A large white egg is the central focus, resting on a wooden stand. A small, speckled egg is perched on the foot of a bird, also on the stand. A wooden beam balance scale is positioned in the foreground, its arms extending towards the egg. The background is a warm, orange-toned wooden surface. The text is overlaid on the image in a serif font.

THE  
WARREN  
STANDARD

VOLUME TWO No. FOUR - NINETEEN NINETY-FIVE

digital  
weights & measures

# digital weights and measures?

The title of this issue of *The Warren Standard* may seem to be a contradiction in terms, since weights and measures are not by definition digital. But it's our way of saying that this is a handbook of standard information for everyone who uses a computer to design or produce work.

While the computer has simplified and enriched our work life, it has also brought with it a constantly growing and evolving base of knowledge and information that we need to access.

What we hope to provide is a simple reference for the information that you need every day: one that can save you time, and help you avoid searching through the multitude of software manuals that line your shelves.

Our first book of this type, called *Standard Weights and Measures*, has met with enormous enthusiasm. We hope this issue serves as an equally useful tool in making your work easier and more enjoyable. As with all of our educational materials, it is part of our continuing effort to help make your work the best it can be.

contents:

**2-11 TOOLS**

3 unit conversion table

4 quarkxpress

5 pagemaker

7 photoshop

8 illustrator

9 freehand

10 key caps

11 tech support numbers

**12-15 COLOR**

13 color theory

14 reproduction techniques

**16-19 IMAGES**

17 scanning and file sizes

18 common file formats

**20-23 OUTPUT**

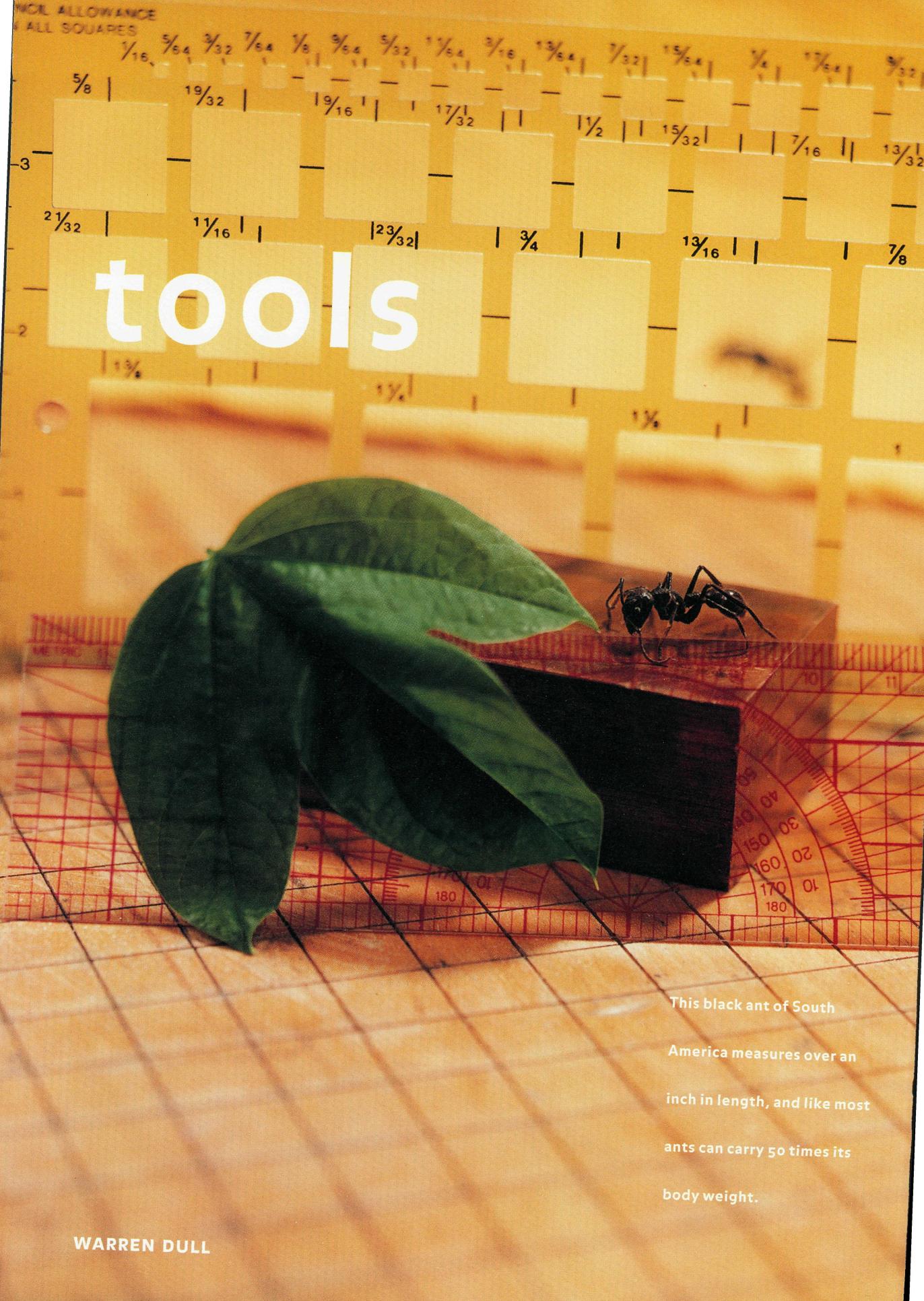
21 file output checklist

**24-26 PAPER**

25 weight conversions

26 grade classification





# tools

This black ant of South America measures over an inch in length, and like most ants can carry 50 times its body weight.

WARREN DULL

# unit conversion table

0.25 pt =		0.09 mm =	0.004"
0.5 pt =		0.18 mm =	0.007"
1 pt =		0.35 mm =	0.014"
1.5 pt =		0.53 mm =	0.021"
2 pt =		0.71 mm =	0.028"
2.83 pt =		1 mm =	0.039"
3 pt =		1.06 mm =	0.042"
4 pt =		1.41 mm =	0.056"
6 pt =		2.12 mm =	0.083"
8 pt =		2.82 mm =	0.111"
12 pt =	1 pica =	4.23 mm =	0.167"
	2 picas =	8.47 mm =	0.333"
	3 picas =	12.7 mm =	0.5"
	4 picas =	16.93 mm =	0.667"
	6 picas =	25.40 mm =	1"
	8 picas =	33.87 mm =	1.333"
	12 picas =	50.80 mm =	2"
	24 picas =	101.60 mm =	4"
	48 picas =	203.20 mm =	8"
	51 picas =	215.90 mm =	8.5"
	66 picas =	279.40 mm =	11"
	102 picas =	431.80 mm =	17"

# quarkxpress tools

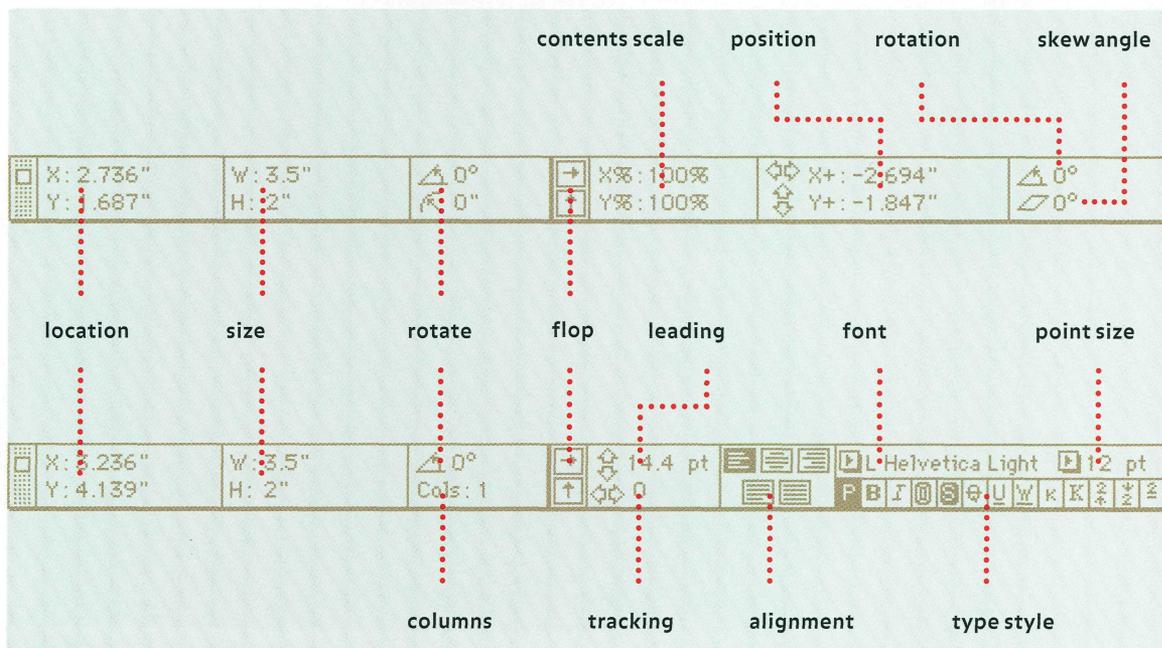
## KEYBOARD SHORTCUTS:



- 1: item** move, arrange, edit (boxes, lines, groups)
- 2: content** import, edit, modify box contents
- 3: rotate** manually rotate items
- 4: zoom** enlarge view (option key reduces)\*
- 5: text box** create text boxes\*
- 6: create rectangular picture boxes \***
- 7: create rounded-corner picture boxes \***
- 8: create oval and circular picture boxes\***
- 9: create polygon picture boxes\***
- 10: orthogonal line** create horizontal and vertical lines\*
- 11: line** create lines of any angle\*
- 12: link** flow text from text box to text box
- 13: unlink** break links between text boxes

- get text ⌘E
- document setup ⌘op sh P
- find/change ⌘F
- H&Js ⌘shift H
- character ⌘shift D
- leading ⌘shift E
- formats ⌘shift F
- rules ⌘shift N
- tabs ⌘shift T
- modify ⌘M
- frame ⌘B
- runaround ⌘T
- duplicate ⌘D
- step and repeat ⌘option D

\*Double-clicking on tool brings up preferences dialog



# pagemaker tools

## KEYBOARD SHORTCUTS:

type specs ⌘ T

paragraph ⌘ M

indents/tabs ⌘ I

select all ⌘ A

fit in window ⌘ W

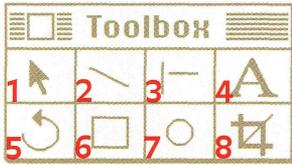
fill and line ⌘ ]

guides ⌘ J

snap to guides ⌘ U

bring to front ⌘ F

send to back ⌘ B



**1: pointer** select, size, and move objects

**2: line** draw lines at any angle

(hold shift key to constrain angle)

**3: rule** draw vertical and horizontal rules

**4: text** create text blocks, edit text

**5: rotate** rotate objects

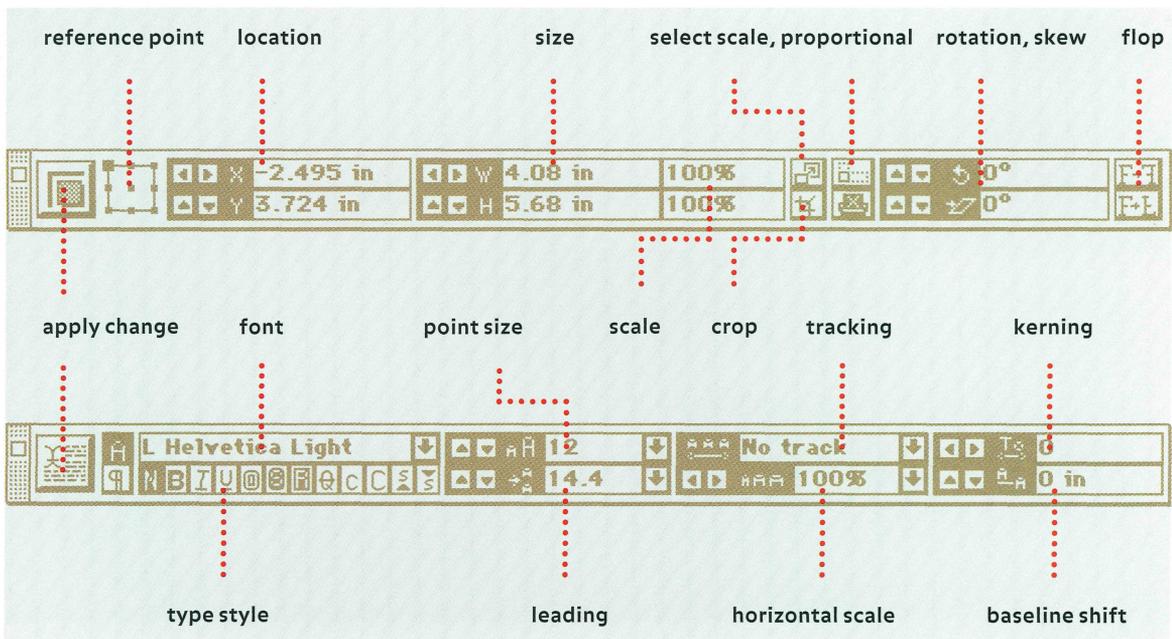
**6: rectangle** draw rectangles

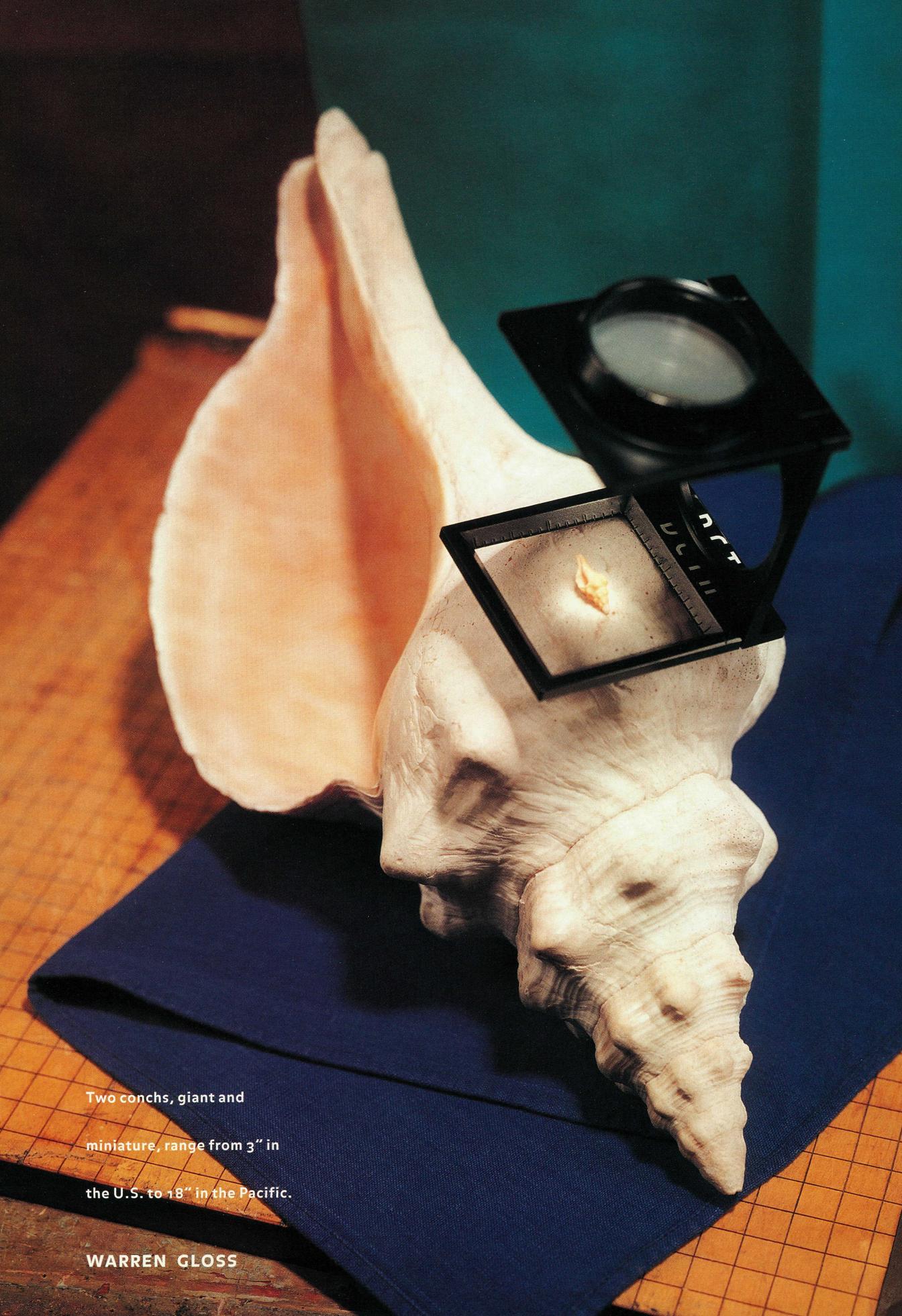
(hold shift key to constrain to square)

**7: oval** draw ovals

(hold shift key to constrain to circle)

**8: crop or trim imported images**





Two conchs, giant and  
miniature, range from 3" in  
the U.S. to 18" in the Pacific.

**WARREN GLOSS**

# photoshop tools

## KEYBOARD SHORTCUTS:

zoom in ⌘+

zoom out ⌘-

**1,2: marquee** make elliptical or rectangular selections — m\*

show/hide rulers ⌘R

**3: lasso** make a freehand selection — l

select all ⌘A

**4: magic wand** select areas by color — w

select none ⌘D

**5: move** move a selection — v

last filter ⌘F

**6: hand** move view of image without moving image — h

levels ⌘L

**7: zoom** enlarge your view (option reduces) — z

curves ⌘M

**8: crop** crop an image — c

brightness/contrast ⌘B

**9: type** create type — y

color balance ⌘Y

**10: paint bucket** fill an area with the foreground color — k

hue/saturation ⌘U

**11: gradient fill** create a gradation between two points — g

**12: line** draw straight lines at any angle — n

**13: eyedropper** sample color from any location — i

**14: eraser** paint with background color, clear layer, or

saved image — e

**24: sponge** change the saturation of an area — o

**15: pencil** draw freehand or straight lines — p

**25: foreground color**

**16: airbrush** airbrush an area — a

**26: background color**

**17: paint brush** paint an image with selectable brush size — b

**27: default colors**

**18: rubber stamp** paint a copy or modified copy of an area — s

**28: standard mode**

**19: smudge** simulate dragging with wet paint — u

**29: quick mask mode**

**20: sharpen** increase the focus of an area — r

**30: screen modes**

**21: blur** soften the focus of an area — r

\*You can also select these tools by pressing the

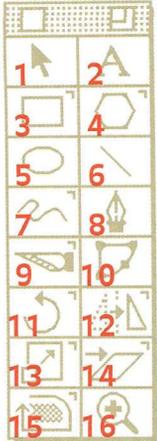
**22: dodge** lighten areas — o

letter following each item

**23: burn tool** darken areas — o

# freehand tools

## KEYBOARD SHORTCUTS:



- 1: pointer** select, adjust, and move objects and points
- 2: text** create text blocks; type or edit text
- 3: rectangle** draw rectangles with/without rounded corners\*
- 4: polygon** draw regular polygon shapes\*
- 5: ellipse** draw ellipses and circles
- 6: line** draw straight paths at any angle  
(shift key constrains angle)
- 7: freehand** draw a freeform shape or path\*
- 8: pen** place points precisely for shapes or paths
- 9: knife** split a path by clicking on a path or points on a path\*
- 10: bezier** draw straight lines and arcs as Bezier Curves
- 11: rotate** rotate an object around a fixed point\*
- 12: reflect** mirror an object by reflecting it across an axis\*
- 13: scale** reduce or enlarge an object or group of objects\*
- 14: skew** slant or skew an object horizontally, vertically, or  
align both in different or uniform proportions\*
- 15: trace** trace imported bitmapped images  
and objects drawn in FreeHand\*
- 16: magnify** enlarge your view (option key reduces)

\* Double-clicking on tool brings up preferences dialog

export ⌘E

place ⌘shift D

redo ⌘Y

select all ⌘A

clone ⌘=-

group ⌘G

ungroup ⌘U

bring to front ⌘F

bring forward ⌘[

send backward ⌘]

send to back ⌘B

# illustrator tools

## KEYBOARD SHORTCUTS:

zoom in ⌘J

zoom out ⌘[

fit in window ⌘M

select all ⌘A

select none ⌘shift A

last filter ⌘shift E

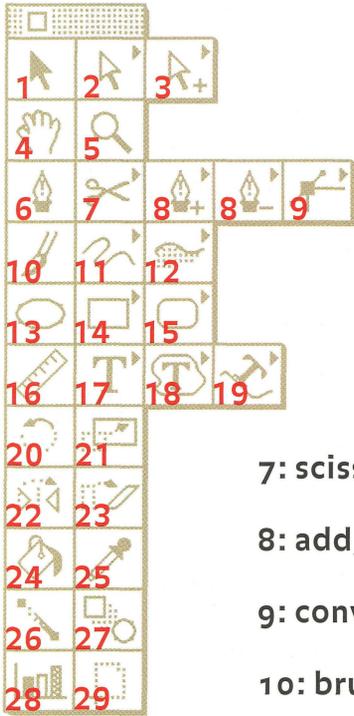
paint style ⌘I

join ⌘J

average ⌘L

bring to front ⌘=

bring to back ⌘-



**1: pointer** select, adjust, and move objects and path points

**2: direct select** select, adjust, move pts. of a grouped object

**3: group select** select, move items among a group of items<sup>2</sup>

**4: hand** move view of the image without moving image

**5: magnify** enlarge your view (option key reduces)

**6: pen** place points precisely for freeform shapes or paths

**7: scissors** split path by clicking on a path or point on a path<sup>1</sup>

**8: add, delete anchor point** add/delete points on existing paths<sup>2</sup>

**9: convert direction point** convert corner points to curve points<sup>2</sup>

**10: brush** draw a freeform shape or path as if using a brush<sup>1</sup>

**11: freehand** draw a freeform shape or path

**12: auto trace** trace imported bitmapped images

**13: oval** draw circles or ovals<sup>3</sup>

**14,15: rectangle** draw rectangles with/without rounded corners<sup>2,3</sup>

**16: measure** measure the distance between points

**17,18,19: type** create or edit text; create or edit text within an area<sup>2</sup>;

create or edit text along a path<sup>2</sup>

**20: rotate** rotate an object around a fixed point<sup>1</sup>

**21: scale** reduce or enlarge an object or group of objects<sup>1</sup>

**22: reflect** mirror an object by reflecting it across an axis<sup>1</sup>

**23: shear** slant or skew an object across an axis<sup>1</sup>

**24: paint bucket** fill an object with a selected color<sup>1</sup>

**25 eyedropper:** click to get the color values of

a particular point<sup>1</sup>

**26 gradient fill:** change direction and distance of

a gradient fill

**27 blend:** blend geometry between 2 different objects

**28 graph:** create custom graphs with

entered or imported data<sup>1</sup>

**29 page:** change the location of the page area

<sup>1</sup> Double-clicking on tool brings up preferences dialog

<sup>2</sup> Click and hold mouse down to access this tool

<sup>3</sup> Double-clicking on tool makes tool draw from the center

# key caps

				key	+ shift	+ option	+ both
				x	X	≈	˘
				y	Y	¥	Á
				z	Z	Ω	˙
				0	)	°	,
				1	!	¡	/
				2	@	™	¤
				3	#	£	‹
				4	\$	¢	›
				5	%	∞	fi
				6	^	§	fl
				7	&	¶	‡
				8	*	•	°
				9	(	ª	˙
				-	_	-	-
				=	+	≠	±
				[	{	“	”
				]	}	‘	’
				;	:	…	Ú
				‘	“	æ	Æ
				,	<	≤	-
				.	>	≥	˘
				/	?	÷	¿
				`	~	˘	˘
				v	V	√	◇
				w	W	Σ	”

# tech support numbers

**Adobe Systems** (Illustrator,

PhotoShop): 206 628 2757

PageMaker: 800 288 6832

America Online (AOL): ADOBE

Compuserve: GO ADOBEAPP

Use this space for other software

tech support and serial numbers:

---

---

---

---

---

---

SERIAL NUMBER

---

---

---

**Macromedia** (FreeHand):

415 252 9080

AOL Keyword: MACROMEDIA

Compuserve: GO MACROMEDIA

---

---

---

---

---

---

SERIAL NUMBER

---

---

---

**Quark** (QuarkXPress)

Macintosh: 303 894 8899

PC: 303 894 8822

AOL Keyword: QUARK

Compuserve: GO QUARK

---

---

---

---

---

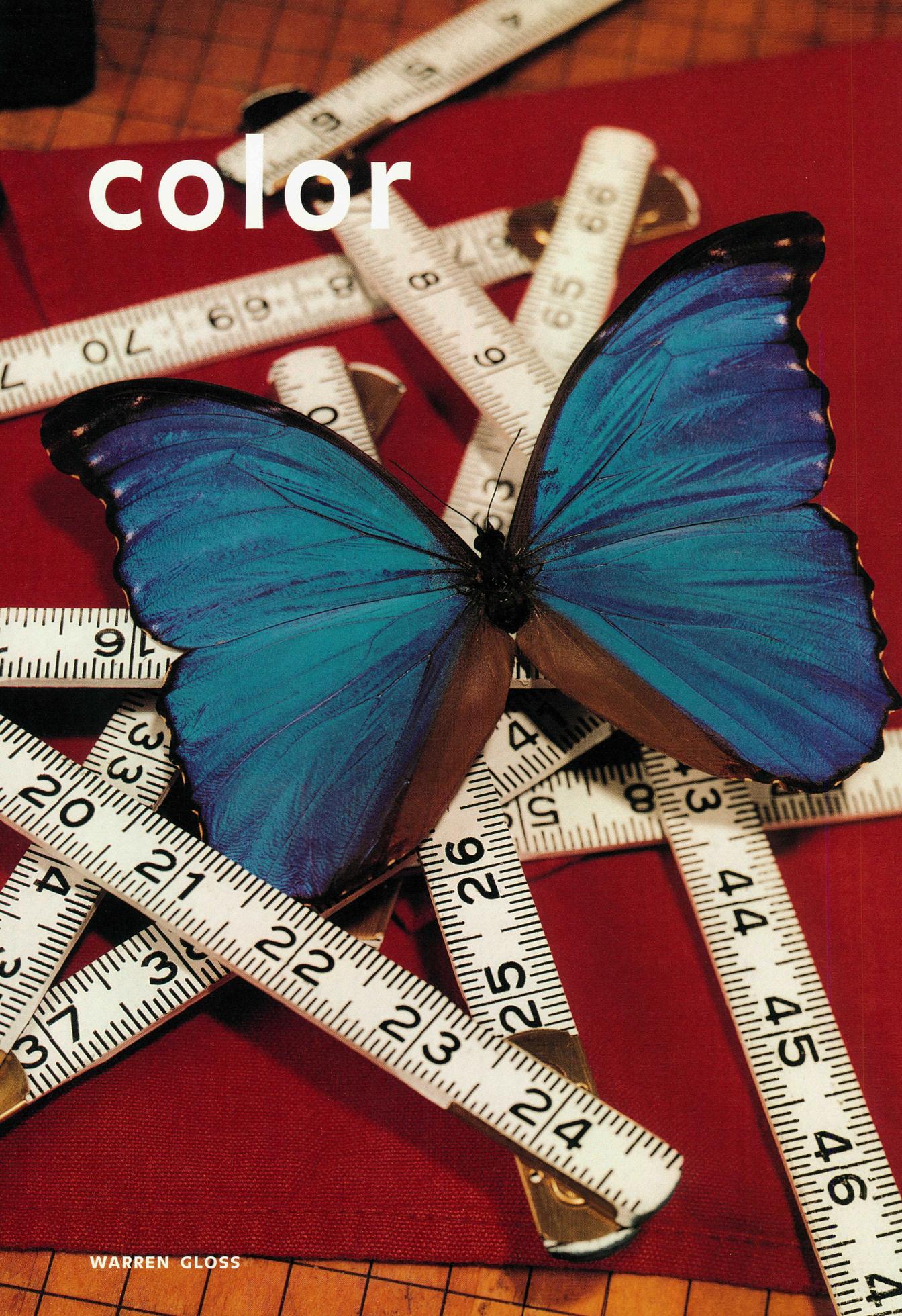
---

SERIAL NUMBER

---

---

# color



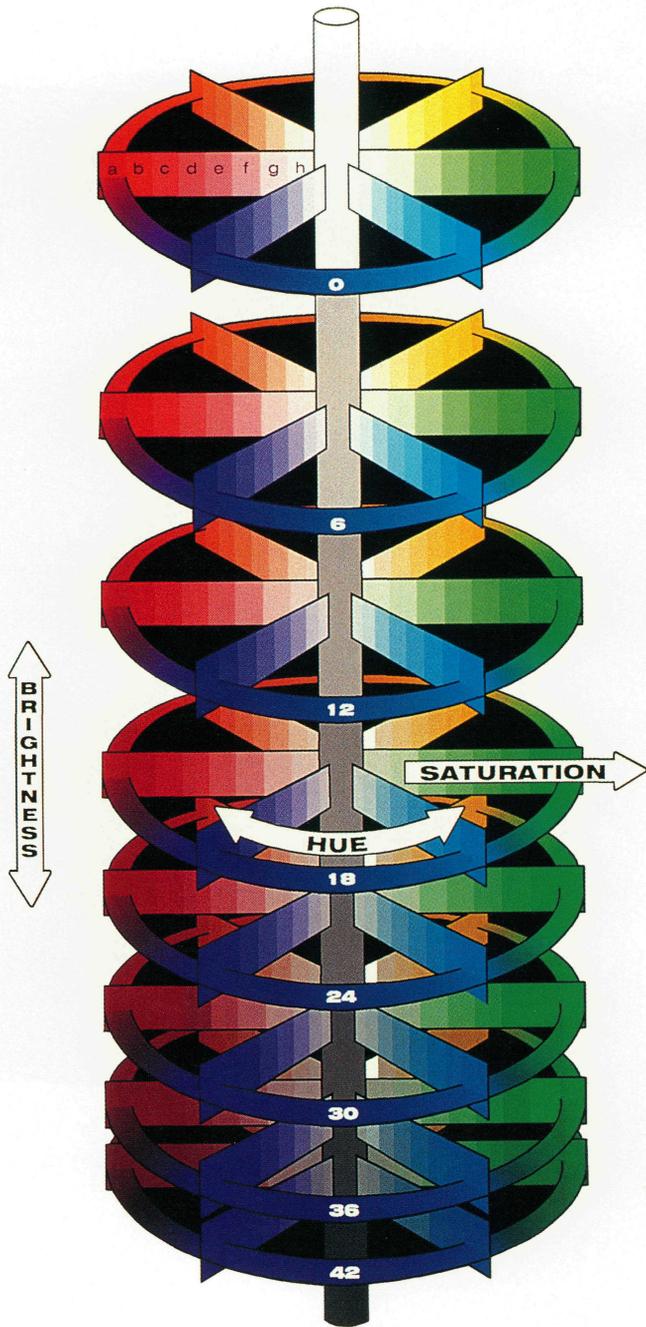
WARREN GLOSS

# color theory

**Four-color space.** This 3-D model\* logically shows the four-color spectrum in 50 hues, with 40 tints and shades of each hue. There's also a section of four-color grays — over 2,000 colors in all.

The evenly spaced hues are arranged in the order of the visible spectrum.

The brightness of a color is affected by adding black in 6% increments.



The Blue Morpho from South America, with a wing span of 6 1/2", is not the largest butterfly. That title goes to Queen Alexandra's birdwing, of New Guinea, with a wingspan of up to 11 1/8".

\*TRUMATCH 3-D Model© of 4-color space.

# reproduction techniques

1-color

black on color

duotone

tritone



**Any number** of effects can be achieved through the simple act of screening an image. Combining techniques can vary the effect in surprising ways. For example, a black-on-color screen is similar to a duotone, in that both contain dots of two colors. They differ in that each separate plate of a duotone will carry the image, but one plate of the black-on-color will simply be a solid tone.

**black & white**

**4-color**





# images

A snowflake (left slide) lasts a few moments. The moon is 4.5 to 5 billion years old.

# scanning and file sizes

**There is a simple rule** to govern how images should be scanned. Double the line screen at which the image will be printed, and you will derive the number of dots per inch at which the image should be scanned.

size: DPI	bitmap	grayscale	RGB	CMYK
35mm: 120 DPI	3 K	19 K	57 K	76 K
170 DPI	6 K	38 K	114 K	152 K
220 DPI	9 K	64 K	191 K	254 K
300 DPI	15 K	118 K	353 K	470 K
400 DPI	27 K	210 K	628 K	838 K
600 DPI	60 K	471 K	1.38 MB	1.84 MB
4" x 5": 120 DPI	36 K	282 K	844 K	1.10 MB
170 DPI	72 K	565 K	1.65 MB	2.21 MB
220 DPI	119 K	946 K	2.77 MB	3.69 MB
300 DPI	220 K	1.72 MB	5.15 MB	6.87 MB
400 DPI	391 K	3.05 MB	9.16 MB	12.2 MB
600 DPI	879 K	6.87 MB	20.6 MB	27.5 MB
8" x 10": 120 DPI	141 K	1.10 MB	3.30 MB	4.39 MB
170 DPI	283 K	2.21 MB	6.62 MB	8.82 MB
220 DPI	473 K	3.69 MB	11.1 MB	14.8 MB
300 DPI	879 K	6.87 MB	20.6 MB	27.5 MB
400 DPI	1.53 MB	12.2 MB	36.6 MB	48.8 MB
600 DPI	3.43 MB	27.5 MB	82.4 MB	109.9 MB

# common file formats

**IFF** **[Amiga] Interchange File Format** Native to the now-discontinued Commodore Amiga. Can be opened in IBM programs like Deluxe Paint and PhotoShop, and on the Mac in Photoshop.

**BMP** **Windows Bitmap** File format built into Windows and native to Microsoft Paint. For screen captures and other DOS, Windows and OS/2 bitmap graphics. Supports 1- to 24-bit depth and index color (a table that defines a finite number of colors).

**GIF** **[CompuServe] Graphics Interchange Format** Use GIF to download images from the Internet. Supports 1- to 8-bit per pixel built-in “lossy” compression (see JPEG). 256 colors only.

**EPS** **Encapsulated PostScript** Adobe-created format with vector (line-art data only which can be scaled with no loss of quality) or raster (bitmap which cannot be scaled or edited) options. In Photoshop, supports transparent whites in bitmap mode.

**JPEG** **Joint Photographic Experts Group** Use JPEG to save and compress photographs. “Lossy” compression: identifies and discards nonessential data; however, JPEG allows you to adjust the amount of loss, trading between compression and quality.

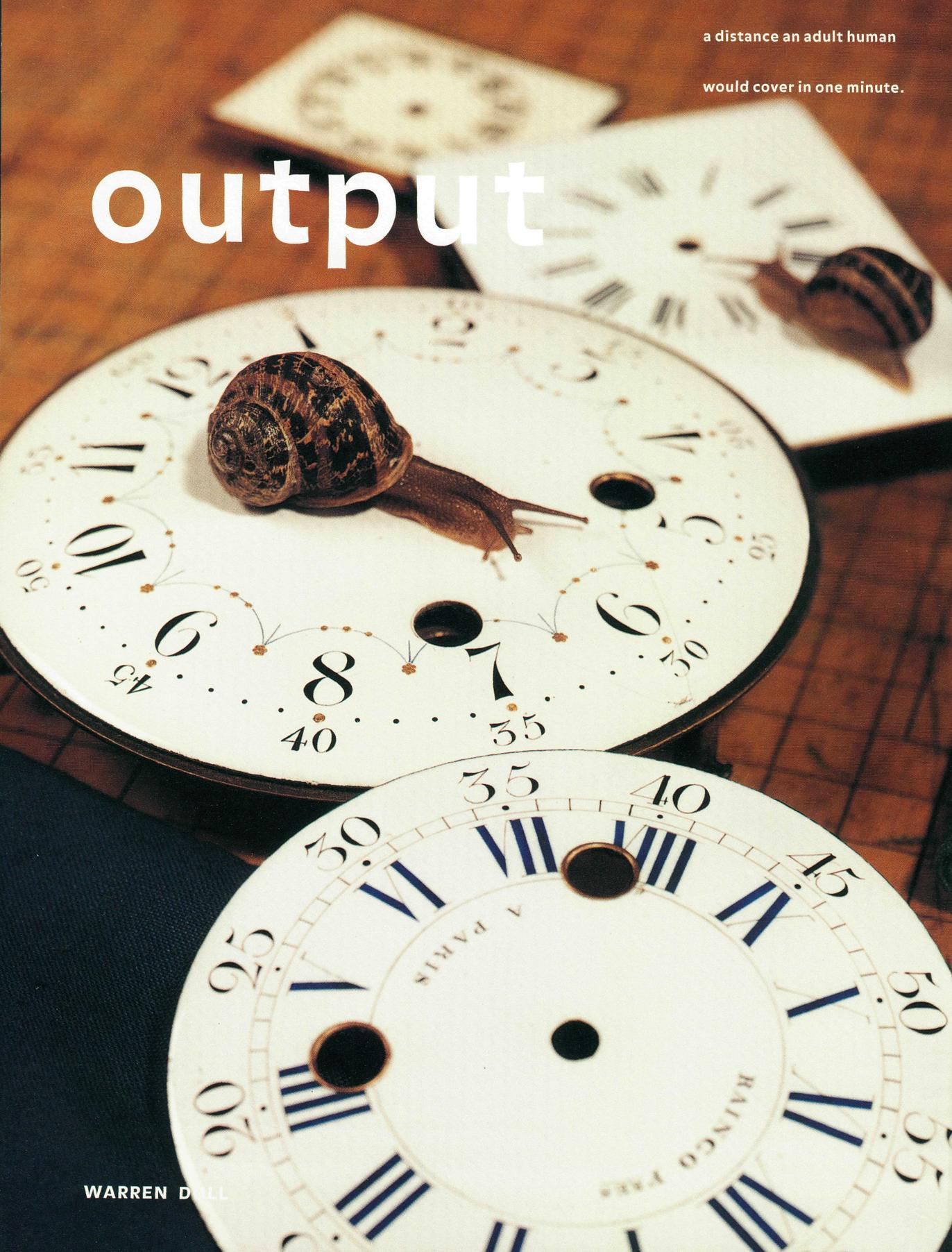
**LZW** **Lempel-Ziv-Welch** Not a file format, LZW is important to compressing files. This “lossless” compression algorithm allows you to compress image data without losing quality.

**MacPaint** Bitmap images specific to this Mac paint program.

- PCX**                    **PC Paintbrush Extension** Common dos format developed for pc Paintbrush by ZSoft. Used for screen captures. Index color.
- PICT**                    **PICT** Widely used on the Macintosh for lossless compression. For 16-bit or 32-bit images, PICT can use JPEG compression. Used often in video and multimedia applications.
  - PICT Resource** Used for startup screens and icons within programs: 16- or 32-bit resolution. If you can't open a file in Photoshop, try opening it as a PICT Resource instead.
  - PixelPaint** Specific to PixelPaint and PixelPaint Pro. Photoshop supports interapplication file transfer, and can open PixelPaint files, as well as MacPaint and QuickTime files.
- RAW**                    Interapplication and platform exchange format. Use when you are uncertain of what format you need. Saves pixels in binary form, where 0=black and 255=white.
- SCITEX**                **Scitex Continous Tone** Developed to transfer images between Scitex imaging systems and desktop programs like Photoshop.
- TARGA**                **Truevision Targa** For video applications that allow you to overlay a graphic image onto a video frame. For systems that use the TrueVision video board in ms-dos applications.
- TIFF**                    **Tagged Image File Format** The most common and portable format for saving bitmap scans. Useful for moving files between the Mac and pc. Does not compress data, but offers LZW option.

It takes a snail 2 hr, 4 min  
to travel 100m (328') –  
a distance an adult human  
would cover in one minute.

# output



# file output checklist

## 1. Documentation

- 100% size laser proofs  
(color if possible)
- Black and White proofs  
printed with *Print Colors as Grays* on
- If the file is sent via modem,  
a printed proof must follow
- Be cautious of relying on a fax
- An oversized document has  
been tiled, not reduced in size
- Registration marks are in place
- Proofs are properly marked up  
identifying LIVE vs. FPO images  
and color specifications
- Printed directory of contents  
of disk/cartridge is included
- Electronic file sheet,  
completely filled out

## 2. Digital media

- Clearly labeled with company  
name, disk number, contact,  
project name, date, etc.
- File naming conventions  
agreed to and followed
- Each file has a unique,  
useful name
- Revised files have new  
file names
- Contains copies of all layout files
- Contains copies of all companion  
graphic files (EPS, TIFF, etc.)
- Files that have been copied in  
such a way that links will be  
maintained when the file is  
opened in a new environment
- Appropriate software  
programs have been used in  
compatible versions
- Compression programs that are  
used match the vendor's

# file output checklist

## 3. Fonts

- Are all fonts PostScript fonts?
- If not, are you certain that your provider can accommodate them?
- Do versions match your service provider's?
- Keyboard maps included for foreign language fonts
- Have you sent screen and printer fonts with the job, while staying in compliance with your font licensing agreement?

## 4. Text

- Styles properly applied
- Reverses and outlines properly built
- Use of tiny type or graphic elements avoided
- All type aligned with tabs

- Text within graphics: font(s) provided or paths converted to outlines
- Text wrap properly implemented
- Are page numbers freestanding?

## 5. Graphic elements

- Borders and rules properly built
- Careful use of hairlines
- Minimal nesting
- Flatness appropriately set
- Adequate number of points of nodes
- Knowledgeable use of scaling, cropping, and rotating
- Attention to blends: avoid shadestepping and other processing implications
- Placed graphics contain single subjects

Digital die lines used  
to build designs

UPC codes accurately built

Resizing of LIVE images  
thoughtfully implemented

LIVE images provided in the  
correct formats

Picture windows properly built

Digital photo and photo CD file  
formats correctly chosen

Zoom to confirm placement of  
matching elements, particularly  
for crossmatching

## 6. Colors

Colors are properly defined with  
attention to *Separations on/off*

Unused colors deleted

Trapping has been discussed and  
recommendations followed

Special colors properly applied

## 7. Miscellaneous

Document size does not exceed  
limits of the imagesetter or press

Unwanted items have  
been deleted, not covered with  
a white box

Bleed and trim properly applied

Image substitution  
considerations followed

## 8. Other materials

Transparencies of reflective  
copy required for the job

Clear instructions about what to  
do with scans

# paper

Mercury is liquid at room temperature, freezes at -40 degrees, and boils at 357 degrees, making it ideal for use in thermometers.



# weight conversions

## text weights 25" x 38"

40 lb	59 gsm
43 lb	64 gsm
45 lb	67 gsm
50 lb	74 gsm
55 lb	81 gsm
60 lb	89 gsm
70 lb	104 gsm
75 lb	111 gsm
80 lb	118 gsm
90 lb	133 gsm
100 lb	148 gsm
105 lb	155 gsm
108 lb	160 gsm

## cover weights 20" x 26"

60 lb	162 gsm
63 lb	170 gsm
65 lb	176 gsm
66 lb	179 gsm
70 lb	189 gsm
80 lb	216 gsm
84 lb	227 gsm
100 lb	270 gsm
120 lb	325 gsm

## index weights 22.5" x 30.5"

90 lb	163 gsm
110 lb	199 gsm
140 lb	253 gsm

## vellum bristol weights 22.5" x 28.5"

57 lb	125 gsm
67 lb	147 gsm
80 lb	175 gsm

## tag weights 24" x 36"

100 lb	163 gsm
125 lb	203 gsm
150 lb	244 gsm
175 lb	285 gsm

# grade classification

**AFPA standard grade classifications [all finishes]**

quality	brightness
number 1	85.0 to 87.9
number 2	83.0 to 84.9
number 3	79.0 to 82.9
number 4	73.0 to 78.9
number 5	72.9 and below

**Paper is classified** (according to the American Forest & Paper Association) by its brightness, #1 being the brightest, and #5, the least bright. Within each grade, papers are offered in virgin or recycled, sheet or web (referring to the type of press on which the sheet will be printed).

Warren grades	class	grade	v	r	s	w*
	1	Lustro Gloss	*	*	*	*
	1	Lustro Dull	*	*	*	*
	1	Lustro Dull Cream	*	*	*	*
	1	Patina	*		*	*
	2	Warren Gloss		*	*	*
	2	Warren Dull		*	*	*
	2	Warrenflo	*	*	*	*
	3	Somerset Gloss Recycled		*	*	*
	3	Somerset Matte Recycled		*	*	*
	3	Somerset Web Gloss	*			*
	3	Somerset Web Matte	*			*
	3	Somerset Glare Free Gloss	*			*

\*v: virgin, r: recycled, s: sheetfeed, w: web

## WARREN DULL

# stocking information

**Stocking Information** This book is printed on Warren Dull and Warren Gloss, the new #2 gradeline from S.D. Warren, offering a unique combination of press performance and reliability with a stunning blue-white shade, high ink gloss, outstanding opacity, printability, and remarkable surface quality. Both Warren Gloss and Warren Dull are recycled grades, containing a minimum 10% recycled fiber, of which 100% is post-consumer waste. Warren Gloss is available in 60lb./89gsm, 70lb./104gsm, 80lb./118gsm, and 100lb./148gsm text weight; and in 80lb./216gsm and 100lb./270gsm cover weight. Warren Dull is available in 70lb./104gsm, 80lb./118gsm and 100lb./148gsm text weight; and in 80lb./216gsm cover weight.

# production notes

**Printing** Printed in the USA on Warren Dull Cover 80lb./216gsm and Warren Gloss Cover 80lb./216gsm; and on Warren Dull 100lb./148gsm and Warren Gloss 100lb./148gsm text, on a 40" 6-color press at 7,000 impressions an hour. Electronic mechanicals were supplied to the printer; 150,000 copies were produced. Binding is standard black wir-o.

**Front Cover: The ostrich egg (rear) will hatch a bird that weighs about 253 lbs.; the wren egg will hatch a bird that weighs from .3 to .5 oz.**

**Typography** Balance Bold, Bauer Bodoni.

**Photography** All photography by Victor Schragar, New York City. Images screened at 175 line from 8"x 10" prints.

Stochastic screening on page 15 is at 14 micron.

**Page 1: The South American hummingbird measures about 2" in length, and beats its wings from 22 to 78 times/sec.**

**Ink Sequence** Cover: special orange, κ, c, m, y. Overall dull varnish on outside front cover for protection. Spot gloss varnish on outside back cover. Text: κ, c, m, y.

©1995, S.D. Warren. All rights reserved. While every effort has been made to provide dependable data, all parties involved shall not be held liable for errors contained herein or incidental or consequential damages in connection with use of this information.

Illustrator, Photoshop, and Pagemaker are registered trademarks of Adobe Systems. QuarkXpress is a registered trademark of Quark, Inc. Freehand is a registered trademark of Macromedia, Inc. SCITEX is a registered trademark of Scitex Corporation, Ltd. All other trademarks are the property of their respective owners.

We are grateful to the following companies for use of material represented in this *Warren Standard*: Adobe Systems, Quark, Inc., Macromedia, Inc., Trumatch (NYC). The prepress guidelines on page 21 are based upon the SGAUA CREF guideline, as edited by S.D. Warren Co. The term Computer Ready Electronic File (CREF™) and the guideline itself is the property of the Scitex Graphic Arts Users Association (SGAUA).



10%

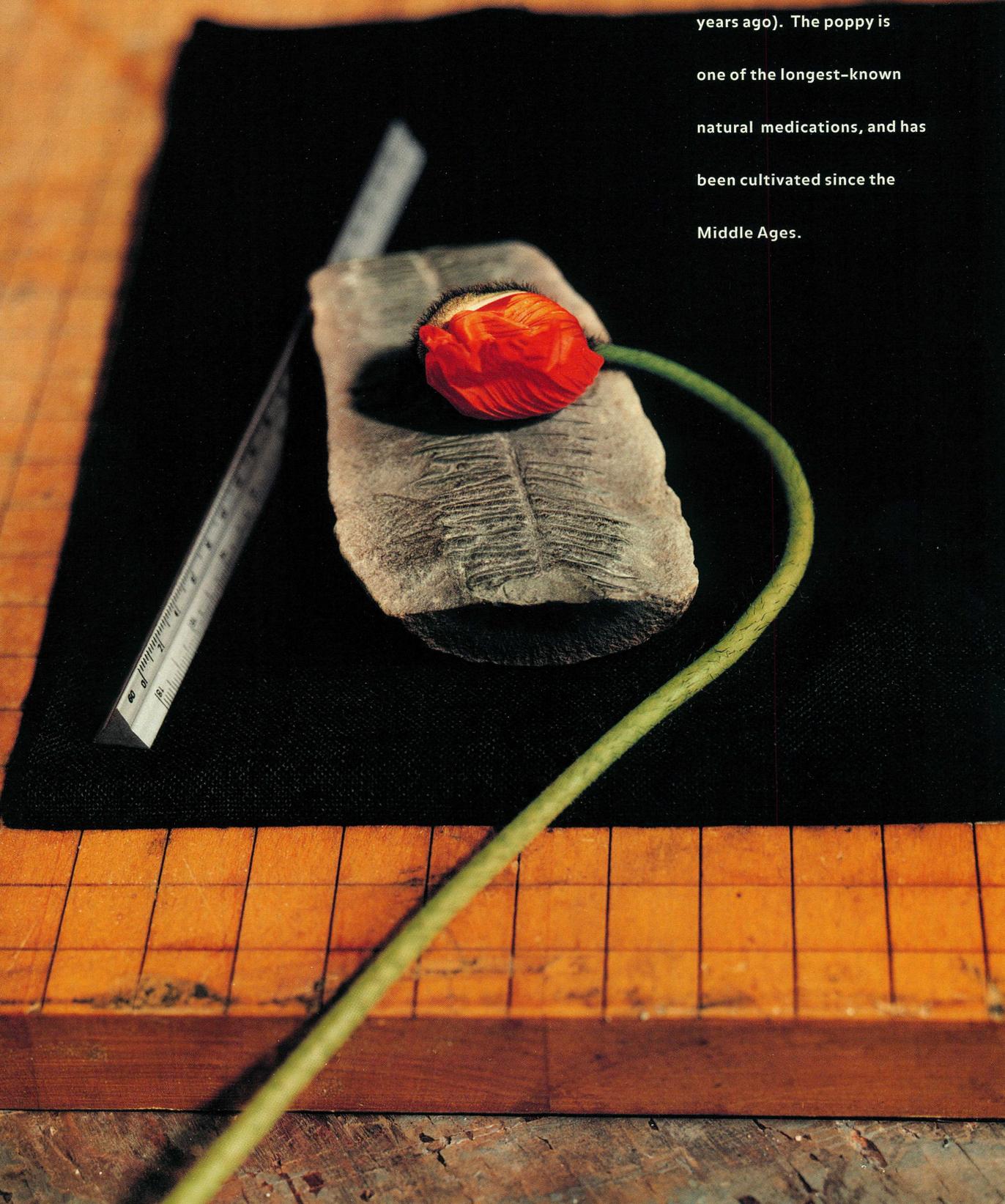
TOTAL RECOVERED FIBER  
ALL POST CONSUMER FIBER



A Sappi Group Company

S.D. WARREN COMPANY 225 FRANKLIN STREET, BOSTON, MA 02110 (617) 423-7300

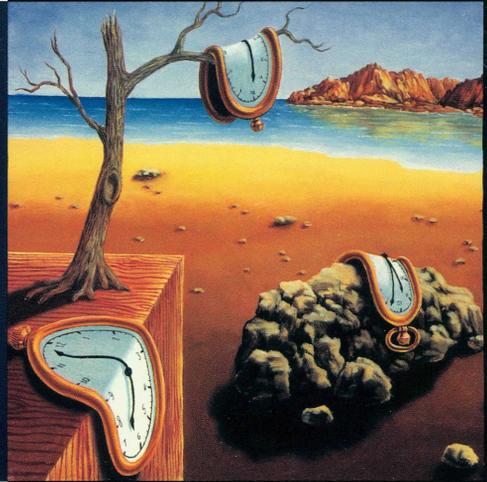
At 320 million years old, this fossil is a young one. Animal life was abundant by the Paleozoic Era (570 million years ago). The poppy is one of the longest-known natural medications, and has been cultivated since the Middle Ages.



Great ideas don't  
come easily.  
And sometimes they come  
from someplace else.



*Salvador's lunch.*



*Salvador's dream.*



1-800-882-IDEA

Call the Idea Exchange.  
Over 10,000 sample ideas available to  
provide creative inspiration and spark  
new ideas in over 120 categories of  
design and production. A free service  
of The S.D. Warren Company.

