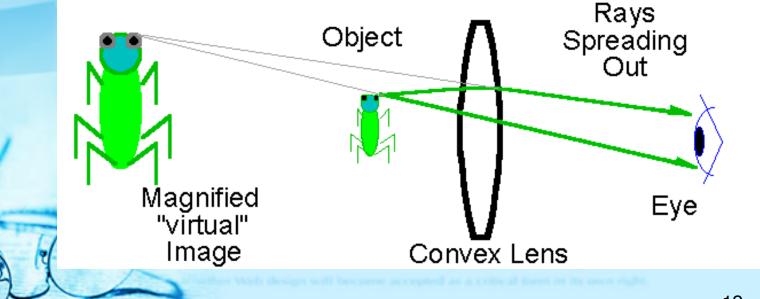
ne page, but on the subsecolor and shape as well as 105 Java scripting, Gililita 6, and animations anall to

ar of realization. Art meet not be tangible, physical—it requires skill and a desire to communicate, it or Web design will become accepted as a critical form in its own right. ecomes visible, perhaps the terms "scame" or "close-up" will be used. The terms "link," "holink," and "hypertext" are to digital context, evolving non-linear experiments, as does the term "Web" Exelf. It is exciting to know that there are cadres of individuals, scoring and old, who are earning a fiving designing and shaping the Web of the future. Surely that Web will contry different from today's Web.



#### II. History of Cell Theory

## 1500s- Convex lenses with a magnification of about 5x



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n the subsee as well as ing, Cill Bha

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to digital content, evolving non-linear experiences, as does the term "Web" Itali. It is exciting to know that there are cadres of individuals, young and old, who are earning a living designing and shaping the Web of the future. Surely that Web will

#### 1590- Jansen- Dutch, invented the <u>compound</u> microscope- poor quality



Fig. 1. Zacharias Janssen, the Inventor of the Compound Microscope. (From "De Vero Telescopii Inventore.")



The basic HTML tag law e the browners of choice, occurs have been develconsiderably. Hardware then the design firm can dor of hits they expect to the costs on to the chemi-

Virtual Readity Modeling microads produce a static rate shifting sand chanes f tired easily, a tendency deness and inecoation to

r page, but on the solveplot and shape as well as it's lawa scripting. Cill/Bha and animations small to comments stable, perhaps the terms "scene" or "close-up" will be used. The terms "lock," "holisic," and "hypertext" are a digital context, exciting non-linear experiences, as does the terms "Web" itself. It is exciting to know that there are cadres of individuals, scoing and old, who are naming a living designing and shaping the Web of the future. Surely that Web will conting eliferent from today's Web.

#### 1662- Robert Hooke- English physician, observed "dead" cork cells

#### 1665- Hooke published sketches





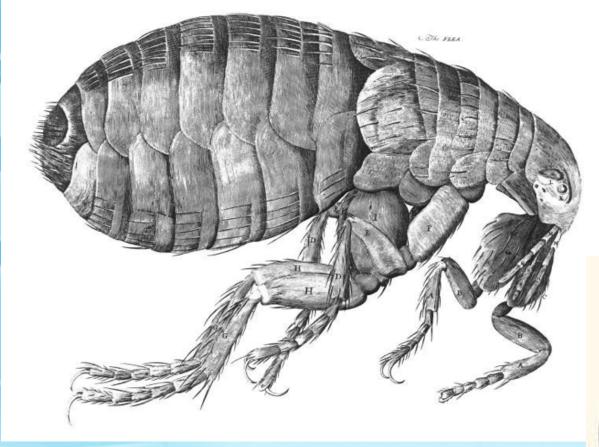
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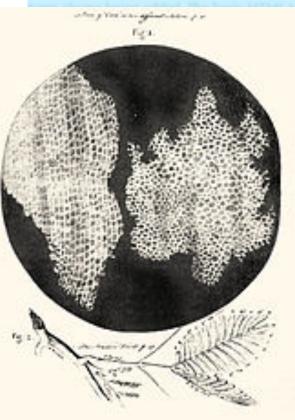
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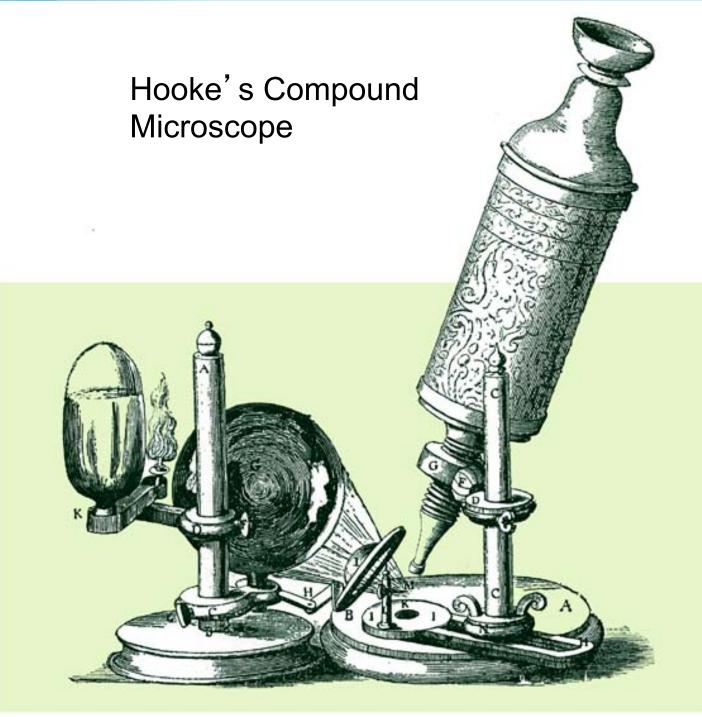
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The terms "link," "hollink," and "hypertext" are b" itself. It is exciting to know that there are cadres happing the Web of the future. Surely that Web will

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re those used in print publishing and multireadia.





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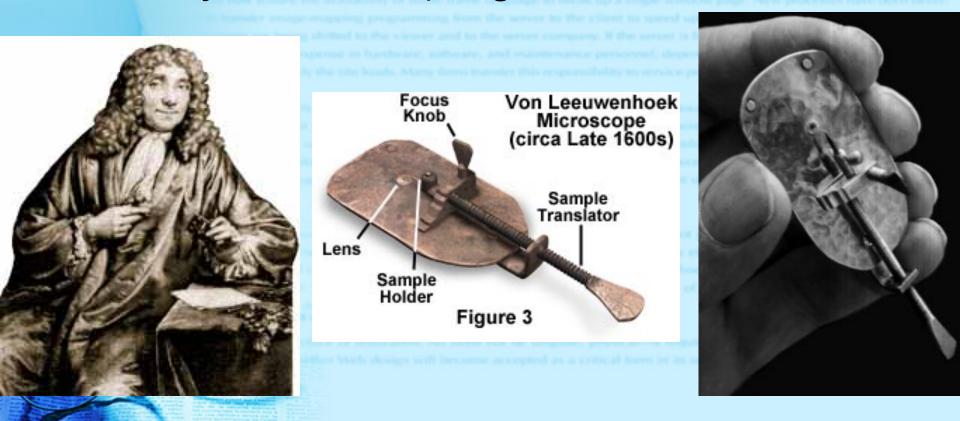
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correr page. Inst on the subseof color and shape as well as how it's lawa scripting. Citf@ha ruls, and animations small to

a desire to communicate. I

## C. 1673- Antony van Leeuwenhoek- Dutch microscope maker and merchant, observed and described *living* microscopic (and many unicellular) organisms

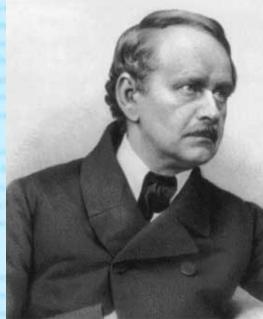


#### 1838- Robert Brown- Scottish physician and botanist, named the nucleus and noted its presence in all cells



e tangible, physical—it requires skill and a desire to contentaticate. It pled as a critical farm in its own right.  1838- Matthais Schleiden- German botanist, declared all PLANTS made of cells, 1 of 3 credited with the origination of the cell theory.

Bamboo Cross section



Library of Congress

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> finality. Modeling produce a static iting sand during only, a tendency red increastion to

> > t on the subsetupe as well as ripting. Cif@ta origins. small to

physical—it requires shill and a desire to contributicate. It ritical harm in its own right.

#### 1839- Theodor Schwann, German zoologist declared all ANIMALS made of cells, 1 of 3 credited with the origination of the cell theory.



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It to speed up download times considerably. Hardware the server is brought in-bouse, then the design fire car connel, depending on the number of hits they expect to pass service previders and pass the costs on to the client

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it requires shill and a desire to contentaticate. I s in its user right. 1855- Rudolph Virchow- German physician and professor, he popularized cell theory and was the 3rd man associated with cell theory.

"Think microscopically."

telesis page. News processes have been develtop downlead times considerably. Hardware is brought in-bound, then the design fore car peopling on the manifact of hits they expect to providers and pass the costs on to the chemi-

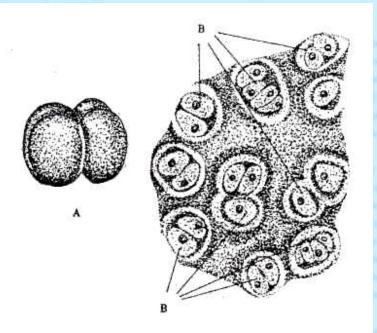
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used in print publishing and multimodia, rys being added. The basic HTML tag faremet Explorer are the browners of choice, or page. New processes have been develdownlead times considerably. Hardware rought in bouse, then the design fore can ling on the mutilier of hits they expect to widers and pass the costs on to the client.

#### Omnis cellulae e cellulae.

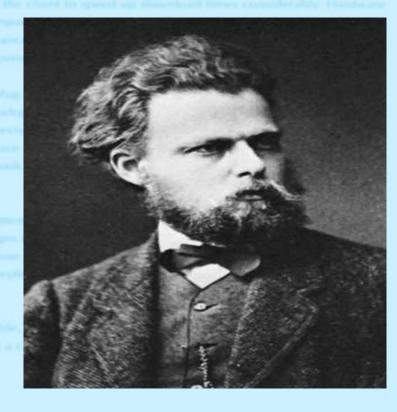
#### All cells come from pre-existing cells.

ecomes visible, perhaps the terms "scene" or "close-up" will be used. The terms "link," "hotlink," and "hypertext" are to digital content, evolving non-linear experiences, as does the term "Web" Itself. It is exciting to know that there are cadres of individuals, young and old, who are earning a fiving designing and shaping the Web of the future. Surely that Web will cantly different from tockey's Web.

#### 1880-August Weismann- German biologist.

ing applications such as Adube PageMaker or QuarkXPress, which have gs for Web publishing, or even to add multimedia second and user interto Director have created applications that will strip files down to Webe/Afterburner combination. Even basic word-processing programs have ets. Photoshop offers the option to save an image as a GIE (Graphic

Germ cells are the root of all inheritance.
 All traits of offspring, are determined at beginning of life. No soft inheritance.



## 1931- Janet Plowe- American scientist, cell membranes are a physical structure- NOT an interface between 2 liquids

Temperature = 90 C

Here you can see a lens of melted wax on the bubble surface, the bubble is about 100 µm across.

> Here is a close-up of the lens, numerous emulsified drops are visible inside



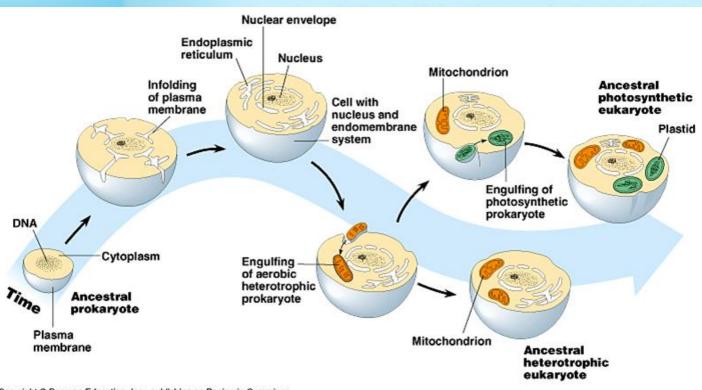
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> ity. Modeling above a static Land shares La tendency innovation to

tion the subsetape as well as ripting. Cill Bha ations amail to

enterna de la composition de la composi

# 1970- Lynn Margulis- American scientist, certain organelles were once free-living organisms themselves.





too use of color and shape as well as p--schethor it's lava scripting. Cit'8%a iges, sounds, and animations small to

whill and a desire to communicate, I cright.

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## III. Cell Theory

All living things are composed of cells or cell products. Only the division of pre-existing cells forms new cells. The cell is the minimal or fundamental unit of life; the chemical reactions of life take place in cells.

> or of realization. Art ment not by tangible, physical—it requires skill and a desire to contributicate. It or Web design will become accepted as a critical form in its over right.

IV. Cell Types
PROKARYOTIC
Pro = before
Karyo = nucleus
Bacteria

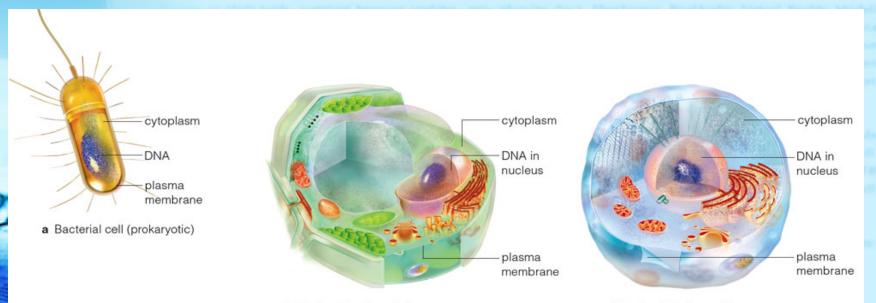
 EUKARYOTIC
 Eu = true
 Karyo = nucleus
 Animals, Plants, Fungi, Protists





## V. Cell Comparisons

- Excellent table on page 199 in textbook for review.
- Check your illustrations and functions as we complete the table!



b Plant cell (eukaryotic)

c Animal cell (eukaryotic)

Cell Feature/ Cell	Prokaryotic	Eukaryotic	
Туре	y slitterent from today's Web.	Plants	Animals
Typical size	Insigners denise their touts truth print ; n and HERME difuger first Markage Lang dify. Multimedia programs saids as Mo Marconnectia's service of this is the St	udbilishing applications such as Adobe agent tags for Web publishing, or even connectia Director have created appli- to for not (Alterburner combination, Ex-	PagerValue or Quark/Press, which has to add esofteneedia second and core inte- cations that will strip files down to We in basis, word, processing programs ha
Type of genetic material	to add HTML tags to plain samilla- privat), in ensemble, the same sube of t	tocuments. Photosihop offers the upti- ools that facted the desktop revolution he basic Web design tools are those o	in to save an image as a GiF (Graph is also driving the 72-dpi revolution, and in print publishing and multirood
Location of genetic material	chechnology is in constant flaw salwa is being updated, as are becomers. N feature the availability of stable frame or image-mapping programming from	*	*
Cell Membrane	the being childred to the viewer and to locable expense in hardware, software in quickly the site haads. Many forms to	the server company. If the server is the , and maintenance personnel, depend ansier this responsibility to service pro-	region the number of hits they expect riders and pass the costs on to the clien
Cytoplasm	a in Welds books, considered between an a present or challinger for designees an appendix only with the intent of creat	clatters, many plagning (land, Shockware) of comment development, Whereas print a rug a mess, "revised" edition-Wiele p	c) Read-backies, Victoral Readery Models and video people-vicenals produce a star endeviced of create shifting wand during a start of the start o
Ribosomes	tion team can anticipate and work a	respect. This block tries to highlight site	n that being fresherers and increation
Cell Wall	They feature inconstine, well a and content. They make efficient or a final/hadies-mbile at the	neccuteri designs characterized by effi- and sensible use of available technol- same time keeping the total size of in	ctive use of color and shape as well agrowbether it's lawa scripting. Ciff@ nages, sounds, and animations small
Capsule	<ul> <li>Figure of realizations. Art most</li> </ul>	not be tangible, physical—it require	c shill and a desire to contentraticate.
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#### Table continued....

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Cell Feature/ Cell Type	Prokaryotic	Eukaryotic		
	add HEME Officer first Markup Lang	Plants	Animals	
*Mitochondria (pl)	inconnection's version of this is the Shi to add HTML tags to plain vanilla- trati. In essence, the same walle of t	ex-konsule/Alberbarrier correlationation. Ex- locuments: Photosihop offers the apt sole that facted the desktop revolution	in basic word-processing programs have on to spec an image as a GH (Graph is also driving the 72-dpi revolution.	
*Chloroplasts	namic design environment. While the	he havis Web design tools are those s is being improved, new features alway	and in print publishing and multimed a a being added. The basic HTML tag for	
Single membrane bound organelles RER	share the availability of stable frame image mapping programming from theory shifted to the viewer and to able expresse in hardware, software quickly the site baads. Many forms to	Language to break up a single window the server to the client to speed up to the server company. If the server is he and maintenance personnel, depend protective this responsibility to service pro-	e page. News processes have been deal boundcast times considerably. Harrhold regist in house, then the design time of rig on the mandate of hits they espect siders and pass the costs on to the click	
SER Golgi app. Lysosome	or World botchs, consistant between up present a challenge for designers at police only with the intent of creat of links form and flow to incompto	dates, new plag-ins days, Shockway d content developers, Wherman print, ing a news, "revised" editors—Wels ( ate and evolution change. Siles her re-	e, Real-Audia, Vietnal Realey Alachelos end video peolesianals produce a stat mitraionals create shifting sand charte- a obsciete and treat each, a tenders	
Central vacuole	team can anticipate and work a	reasond. This book tries to highlight sit	n that bring fresherers and increasions	
A	They feature inconstine, will a rest content. They make efficient the of features and backs without crashing.	nee utof designs characterized by effi- and sensible use of available technical same time keeping the total size of h	other user of color and shape as well a age	
Centrioles	- there of realization. Art ment	reat for tangitule, physical—it require r accepted as a critical form in its or	30	

## VI. Other Special Features

#### Cytoskeleton

Plasma membrane -

Ribosomes -

Rough — endoplasmic reticulum

microfilaments

## intermediate filaments

Mitochondrion

microtubules

g and multimodia, nic HTML tag lanconners of choice, chave been develfecably. Hardware we design firm can hits they expect to to on to the chemi.

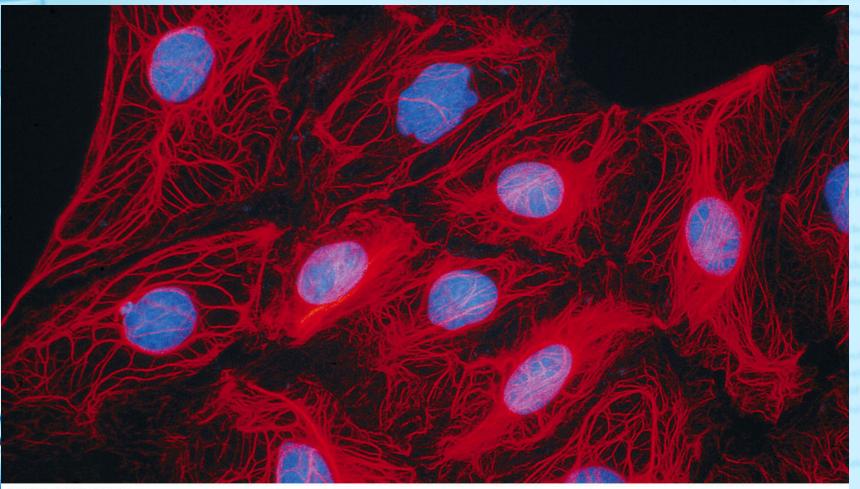
Reality Mudeling spreshave a static illing sand shares casily, a tendency and inequalities to

but on the subseishape as well as scripting. Ciffitha implices anall to

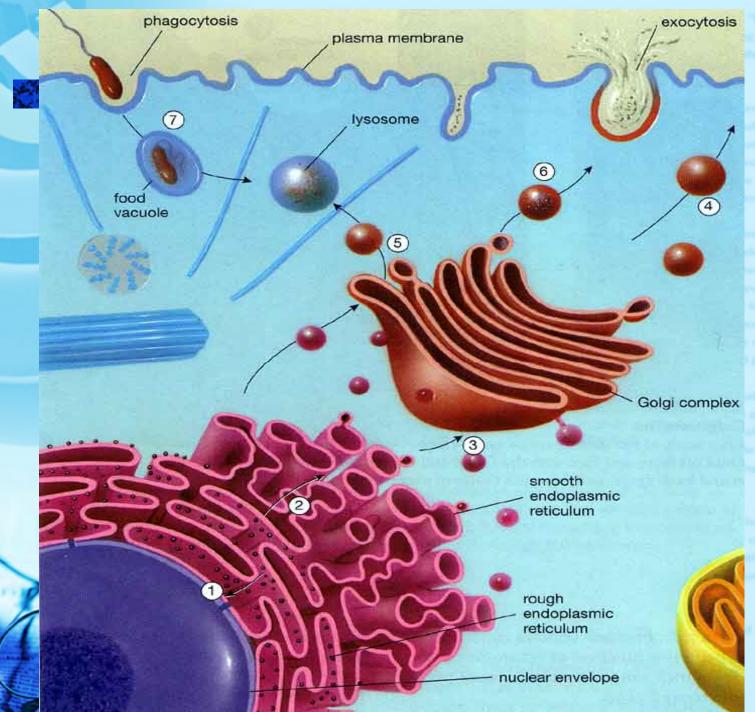
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the content wishin, perform the terms "scame" or "close-up" will be used. The terms "Rok," "bolink," and "hypertext" are to digital content, evolving new linear experiences, as does the term "Web" itself. It is exciting to know that there are cadres ted risks ideads, young and old, who are earning a living designing and shaping the Web of the future. Surely that Web will confly different from today's Web.

• Were designers device their tools from print publishing applications such as Adobe PageMaker or QuarkXPress, which have sents to add HTMR. (FyperText Markup Language) tags for Web publishing, or even to add multimedia sound and user intercupatibility. Multimedia programs such as Macromedia Director have created applications that will strip files down to Webtrans Markup consolia's version of this is the Shee for publishing combination. Even basic worth incomessing programs have



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or Quark/XPress, which have immedia assured and user interwill strip files down to Webrd-processing programs base an image as a GIF (Graphic ing the 72-dpi mecolution.

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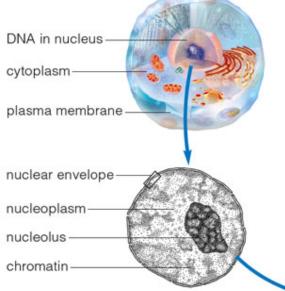
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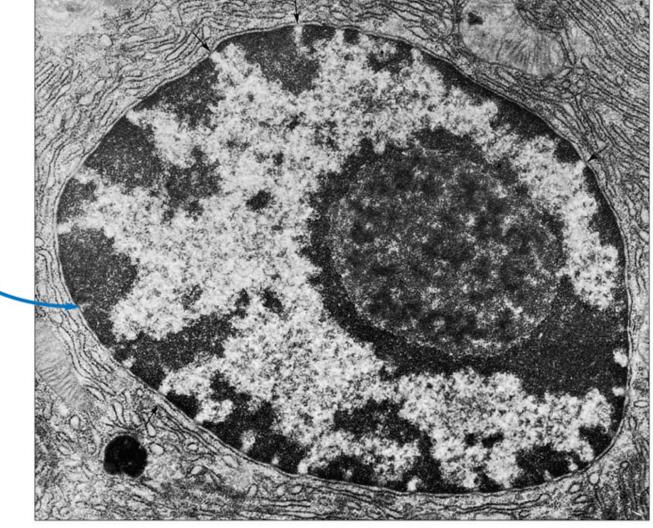
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### **Cell Related Definitions**

• Organelle: specialized structures that carry out specific functions within a cell.

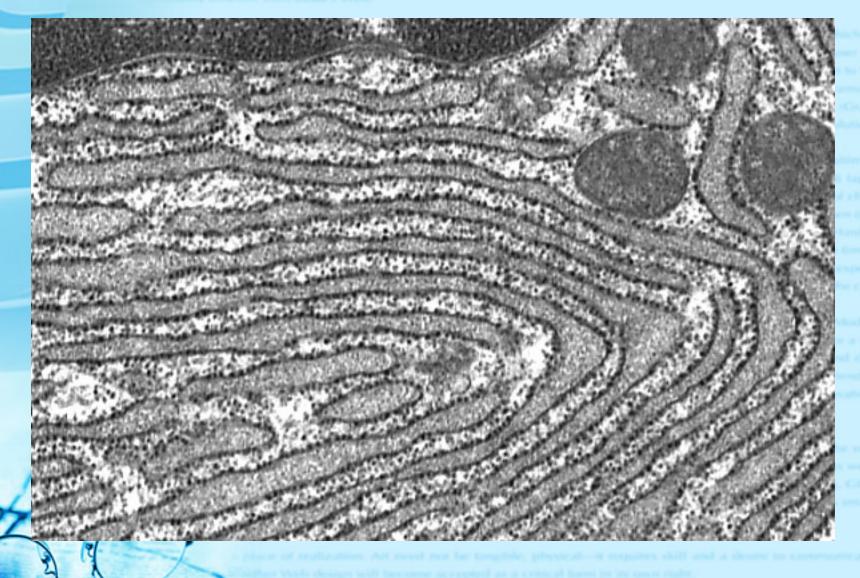
 Tissue: A mass of similar cells within an organism that perform a specific function. to digital content, exclude non-linear experiences, as does the term "Web" that!. It is exciting to know that there are cadres of reducted, score and old, who are carrier a living designing and shaping the Web of the future. Surely that Web will

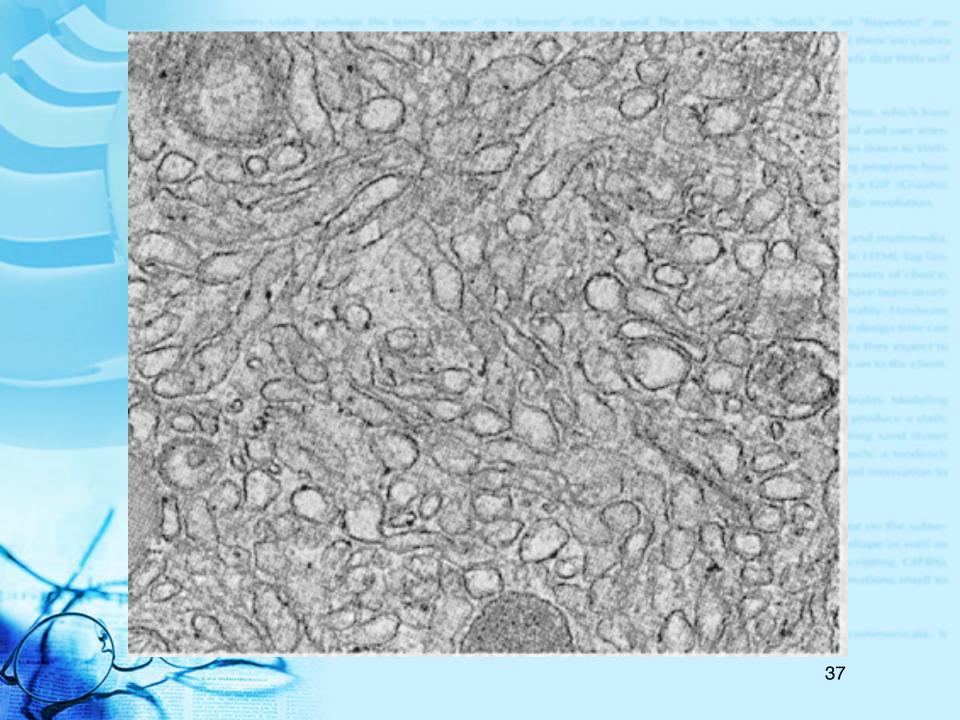


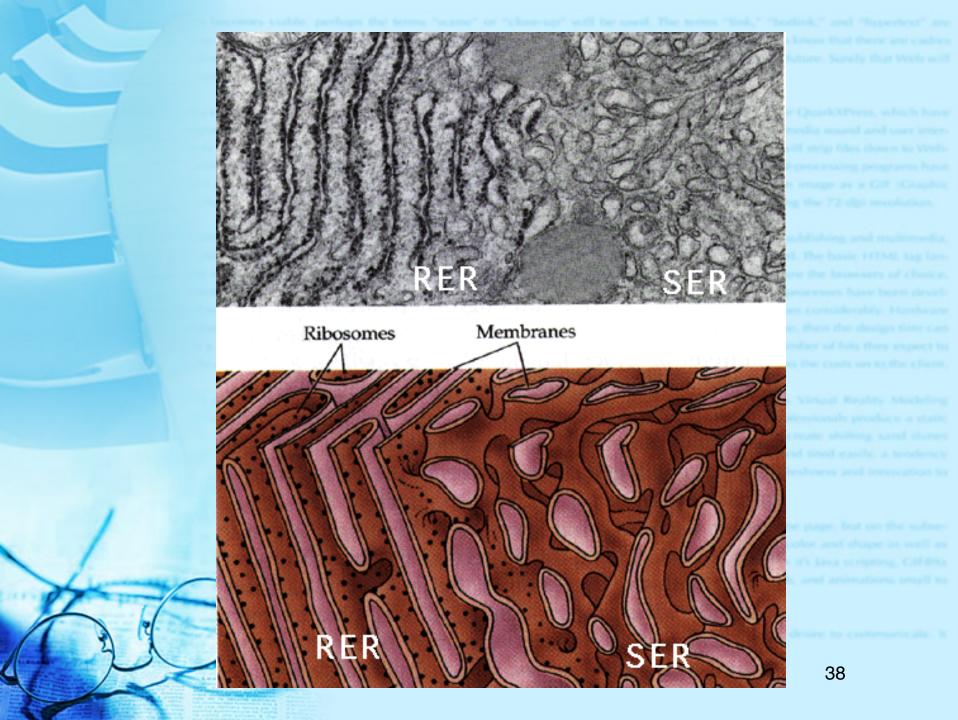


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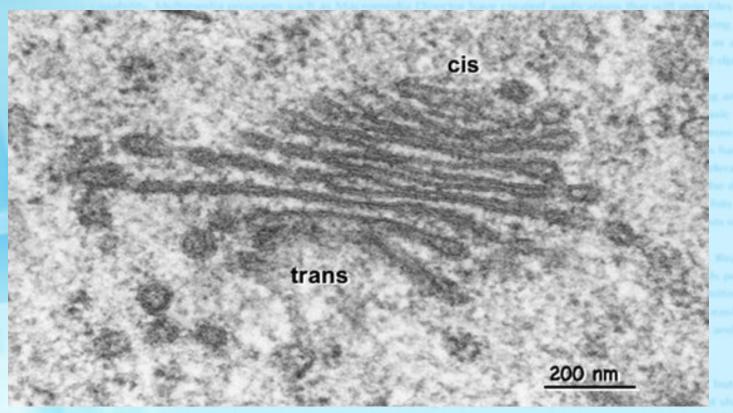






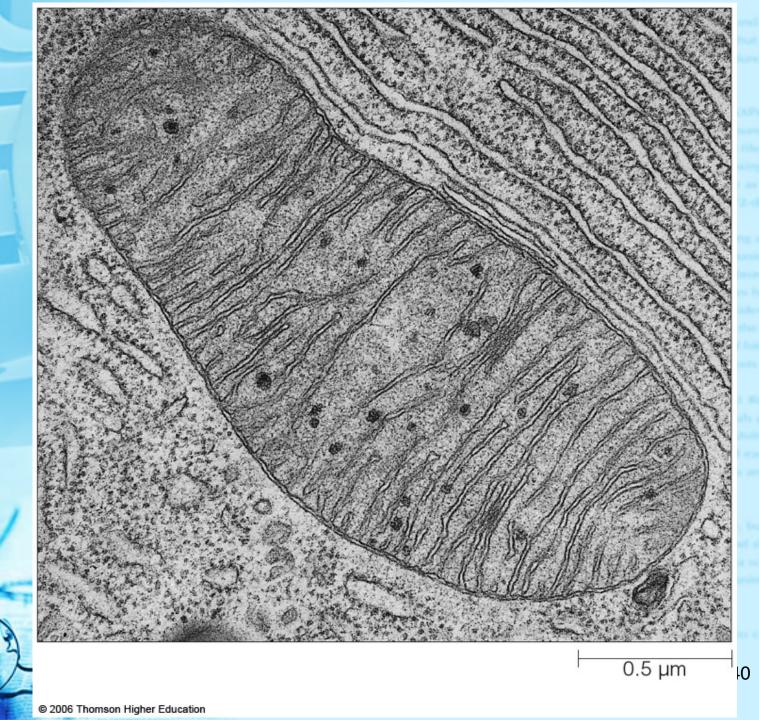
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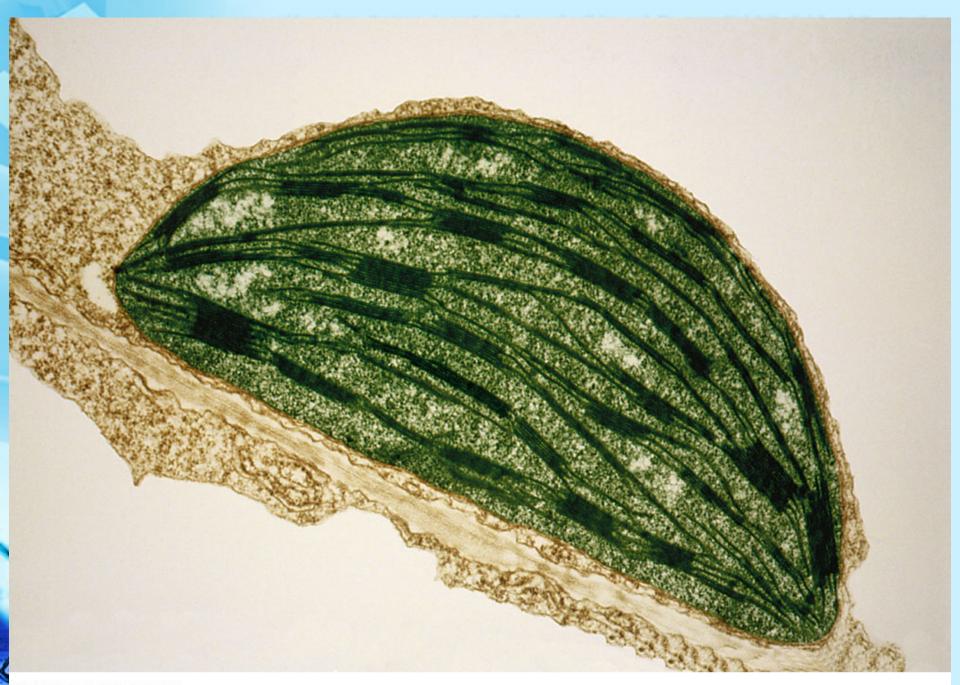
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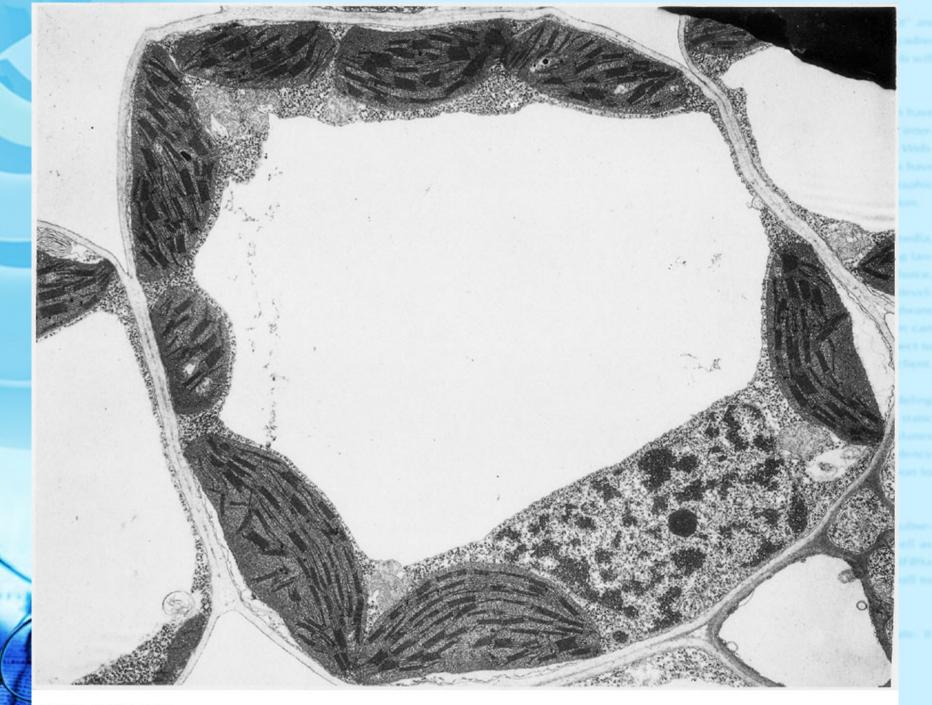
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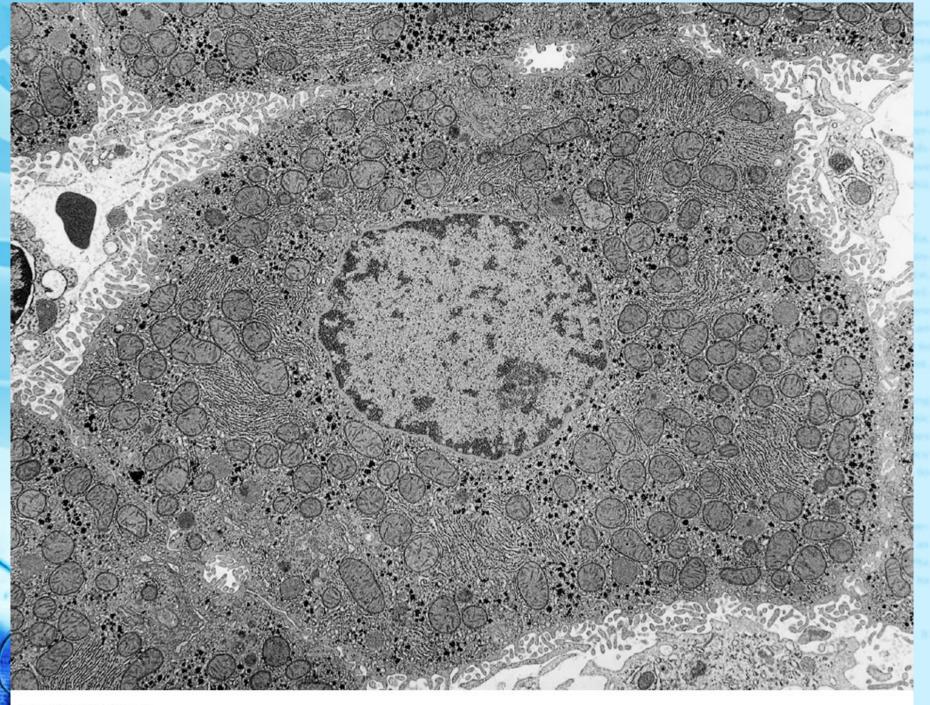
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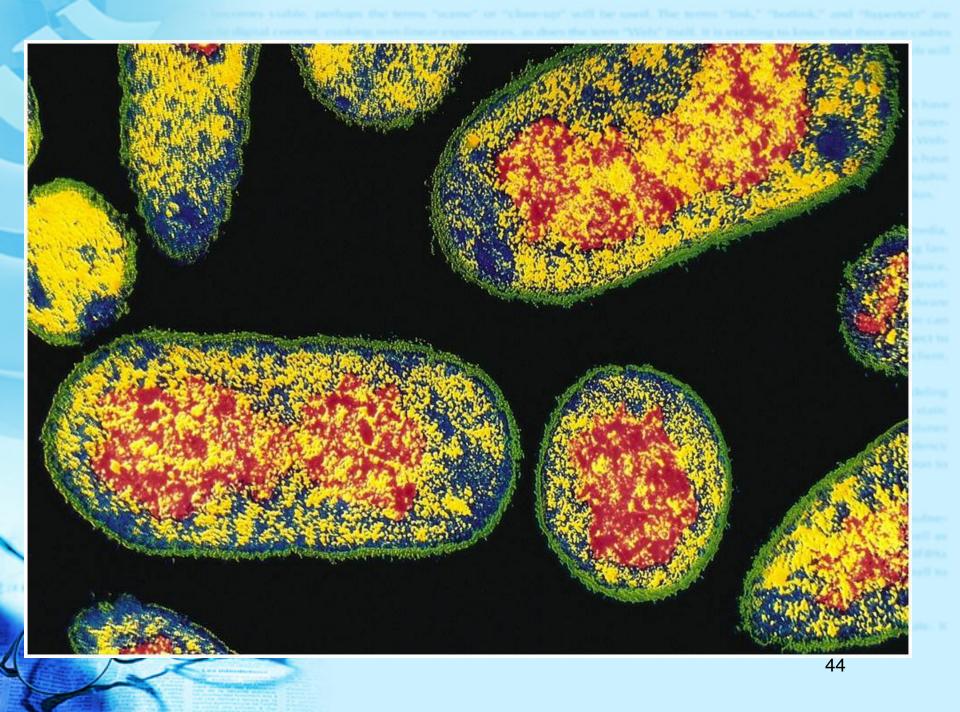
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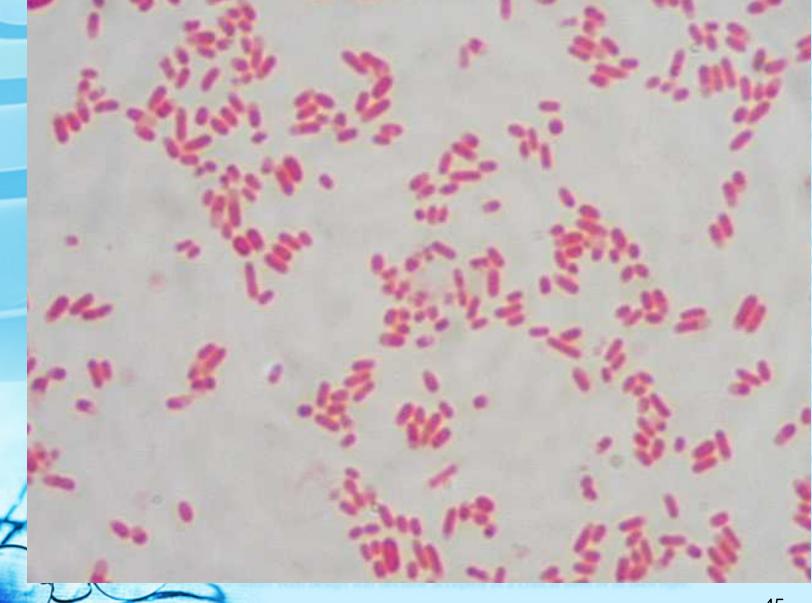
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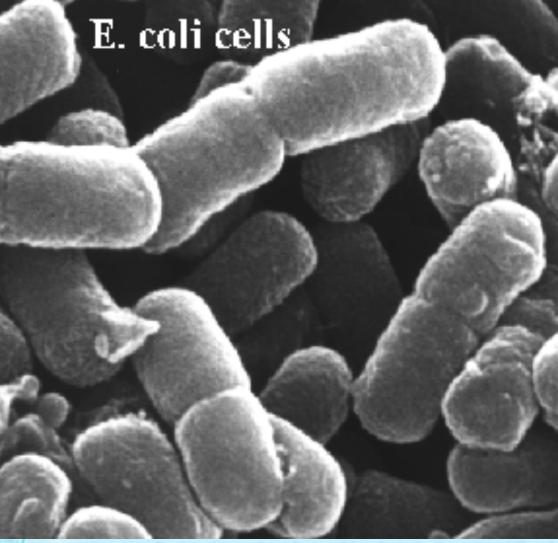
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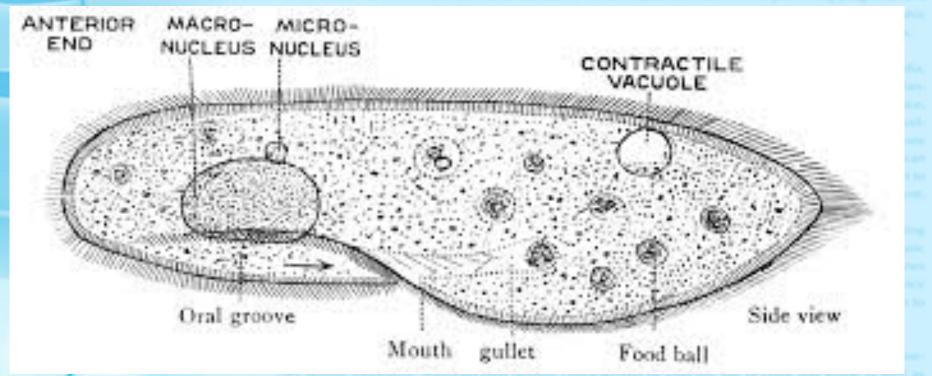
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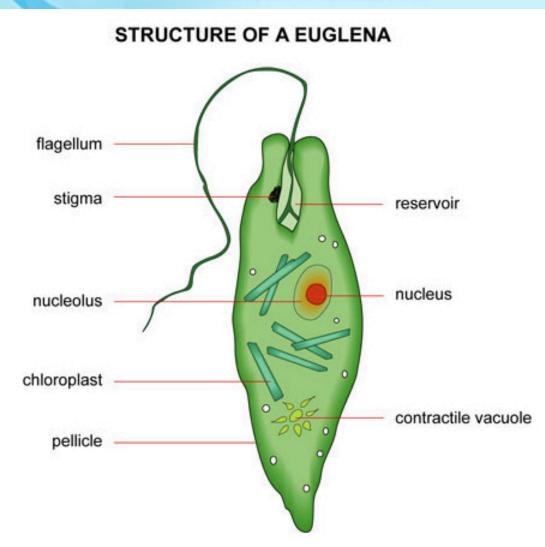
Web designers derive their tools from print publishing applications such as Adobe PageMaker or QuarkXPress, which have only to add HTML (Freperfiest Markup Language) tags for Web publishing, or even to add multimedia sound and user intercapability. Multimedia programs such as Macromedia Director have created applications that will strip files down to Websize: Macromedia's version of this is the Shockerare/Alterburner combination. Even basic word-processing programs have



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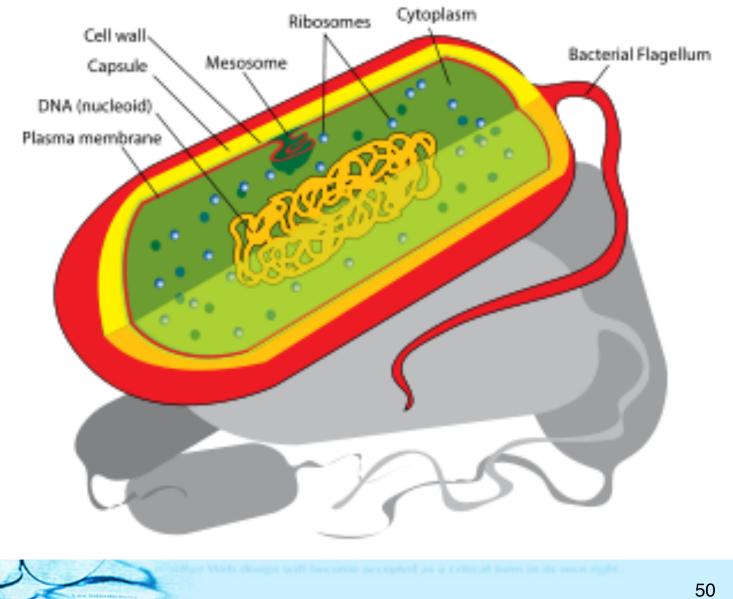
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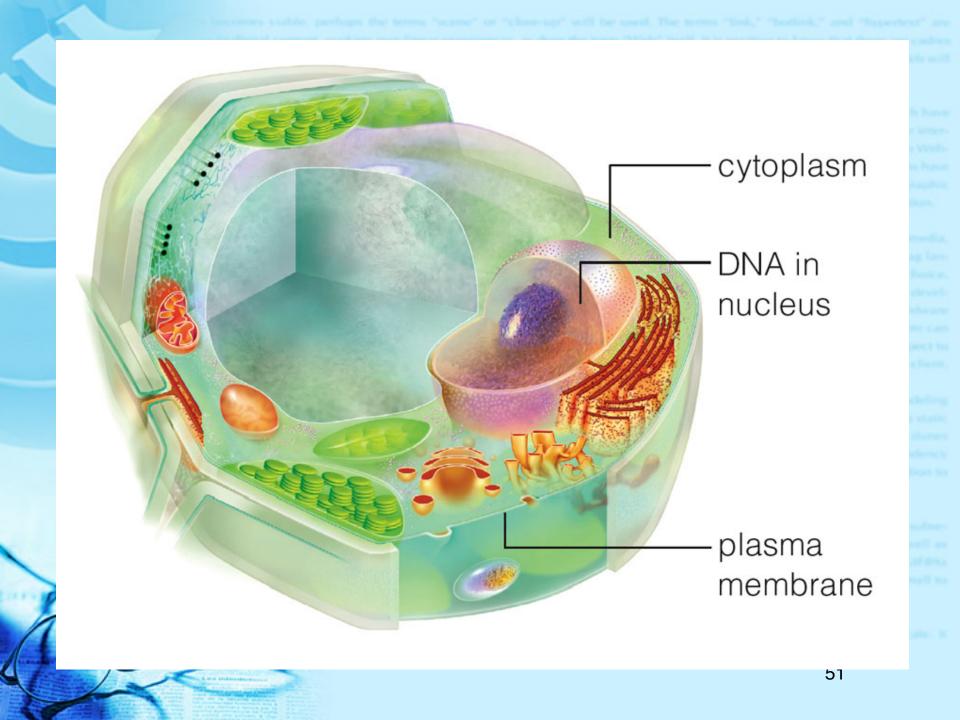
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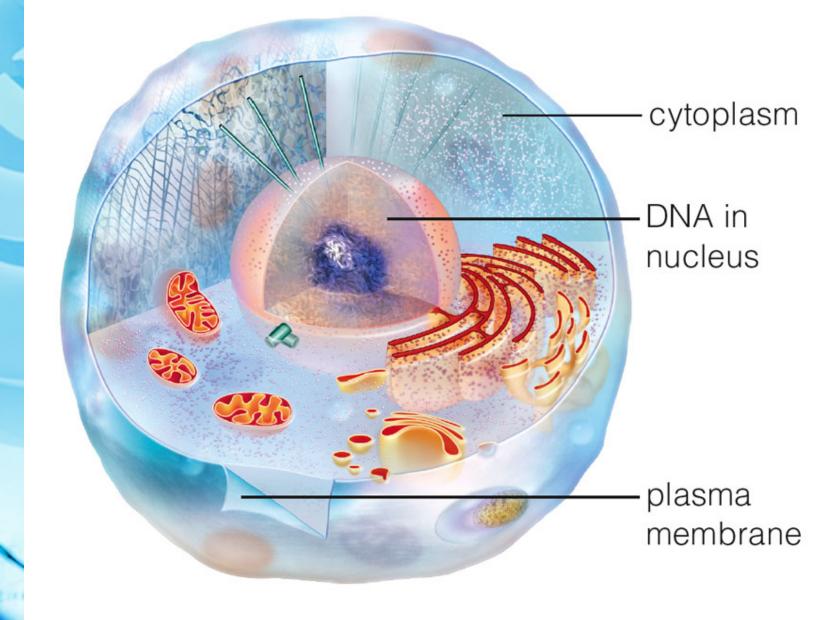
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