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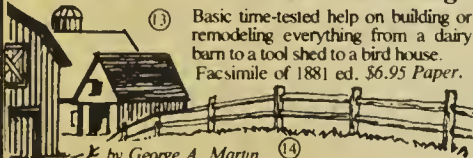
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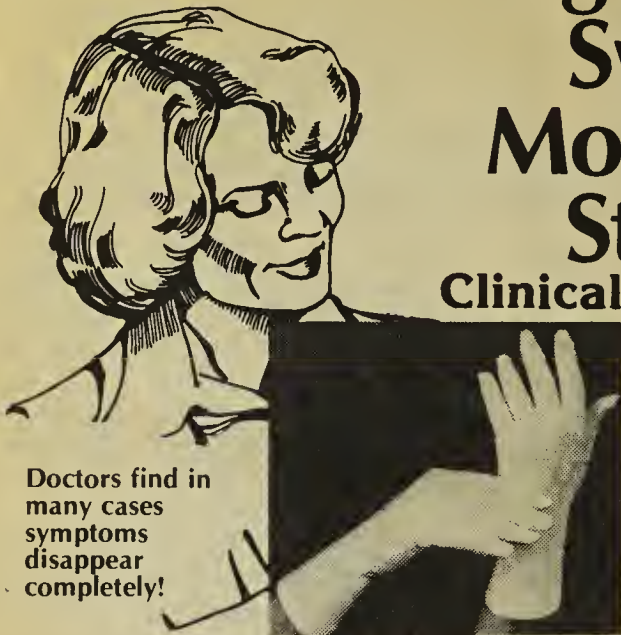
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by Mike Senkiw, Agronomist, Lakeland Nurseries

If your family is like mine, you're squeezing every dollar to make sure you have enough to go around. And it looks like things are going to stay that way.

One way to cut expenses is to cut the costs, and work, of lawn care. For example, a woman wrote about her zoysia lawn that she had mowed it only twice ALL SUMMER. She hadn't spent a cent on weed-killers. Not one cent for fertilizers. Yet her lawn was as green and weed-free as a pile carpet.

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From Indiana, M.A. Low, Sr., visited a physician friend in Minn., and saw a "whoie back yard was entirely in zoysia, it was beautiful... a deep green."

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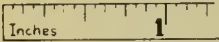
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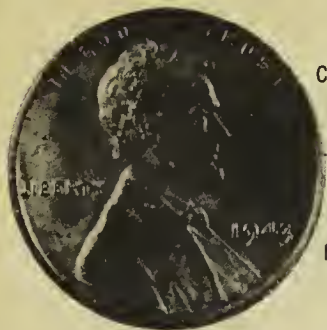
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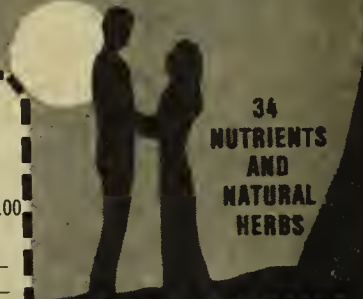
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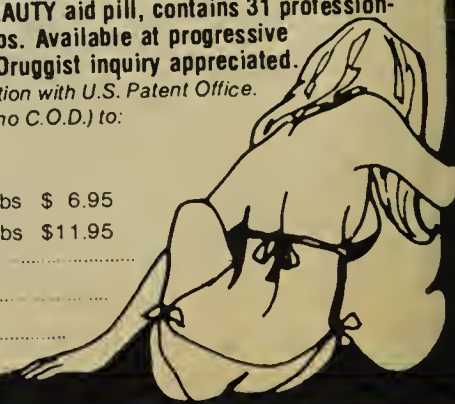
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LIMITED OFFER: We have a very limited quantity of a SUPER DELUXE Weather House. With all of the above features, it is much larger in size. A standout in home decor.

No. 4833—Super DeLuxe Weather House,  
only .....\$10.95 each

100%  
Hand  
Made

FOSTER-TRENT, Inc., Dept. 304-PE  
2345 Post Rd., Larchmont, N.Y. 10538

Please RUSH the Weather Houses I have checked below. I must be completely satisfied or I may return them within 30 Days for my money back (except Postage & Handling). (CANADIANS: Please remit in U.S. Funds by Money Order only. ALSO, add \$1.25 to Postage charges for higher Postage costs.)

- One No. 4750 Weather House — \$5.98 plus 98¢ Postage & Handling.
- Two No. 4750 Weather Houses — \$9.98 plus 1.35 Postage & Handling.
- Three No. 4750 Weather Houses — \$13.95 plus 1.65 Postage & Handling.

No. 4833 Super DeLuxe Weather Houses — \$10.95 each plus 1.25 Postage & Handling. Total \$12.20.

N.Y.S. Residents MUST add Sales Tax.

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City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_



MARGUERITE CARTER

*“I came out  
a winner,  
thanks to you!”*

For almost a half-century, this soft-spoken, silver-haired woman has been the helping hand and guiding light to thousands of faithful followers across the United States and around the world. Marguerite Carter, astrologer-counselor, began back in the '30s when she rendered her unusual services for the nation's first lady, Hollywood stars and everyday folks that remained dedicated believers for decades. And, she is still at it!

There is good reason why she is still serving many of these people after all these years. They got the help they needed in the most intimate areas of their lives: romance, money, goals and making important changes.

They write: *“Your help has been priceless. I came out a winner, thanks to you!”* A.D., Mi. *“I have gained so much this year by studying my forecast. I didn't dream how correct it would be when I received it.”* S.C.; Te., and many more comments from persons who found very realistic guidance in getting what they wanted from life in their Unitology Forecast by Miss Carter. These are judgments and analyses by a counselor and not the product of a computer. They delve deeply into the most intimate areas of your life to provide guidance in times of decision, stress and with your most personal problems.

The things you want most in life needn't be out of your reach, says Marguerite Carter. “Many people are completely unaware that the opportunities for money, love, or advancement are passing them by almost daily. Ever-changing influences touch upon the vital areas of your life all during the year. It is important that you know when and how they work for you or against you.”

You can have this same guidance and help her clients found in getting what you want in life from her Forecast with Special Notations. Test her! See what she has to say about your life ahead. You'll be surprised!

Ask for Miss Carter's Forecast for your year ahead. It will be compiled to your birthdate information. Print month, day, year, place, hour of birth (if known), and include \$6.95 plus 75¢ for postage and handling. Allow three weeks for receipt.

Address: Marguerite Carter, Box F2, 546 S. Meridian St., Indianapolis, Indiana 46225.

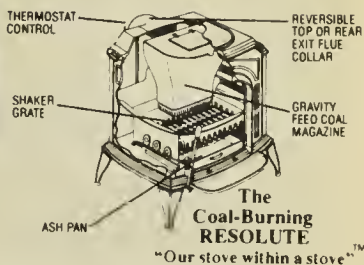
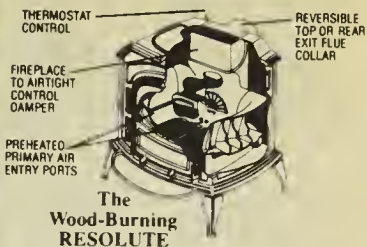


# FROM THE STATE OF VERMONT... COMES THE STATE OF THE ART



The RESOLUTE™ our smallest stove, shown in a coal-burning version. Ideally sized for smaller fireplace openings. Airtight glass doors allow you to enjoy the long-lasting warmth of a bed of glowing coals. Elegant styling complements any room decor.

## Classic Beauty and Advanced Thermal Engineering Combined in America's Finest Cast Iron Stoves



### Vermont Castings Defiant, Vigilant and Resolute are truly American Classics.

Each is built with the conviction that beauty and efficiency can be combined without compromise. Crafted by hand in solid cast iron, these superb airtight stoves offer you years of dependable, economical heat. The unique and graceful curve of the stove front, with its classically arched doors, is your symbol of original Vermont Castings design.

### Our unique wood-to-coal conversion unit.

The Vermont Castings Vigilant and Resolute are designed to burn either wood or coal with equally high efficiency. Our advanced thermal engineering and unique "stove within a stove" design make it possible.

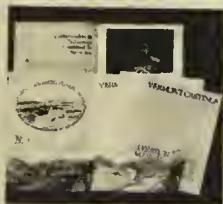
There's no fear of making a costly mistake in your choice of fuels—now, or later. The Vigilant and Resolute, to our knowledge, are the first stoves that offer a choice of heating at top performance levels with either wood or coal. And because they're truly convertible, you never have to worry about which fuel you decide to burn.

Each model offers features knowledgeable stove enthusiasts demand. Vermont Castings stoves make use of sophisticated baffling systems to provide extremely long flamepaths, which minimize flue heat loss. Preheated air passages and secondary combustion

chambers help maximize heat and fuel economy.

Automatic thermostat control allows you to pre-set your stove at the desired level of heat output to burn slowly for hours on a single smokeless loading.

**Before you buy any stove, mail coupon today for our complete ENERGY-SAVER INFORMATION KIT. Compare... then decide.**



- YES, please send me, without obligation, your Information Kit including full-color literature and Operation Manual. I enclose \$1 for first class postage and handling. I heat my home by:
- Oil  Gas  Electricity  Wood  Coal

Name \_\_\_\_\_

Address \_\_\_\_\_

City/State \_\_\_\_\_ Zip \_\_\_\_\_

**Vermont Castings™**  
**DEFIANT® VIGILANT® RESOLUTE™**  
America's Finest Cast Iron Stoves

VERMONT CASTINGS, INC., 3161 PRINCE STREET, RANDOLPH, VT 05060  
TELEPHONE: (802) 728-3111

# TILLER USERS!

NOW, At long last, HERE is the ONE machine EVERY Gardener should have!

The  
2-Machines-in-1

## TROY-BILT®

Roto Tiller-Power Composter

- It has its revolving tines in the REAR and POWERED WHEELS!
- It chops garden residues, weeds, green manure crops, old mulch, any kind of organic matter right into your garden soil *without unbearable tangling!* (See photo at right)
- It turns your whole garden into one big fabulously fertile "compost pile"!
- It handles so *easily* you guide it with just ONE HAND!
- It leaves NO wheelmarks—and you DON'T have to tramp on the nice, smooth soil you have just tilled or cultivated!



**FORGET "Front-End"  
Tillers like this!** →

- They tangle unbearably!
- They shake you half to death!
- They make you tramp on the soil you have just tilled or cultivated! They leave wheelmarks!
- They won't chop *anything* into your garden soil unless it has been "pre-digested" as in a compost pile, or unless it has been pre-chopped as in a separate, expensive chopper-shredder-grinder!
- They'll ruin your garden soil sure — unless you go to all that extra work and expense to put enough organic matter in your soil!
- They take so much of the joy out of gardening it is a downright tragedy they were ever invented!
- **SO — FORGET "FRONT-END" TILLERS!**
- Get a TROY-BILT and really enjoy that nice garden of yours more than you've ever dreamed possible!



Please mail the coupon for complete details, prices and OFF-SEASON SAVINGS now in effect. →

# Just **ONE HAND!**

*The wonderfully different  
and better idea in TILLERS!*

**The TROY-BILT®**  
Roto Tiller-Power Composter  
is so easy to handle  
your guide it with  
**Just ONE HAND!**



Now in two easy-to-use models—  
the “Horse” for large gardens, the “Pony” for small gardens.

- Has its revolving tines in the REAR instead of the FRONT!
- Has POWER DRIVEN WHEELS!
- You leave NO footprints or wheel-marks!
- Now, has 4-SPEEDS! “Whisper Quiet” Power Reverse!
- The TROY-BILT® Roto Tiller is built by the builders of the original famous ROTOTILLERS, which introduced rear-end tillage over 50 years ago. This latest and greatest of them all is now, more than ever, the favorite coast to coast with home gardeners, growers, nurserymen, tiller renters, landscape gardeners!
- Several models, including ELECTRIC STARTING!
- Does NOT tangle near as much as ordinary Tillers because it is actually TWO machines in ONE! Not only is it a great Tiller, it is also an extremely efficient COMPOST CHOPPER-SHREDDER!
- Does NOT require great strength... older people, ladies, too, operate it easily. We have many delighted owners in their 70's, 80's, even 90's who tell us they would have given up gardening if they did not have our Tillers!
- Instant depth control! Hood encloses tines for safety and for close cultivating!
- Furrowing, snow removal and other attachments available!
- Automotive-type engineering — precision gears and bearings, no chains to stretch, wear or work loose!
- Sold direct to keep prices down—would have to be at least \$125 higher if sold ordinary ways!
- Comes with our famous no-time-limit promise to you!
- Will GREATLY increase your gardening joy!

For heaven's sake, don't buy any other Tiller—don't put up any longer with the Tiller you now have! Mail the coupon NOW for complete details, prices OFF-SEASON SAVINGS on this wonderfully different and better idea in Tillers—The TROY-BILT® Roto Tiller-Power Composter.

TROY-BILT® Tillers, 102nd St. & 9th Ave., Troy, N.Y.

**TROY-BILT® Roto Tiller-Power Composters**  
**GARDEN WAY MFG. CO., INC.**  
Dept. A903  
102nd St. & Ninth Ave., Troy, NY 12180

Please send me the whole wonderful story of your 2-in-1 Roto Tiller-Power Composters with and without electric starting, including prices and OFF-SEASON SAVINGS now in effect.

Mr.  
 Mrs.  
 Ms. \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

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# BATH LIFT

**Mini-Elevator  
Water-Powered  
Fits All Bathtubs**



**NO ELECTRICITY!**  
Works off water pressure. Portable.  
Ideal for arthritis, M.S., Parkinson's, handicapped, etc.  
**Call Today.**  
Come in or write for free brochure.

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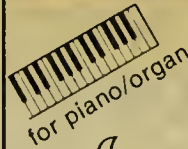
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(212) 933-4436 • (914) 423-4200

Please send for FREE patient aids catalog.

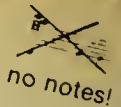
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Dept. OFA-2



for piano/organ



no notes!

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## **SECRET OF PLAYING BY EAR**

(The original book, profusely illustrated, coinciding with her famous audio/visual course at Arizona colleges)

It's for beginners and advanced ... for all ages ... for all who want to play by ear, transposing and improvising any type of music.

"This book is the missing link to music!" one student so aptly describes it.

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Satisfaction guaranteed! Or full refund in 30 days.

Visa/MC welcome

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Feel Run-Down, Worn-out, Unable and just plain Un-interested and blame your lack of Pep and Spark on Getting Old? Don't! It may be nutritional. Professionally formulated ROOSTER PILLS or XX-tra Strength ROOSTER KING TABS "MAN'S TONIC" with Zinc will help you get up "bright-eyed" and "Bushy-tailed" and "crown" again. Helps simulate new energy for men who crave action and vigorous living. Give you that get up and go. At your progressive drug store, if not, order direct. Druggist inquiry appreciated.



**XX-tra Strength**



**ROOSTER KINGS**

Send check, cash or money order  
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**THE SANAPAC CO.**  
Box 236, Dept. F2, Oallas, PA 18612

<b>ROOSTER KINGS</b>	<b>ROOSTER PILLS</b>
<input type="checkbox"/> 35 Tabs \$ 7.50	<input type="checkbox"/> 35 Pills \$ 5.00
<input type="checkbox"/> 70 Tabs \$12.00	<input type="checkbox"/> 70 Pills \$ 9.00

Prices include postage and handling

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_  
State \_\_\_\_\_ Zip \_\_\_\_\_



**ROOSTER PILLS**



# "Losing Hair? Try This At No Risk."

HOUSTON, Texas — If you don't suffer from male pattern baldness, you can now stop your hair loss . . . and grow more hair.

For years "they said it couldn't be done." But now a firm of laboratory consultants has developed a treatment for both men and women, that is not only stopping hair loss . . . but is really growing hair!

They don't even ask you to take their word for it. They invite you to try the treatment for 32 days, at their risk, and see for yourself!

Naturally, they would not offer this opportunity unless the treatment worked. However, it is impossible to help everyone.

The great majority of cases of excessive hair fall and baldness are the beginning and more fully developed stages of male pattern

baldness and cannot be helped.

But, if you are not already slick bald, how can you be sure what is actually causing your hair loss? Even if baldness may seem to "run in the family," it is certainly not proof of the cause of YOUR hair loss.

Hair loss caused by sebum can also run in your family, and many other conditions can cause hair loss. If you wait until you are slick bald and your hair roots are dead, you are beyond help. So, if you still have any hair on top of your head, and would like to stop your hair loss and grow more hair . . . now is the time to do something about it before it's too late.

Loesch Laboratory Consultants, Inc., will supply you with treatment for 32 days — at their risk — if they believe the treatment will help you. Just send them the information listed below. All inquiries are answered confidentially, by mail.

Adv.

## NO OBLIGATION COUPON

To: Loesch Laboratory Consultants, Inc.  
Dept. F-40, Box 66001, 3311 West Main St.  
Houston, Texas 77006

I am submitting the following information with the understanding that it will be kept strictly confidential and that I am under no obligation whatsoever.

Does your forehead become oily or greasy? \_\_\_\_\_

How soon after washing? \_\_\_\_\_

Do you have dandruff? \_\_\_\_\_ Dry or oily? \_\_\_\_\_

Does your scalp itch? \_\_\_\_\_ When? \_\_\_\_\_

How long has your hair been thinning? \_\_\_\_\_

Does hair pull out easily on top of head? \_\_\_\_\_

What percentage of hair remains on top of head? \_\_\_\_\_

Any thin areas? \_\_\_\_\_ Where? \_\_\_\_\_

Any slick bald areas? \_\_\_\_\_ Where? \_\_\_\_\_

Attach any other information you feel may be helpful.

NAME \_\_\_\_\_ SEX \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

# FREE

## Tomatoes The Size Of Grapefruits!

Yes, up to 6½ pounds of the most delicious, meaty, juicy tomatoes. The world's biggest tomato ever. So big, a single slice covers a plate; 10 to 15 slices per tomato, each slice weighs up to half a pound. For FREE packet of seeds PLUS giant catalog of blue ribbon plants, send 25¢ to cover postage & handling.

**Harvest Nursery Sales, Dept. TSG-24  
Roberts Lane, Glen Head, N.Y. 11545**

- 1 Packet of seeds 25¢ postage and handling.
- 2 Packets only 50¢ postage and handling.
- 5 Packets only \$1 postage and handling.

Enclosed is \$ \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

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# UN-SKRU

## Amazing New Jar Opener

### OPEN ANY SCREW LID IN 3 SECONDS!



New UN-SKRU Jar and Bottle Opener mounts permanently to underside of cabinet or shelf. Opens **every** size screw top—from tiny tube to gallon jar—with scarcely any effort. Even opens press-and-turn "child-proof" pill bottles. **"Best we've used"**—GOOD HOUSEKEEPING Featured by *Good Housekeeping* magazine as one of "Half-dozen kitchen helpers no cook should be without." Also handy in trailer, boat, workshop. Wonderful for folks with arthritis. Unique gift. You must be pleased, or your money back. Only **\$6.95** + 85¢ p&h; two for **\$13.50** + \$1 p&h. **20 day money back guarantee.** Send Check or M.O. Dept. OF-82, 1118 W. Lake, **HOLST, Inc.** Box 370, Tawas City, MI 48763



BEFORE

*Mr. Sniffles sez....*

...."NEW DOESN'T ALWAYS MEAN BETTER"

# KONDON'S<sup>®</sup> NASAL JELLY

HAS RELIEVED NASAL CONGESTION  
SINCE 1889

GENTLE • QUICK • PLEASANT • SOOTHING

For over 90 years, **KONDON'S NASAL JELLY** has helped millions of sufferers from head colds, hay fever, sinus allergies. It relieves congestion, soothes membranes, promotes easy breathing.

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**KONDON MFG. CO.**  
P.O. Box BF-223  
Crosswell, Mich. 48422



AFTER

# WATER FROM OUR OWN BACKYARD WELL

*Opelika, Alabama*—What can you buy for a nickel and still get some change back? 500 gallons of water, that's what! As a matter of fact, the electricity to pump 500 gallons from your own backyard well costs only four cents!

With this reliable, convenient source of water you can supply your home, your garden, and with a water well heat pump you can even heat and cool your home for a fraction of the cost of conventional systems!

In the past, the cost of drilling a well made it uneconomical for anyone who could hook on to city water mains. However, as city water becomes much more expensive, backyard wells have become more and more popular. To hold the cost of drilling a well to an affordable level, an easy-to-use low-cost machine has been developed for the homeowner who wants to drill his own. Called the *HYDRA-DRILL*, it is already in use around the world, and an estimated 60,000 Hydra-Drill wells have been drilled to date.

The Hydra-Drill can drill to depths of 200 feet, which puts you within reach of 90% of all the good fresh ground water in the world. The typical Hydra-Drill well can produce over 4,000 gallons of water each day—just compare that with the average U.S. family consumption of 500 gallons of water per day!

The Hydra-Drill is remarkably simple to operate. It is completely portable, and can be operated anywhere...even in places a truck-mounted drilling rig can't get. Yet it can drill most anything the big, truck-mounted rigs can drill, and drilling speeds range up to 40 feet per hour.

To find out more about the Hydra-Drill and how you can drill your own water well, send your name and address to: DeepRock Mfg., 5488 Ander-



son Road, Opelika, Alabama 36802. Or phone toll-free (800) 821-2280 (Ext.) 5488. There is no charge or obligation, and no salesman will call. Call anytime including Sundays.

CLIP COUPON AND MAIL TODAY!

DeepRock Mfg. Co.  
5488 Anderson Rd.  
Opelika, Alabama 36802

Please mail your free information kit immediately. I understand there is no obligation, and no salesman will call.

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City \_\_\_\_\_

State \_\_\_\_\_

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# RELIGIOUS GOODS AND CURIOS FOR YOUR PERSONAL FAITH AND COMFORT

## MANCATCHER BRAND SACHET

A delightful smelling sachet that makes one smell sweet and more feminine. Sprinkle around room to give it a nice smell.



No. 228 **ONLY \$2.98**

## LODESTONE PERFUME

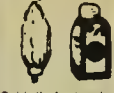
Truly one of Nature's wonders. Folks will just love its fragrant, subtle smell.



Specially priced at \$5.00 #120 3 For \$9.95  
Fragrant, exotic smell.

## GENUINE RABBITS FOOT and VERBENA OIL

Rabbit's foot makes a nice pocket piece  
Verbena oil makes your room free of evil odors \$5.00  
Value all for \$2.98  
Order by No. D17



## CHASES AWAY EVIL FOUL ODORS

Comes in 8 colors \$5.00  
SPECIAL 3 for \$9.95 #11




## MAGNETIC LODE STONE

Makes a really great pocket piece  
Give one to a friend  
#4 Only \$5.00  
Special 3 for \$9.95


## IMAGE CANDLES

Beautiful man & woman image candles come in Red, Green, Black & White. Now \$2.98 each. #205



## ADAM & EVE ROOT

Often carried as pocket pieces which some folk attach religious significance.



#10  
Now \$5.00 per set.  
3 sets for \$9.95

## HIGH JOHN THE CONQUORR also called JALAP ROOT


Carried by many as a pocket piece.



**ONLY \$5.00**  
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## GLORY WATER

Price \$5.00  
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Very popular here in Candle and incense Stores.



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Members of the opposite sex love the exotic smell



\$5.00  
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It is carried by many folks as a pocket piece. It is a weird and unusual looking root. Order #9  
Order #9 . . . ONLY \$5.00  
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Use this body lotion on your skin and be more appealing to men. Only \$4.98  
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Amaze friends with this shinning ring. In ancient Egypt they engraved figures of snakes on tombs and buildings and on crowns of Kings as a sign of might and power. Ring fits any finger. Price ONLY \$2.98.  
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## BEAUTIFUL "LOVE ME" BEADS


We call them "Love Me" because men like men like girls that are sweet and feminine. ONLY \$3.95



#237


## MUSTARD SEED

This mustard seed comes in pendant to be worn around the neck. #175  
SPECIAL \$4.98



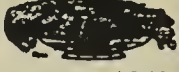
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Pleasantly attracts men, it is so feminine. #291 ONLY \$4.98




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## LOVERS DELIGHT INCENSE

Makes home smell sweet, fragrant and feminine. Price Only \$2.00  
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## CHEWING JOHN

great pocket piece  
Only \$5.00  
#17 3 for \$9.95



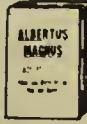
## CROSS OF CARAVACA

14 Kt Gold Pleted  
No home should be without one. ONLY \$2.98  
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## ALBERTUS MAGNUS

Amazing book claims to contain the hidden secrets of life for the good of mankind. Price Only \$4.98  
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## SALEP ROOT or FIVE FINGER ROOT

This makes an unusual pocket piece. #5  
Only \$5.00  
3 for \$9.95



## INCENSE CANDLE

Delightful smell. Black, Red, Green or Purple. \$2.00 per box  
3 boxes for \$5.00  
#64



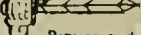
## OLD BLACK JOE'S ALL PURPOSE SPRINKLING SALTS

Gives room heavenly odor. ONLY \$2.00  
3 for \$5.00 #130




## SWORD OF ST. MICHAEL

Prayer and Sword to remind one of St. Michael's good works against evil. #6 ONLY \$2.98



## FIVE FINGER GRASS

Sold in religious stores. Folks use this as a reminder of how greet their God is. It is weird looking, has five fingers. No. 15  
ONLY \$5.00  
3 for \$9.95




## PINK LOVE ROOM SPRAY

A delightful heavenly odor to make your home smell attractive to men. ONLY \$5.98  
#107



MAIL YOUR ORDER TO: DEPT. CHURCH GOODS CO. 885 4910 W. ARMITAGE AVE., CHICAGO, ILL. 60639

FREE GIFT WITH \$5.00 ORDER OLD BLACK JOE'S SPRINKLING SALT

FREE GIFT WITH \$10.00 ORDER ENCHANTMENT PERFUME

Enclosed is \$  
Please add \$1.50 to help cover postage.

Order by Article Number	
Quantity	Number

If C.O.D. buyer pays postage and handling.

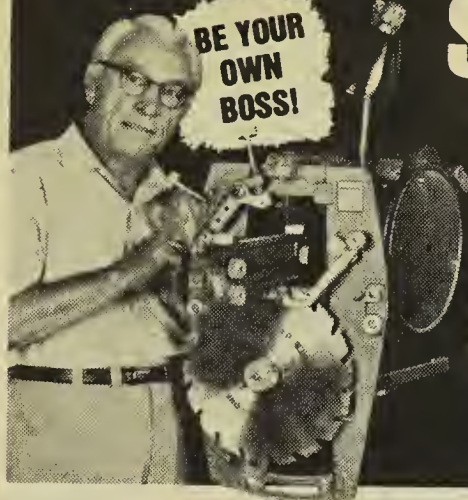
NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

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# Sharpening Business

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Make  
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An Hour  
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NO LAYOFFS...  
NO STRIKES!

**Earn EXTRA CASH INCOME** right  
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A sharpening business of your own offers many advantages. When you're the boss you work the hours you choose, and there's never a worry over strikes or a layoff. You have a year round income and keep 90% profit on every dollar you make. There is no expensive inventory, and you can work right out of your garage, basement or spare room... even a van makes a suitable mobile shop. Age education or minor handicaps are no barrier to success, and no selling or canvassing involved.

It's the ideal sparetime business too. Work evenings and weekends to earn extra cash for a 'rainy day' or retirement fund, or use the cash now to buy the extras you want. Hundreds of men have used the Foley plan successfully — you can do it too! Sharpening is easy to learn, easy on you. No previous experience or special skills necessary... no huge investment. There are no franchise or other fees involved since YOU own the business and put the profits in YOUR pocket.



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# What Your Doctor Doesn't Tell You About The Side Effects Of Prescription Drugs

You probably take drugs your doctor prescribes to feel better, to combat infection, to relieve pain, or to help you sleep. But drugs often cause side effects. This new, easy-to-understand book reveals the side effects before you start taking your prescription. Here are just a few of the 200 drugs in this book listed in alphabetical order.

## The Side Effects Of Prescription Drugs



Achromycin-V	Coumadin	Erythrocin	Lomotil		
Actifed	Dalmane	Erythromycin	Macrochantin	Peritrate	
Aldactazide	Darvocet-N	Esidrix	Medrol	Persantine	
Aldomet	Darvon-65	Fiorinal	Mellaril	Phenobarbital	Tenuate
Aldoril	Diabinese	Gantrisin	Meprobamate	Phenaphen	Tetracycline
Amoxicillin	Digoxin	HydroDiuril	Motrin	Prednisone	Thorazine
Amoxil	Dilantin	Hygroton	Naldecon	Premarin	Thyroid
Ampicillin	Dimetapp	Ilosone	Naprosyn	Pro-Banthine	Tolinaise
Antivert	Diuril	Inderal	Nitroglycerin	Reserpine	Tranxene
Apresoline	Donnatal	Indocin	Orinase	Salutensin	Triavil
Atarax	Drixoral	Isordil	Ornade	Ser-Ap-Es	Tuss-Ornade
Atromid-S	Dyazide	Keflex	Parafon Forte	Sinequan	Tylenol
Benadryl	E.E.S.	Lanoxin	Pavabid	Sorbitrate	V-Cillin K
Butazolidin	E-Mycin	Lasix	Pen-Vee-K	Sunycin	Valium
Chlor-Trimeton	Elavil	Librax	Penicillin VK	Synthroid	Vibramycin
Compazine	Empirin	Librium	Percodan	Tagamet	Zyloprim

These drugs cause such side effects as faintness, blurred vision, decreased sweating, diarrhea, dizziness, drowsiness, dry mouth, dry nose and throat, fluid retention, weight gain or loss, depression, fearfulness, headache, insomnia, itching, nasal congestion, heart palpitations, and upset stomach.

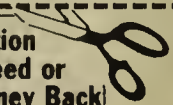
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# Now you don't have to spend a fortune to enjoy a complete home workshop



The Shopsmith MARK V — the tool to start with... the system you grow with.

It's a 10" table saw, a 16½" vertical drill press, a horizontal boring machine, a 34" lathe and a 12" disc sander.

### Experienced craftsman ... all-round handyman ... weekend do-it-yourselfer

— you've probably dreamed of owning your own complete home workshop to let you do more accurate woodworking. Let's face it, a few hand-held power tools just aren't enough. They won't let you handle those complex remodeling jobs, money-saving home repairs, or build furniture, cabinets and other beautiful wood projects.

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But these five most needed wood-working tools take up a lot of space, and could cost you several thousand dollars more than you can afford.

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... at about ONE-THIRD the cost and taking less space than a bicycle.

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This ingenious woodworking system is powered by a rugged 13.5 amp motor that develops more than 2 hp. That's more than enough power for the toughest jobs. An exclusive speed dial even lets you change operating speeds without turning off the motor.

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**ONCE ESTABLISHED . . . WATER JUST ONCE A WEEK . . .  
BE ABSOLUTELY AMAZED as  
ALL GROWING SEASON LONG—WEEK IN, WEEK OUT**

# **WONDER SHADE TREE ZOOMS UP TO ANOTHER 1/2-FOOT AFTER EVERY TIME YOU WATER IT!**

**and keeps on  
skyrocketing  
30-40-50-  
Even up to  
60 FEET  
HIGH,  
OR MORE,  
in less time  
than most  
trees nudge  
themselves  
a few feet  
off the ground.**

**Actually Soars  
Into A  
Magnificent Tree  
IN JUST ONE YEAR!**

Yes! Based on amazing growth rates reported by plant scientists—it grows SO FAST . . . arches out SO WIDE . . . you can actually take a ruler and measure the incredible difference in height every 2 to 3 days! OR, to really leave your neighbors gasping in awe and wonder, give them a yardstick and let them measure the difference IN FEET, every 2 to 3 weeks!

**GROWS MORE IN JUST ONE MONTH  
THAN MOST TREES  
GROW IN ENTIRE YEAR!**

Because according to plant experts, Govt. scientists and Botanical Gardens who researched this wonder-hybrid . . . once established, you merely water it once-a-week, and be absolutely floored as, during its SUPER-SOARING growing season, it GROWS AS MUCH AS A FULL 1/2-FOOT WEEKLY AFTER EVERY TIME YOU WATER IT!

That's right! Grows higher than even a full grown Flowering Dogwood IN JUST ONE SINGLE SEASON! Grows higher than even a full-grown Star Magnolia IN JUST ONE SINGLE YEAR! Yes, thrusts itself so high, so fast that it actually towers over even a Japanese Red Maple, Cherry Tree or even the most graceful silky Willow. In such a ridiculously short time you will simply refuse to believe your eyes! Think of it!

**NOTHING ELSE CAN MATCH  
IT IN ALL OF NATURE**



**PLANT NOW—REACH OUT AND  
TOUCH ITS LUSH, THICK BRANCHES  
FROM YOUR SECOND STORY  
BEDROOM WINDOW BY THE NEXT SUMMER!**

No doubt about it. There's just not another "Instant" Shade Tree like it on this planet! Because thanks to this miracle of plant science, instead of spending a small fortune on a tree and then waiting half a lifetime for it to grow . . . get set for the garden-wonder of your life as this



## GROWS MORE IN JUST ONE MONTH THAN MOST TREES GROW IN AN ENTIRE YEAR!

super-soaring hybrid rockets forth from a prize nursery-grown plant to a tower of roof-high beauty in less time than you ever dreamed possible.

### GROWS IN VIRTUALLY ANY SOIL —REQUIRES NO SPECIAL CARE— SOARS INTO A MASTERPIECE OF BEAUTY IN JUST A MATTER OF MONTHS!

Best of all, unlike most trees that demand constant care, constant pampering . . . about the only thing you do after you plant this super-growing wonder-hybrid is water it and enjoy it! That's why leading botanical gardens . . . landscape artists . . . garden editors . . . can't stop raving about its indescribable beauty . . . its trouble-free care . . . its surging, towering growth.

Small wonder that leading experts hail it in the most glowing terms . . . recommended it again and again for homeowners who want a stunning display of beauty . . . both a wind and privacy screen and deep, cool shade . . . and with practically no more work than a thorough watering each week!

#### VITAL STATISTICS FROM LEADING EXPERTS

**MATURE GROWTH SIZE:** as much as 40 to 65 feet

**MATURE SPREAD:** as much as 30 to 35 feet

**ZONE OF HARDINESS:** Hardy from the deepest South to as far North as Vermont, Minn., Quebec, British Columbia, Winter Hardy in areas where temp. drops as low as 30 degrees below zero.

**LIGHT NEEDS:** Grows beautifully in Sunny location.

**DECORATIVE MERITS:** Highly recommended by landscape architects as beautiful decorative specimens for homes, parks, highways, etc., where exceptional fast growth and beauty are required. Perfect for fast screening and privacy.

**RAPID RATE OF GROWTH:** Experts report growth rates on specimen trees that measure up to 8 FEET THE

VERY FIRST YEAR ALONE. That's more than most shade trees grow in 3 . . . 4 . . . 5 . . . even 7 years. Yes, once established will grow ranch-house-roof high IN JUST ONE SINGLE YEAR, that's right—The very next year after planting! Experts also report it soars an amazing 5 to 8 feet each year for YEARS thereafter. Naturally results are based on optimum growing conditions. Takes but 10 minutes to plant and normal care rewards you with a lifetime of beauty starting this very year.

**CARE:** Nothing special—just normal garden care. Water fully once weekly. Naturally resistant to most diseases, pests or insects.

### WE HAVE AT THIS MOMENT ONLY A LIMITED SUPPLY AVAILABLE FOR RELEASE TO THE PUBLIC— FULL SUPPLY WON'T BE READY UNTIL 1983 SO ACT NOW!

Now the price of this super growing shade tree is not \$20 or \$30 as you might expect, but a mere \$3.95!

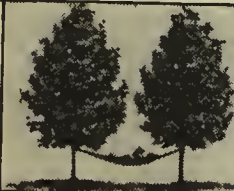
That's right, only \$3.95 for this magnificent Beauty that rewards you with such a glorious display of growth IN JUST ONE SINGLE YEAR. However, our supply is limited! Full supplies from the growing fields will not be ready until mid to late 1982 or early 1983. Therefore, all orders must be shipped on a first-come, first-shipped basis. To make sure you don't miss out . . . ACT NOW!

### SATISFACTION GUARANTEED OR MONEY BACK!

Remember: Satisfaction is fully guaranteed. You must be thrilled in every way with this spectacular f-a-s-t growing shade tree or RETURN AT ANYTIME within 90 days for a full refund of purchase price . . . ANYTIME within 1 year for free replacement. Could anything be fairer? Now is the time to order and replant—so send the no-risk coupon today!

### JUST MINUTES TO PLANT— SOARS UP TO ROOF-HIGH IN A SINGLE YEAR!

Here's a luxurious sight you don't have to wait half a lifetime growing—a matched pair of these towering show-pieces.



Picture your patio bathed in the cool beauty of this show-stopping miracle tree from early spring to the first snows of winter.



Just a few minutes planting time—a few seasons' growing time, rewards you with twin towers of beauty.



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### MAIL NO-RISK COUPON TODAY

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Yes, please rush me the SUPER GROWING POPLAR TREE(S) indicated below:

- (#001) 1 for only \$3.95 plus 75¢ postage and handling.
- (#002) 2 for only \$6.95 (SAVE OVER \$1) plus \$1.00 postage and handling.
- (#004) 4 for only \$10.00 (SAVE OVER \$7.00) plus \$1.50 postage and handling.
- (#010) 10 for only \$20.00 (SAVE OVER \$20.00) plus \$3.00 postage and handling.
- (#020) 20 for only \$30.00 (SAVE OVER \$55.00) plus \$5.00 postage and handling.

If after receiving my order I am not fully delighted, I may return anytime within 90 days and you will refund my purchase price in full (less postage and handling, of course).

Total amount enclosed \$\_\_\_\_\_ (N.Y. residents add sales tax.) No C.O.D.'s please.

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City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

## To Patrons

During the past 190 years, this publication has been read for a variety of reasons. Some people want to know the structure of the forthcoming year — i.e., when the heavenly bodies will rise and set each day and all the other astronomical information, which, when considered as a whole, indicates that the universe is far more orderly than our own day-to-day existence would indicate. Others need to know when to plant, fish, or plan a moonlight cruise. Then there are those who simply enjoy its tradition. It's fun to read something your great-great-grandfather also read. And a number of readers like seeing it hanging on the wall.

However, the most talked-about part of this, America's oldest continuously published periodical, is the weather forecasts. How do we do it? How accurate are they? Is it going to rain on the afternoon of August 22 in Topeka, Kansas?

First of all, the most basic assumption inherent in our forecasts, as we say on page 30, is that nothing in this universe occurs at random. We believe all phenomena have a cause and an effect, most in relationships far beyond present-day understanding. Nonetheless, these causes and effects are part of the Truth. Secondly, we feel earth's weather is mostly affected by the sun. Certainly ocean temperatures, the jet stream, the Bermuda high, and such affect our weather — but they, in turn, are affected by variations in solar activity and, we believe, interrelate in corresponding cycles. Nonsolar effects include the moon, major volcanic eruptions, large tracts of newly irrigated farmland, even forest fires. But evaluating the effects of these phenomena is a sort of fine tuning beyond our present capabilities.

We believe that the variation in solar activity is not occurring at random and is therefore predictable. It is to this purpose — predicting the variation of solar activity and then determining the orientation of the earth relative to that activity — that we devote our year-round energies and full-time services of solar scientist Dr. Richard Head, former Chief Scientist for N.A.S.A. during the 1960s. Confirming the overall results each year, but with fewer regional specifics, is the weather-forecasting formula devised by Robert B. Thomas in 1792. This complicated formula contains cycles that he and others of his day simply observed and recorded over a number of years. But our studies today would indicate that these observable cycles, like all others, are ultimately triggered by the sun's cycles. Thus our perception of weather has come full circle, beginning with, to put it simply, "looking outdoors," to deductions based on the most modern scientific methods, which now have joined forces with what we instinctively suspected all along!

How accurate are the forecasts? Well, for instance, if you consult them prior to picking the week of your skiing vacation, you'll do a whole lot better than guessing. In fact, scientists in various universities say we're as accurate as anyone in long-range forecasting today. But we're the first to admit that, like the media forecasters, we have a long way to go before achieving meaningful accuracy. As to predicting a rainstorm in Topeka, Kansas, on a certain August day — well, give us a little more time. We hope, however, it won't take another 190 years.

\* \* \*

*Besides Dr. Head and his weather data, we're indebted to many for this 1982 edition: To Susan Mahnke, assisted by Mary Cornog and Anna Larson, for a huge bulk of the editorial work. To John Pierce, Margo Letourneau, and Steve Klett and his staff for production, design, and typesetting. To Maureen McHugh for ad production; to astronomer George Greenstein; to Edie Clark, Tim Clark, and Andrew Rothovius for important editorial chores. Also, to Castle Freeman, Jr., for the Farmer's Calendar essays.*

However, it is by our works and not our words that we would be judged. These, we hope, will sustain us in the humble though proud station we have so long held in the name of

Your ob'd. servant,



Number One Hundred and Ninety

THE  
(OLD)

# FARMER'S ALMANACK,

CALCULATED ON A NEW AND IMPROVED PLAN  
FOR THE YEAR OF OUR LORD

# 1982

Being 2nd after BISSEXTILE or LEAP YEAR, and (until July 4)  
206th year of American Independence

FITTED FOR BOSTON, AND THE NEW ENGLAND STATES, WITH SPECIAL COR-  
RECTIONS AND CALCULATIONS TO ANSWER FOR ALL THE UNITED STATES.

Containing, besides the large number of Astronomical Calculations  
and the Farmer's Calendar for every month  
in the year, a variety of  
NEW, USEFUL, AND ENTERTAINING MATTER.  
ESTABLISHED IN 1792

BY ROBERT B. THOMAS



Our seasons have no fixed returns,  
Without our will they come and go;  
At noon our sudden summer burns,  
Ere sunset all is snow.

*James Russell Lowell*

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DUBLIN, NH 03444, U.S.A.

*Editor:*  
Jud Hale

# Introduction

*Including How to Use This Almanac Anywhere in the U.S.A.*

## THE LEFT-HAND CALENDAR PAGES

(Pages 38-64)

These pages will provide you with the phases of the moon; the hour and minute of the sun's rising and setting for each day of the year and month; the length of each day; the times of high tides in Boston in the morning and evening ("11 1/4" under "Full Sea Boston, A.M." means that the high tide that morning will be at 11:15 A.M. — with the number of feet of high tide shown for some of the dates on the right calendar pages); the hour and minutes of the moon's rising and setting; the declination of the sun in degrees and minutes (angular distance from the celestial equator); the moon's place in the heavens; and finally, in the far right column, the moon's age. The moon's place and age apply, without correction, throughout the United States.

The moon's place given on the left-hand pages is its *astronomical* place in the heavens. (Its *astrological* place is given on page 79. For more about astrology, see pages 78 and 151-153.) As well as the 12 constellations of the Zodiac, four other abbreviations appear in this column: Ophiuchus (OPH) is a constellation primarily north of the Zodiac, but with a small corner between Scorpio and Sagittarius. Orion (ORI) is a constellation whose northern limit just reaches the Zodiac between Taurus and Gemini. Sextans (SEX) lies south of the Zodiac except for a corner that just touches it near Leo. Cetus (CET) lies south of the Zodiac, just south of Pisces and Aries.

**Eastern Standard Time is used throughout this Almanac.** (Be sure to add one hour for Daylight Saving Time between April 25 and October 31.) Accompanying much of the data on the left-hand calendar pages are Key letters. These are provided so that the times given can be easily converted to anywhere in the United States — including Alaska and Hawaii. Here's how. . .

### Sunrise, Sunset

Note the Key letter to the right of each time for sunset and sunrise, in the column entitled "Key." To find the time of sunset or sunrise for your area, consult the Time Correction Tables (pages 70-74). Find your city or the city nearest you and locate the figure, expressed in minutes, in the appropriate Key letter column. Add, or subtract, that figure to the time given for Boston. The result will be accurate to within 5 minutes for latitudes north of 35°, 10 min. for lat. 30-35°, and 15 min. for lat. 25-30°. *Example:* April 11 (Easter) sunrise at 5:10 A.M. EST, with Key letter B. To find the time of sunrise in Cheyenne, Wy., look on page 70. Key letter B for Cheyenne is +14 min., so sunrise in Cheyenne is 5:24 A.M. MST. Use the same process for sunset.

### Moonrise, Moonset

Moonrise and moonset are figured the same way except that an additional correction factor (see table below) based on longitude should be used. For the longitude of your city, consult pages 70-74.

Longitude of city	58°-76°	77°-89°	90°-102°	103°-115°	116°-127°	128°-141°	142°-155°
Correction, minutes	0	+1	+2	+3	+4	+5	+6

*Example:* To determine moonrise in Austin, Texas, for September 3, 1982, see page 58. Moonrise in Boston is 6:47 P.M. with Key letter D. For Austin, time correction D (page 70) is +35 minutes, moving moonrise to 7:22 P.M.

The longitude of Austin is  $97^{\circ} 45'$ , so the additional correction is +2 minutes. Moonrise in Austin is therefore 8:24 P.M., CST. (Add one hour for Daylight Saving Time.) Follow the same procedure for moonset.

### Sundials

Also in the left-hand calendar pages is a column headed "Sun Fast." This is for changing sundial time into local clock time. A sundial reads natural, or sun, time which is neither Standard nor Daylight time except by coincidence. Simply *subtract* Sun Fast time to get local clock time and use Key letter C to correct the time for your city. (Add one hour for Daylight Saving Time April 25-October 31.)

<i>Example:</i>	Boston	Chicago
Sundial reading, Mar. 15	12:00	12:00
Subtract Sun Fast	-6	-6
Add Key C (for Chicago)		+5
Clock Time	11:54	11:59

### Rising and Setting of the Planets

The times of rising and setting of naked-eye planets, with the exception of Mercury, are given for Boston on pages 32-33. To convert these times to those of other localities (pages 70-74), follow the same procedure as that given for finding the times of sunrise and sunset.

### Length of Day

The "Length of Day" column for Boston (pages 38-64) tells how long the sun will be above the horizon. Use the Time Correction Tables (pages 70-74) to determine sunrise and sunset times for your city. Add 12 hours to the time of sunset, subtract the time of sunrise, and you have the length of day.

### Length of Twilight

Subtract from time of sunrise for dawn. Add to time of sunset for dark.

Latitude	25°N	31°N	37°N	43°N	48°N
	to 30°N	to 36°N	to 42°N	to 47°N	to 49°N
	h m	h m	h m	h m	h m
Jan. 1 to Apr. 10	1 20	1 26	1 33	1 42	1 50
Apr. 11 to May 2	1 23	1 28	1 39	1 51	2 04
May 3 to May 14	1 26	1 34	1 47	2 02	2 22
May 15 to May 25	1 29	1 38	1 52	2 13	2 42
May 26 to July 22	1 32	1 43	1 59	2 27	—
July 23 to Aug. 3	1 29	1 38	1 52	2 13	2 42
Aug. 4 to Aug. 14	1 26	1 34	1 47	2 02	2 22
Aug. 15 to Sept. 5	1 23	1 28	1 39	1 51	2 04
Sept. 6 to Dec. 31	1 20	1 26	1 33	1 42	1 50

### Dawn and Dark

The approximate times dawn will break and dark descend are found by applying the length of twilight taken from the table above to the times of sunrise and sunset at any specific place. The latitude of the place (see pages 70-74) determines the column from which the length of twilight is to be selected.

#### Boston (latitude $42^{\circ} 22'$ )

Sunrise Apr. 11	5:10 A.M.
Length of twilight	-1:39
Dawn breaks	3:31 A.M.
Sunset	6:21 P.M.
Length of twilight	+1:39
Dark descends	8:00 P.M.

#### Miami (latitude $25^{\circ} 47'$ )

Sunrise Apr. 11	6:02 A.M.
Length of twilight	-1:23
Dawn breaks	4:39 A.M.
Sunset	6:42 P.M.
Length of twilight	+1:23
Dark descends	8:05 P.M.



# THE RIGHT-HAND CALENDAR PAGES

(Pages 39-65)

These pages are a combination of astronomical data; specific dates in mainly the Anglican church calendar, inclusion of which has always been traditional in American and English almanacs (though we also include some other religious dates); tide heights at Boston (the left-hand calendar pages include the daily times of high tides; the corrections for your locality are on pages 76-77); quotations; anniversary dates; appropriate seasonal activities; and a rhyming version of the weather forecasts for the Northeast. (Detailed forecasts for the entire country are presented on pages 86-118.)

The following is a short summary of the highlights from this year's right-hand calendar pages, the signs used, and a sample (the first part of November 1981) of a calendar page explained. . . .

## Movable Feasts and Fasts for 1982

Epiphany . . . . .	Jan. 6	Low Sunday . . . . .	Apr. 18
Septuagesima Sunday . . . . .	Feb. 7	Rogation Sunday . . . . .	May 16
Shrove Sunday . . . . .	Feb. 21	Ascension Day . . . . .	May 20
Ash Wednesday . . . . .	Feb. 24	Whit Sunday-Pentecost . . . . .	May 30
Palm Sunday . . . . .	Apr. 4	Trinity Sunday . . . . .	June 6
Good Friday . . . . .	Apr. 9	Corpus Christi . . . . .	June 10
Easter Day . . . . .	Apr. 11	1st Sunday in Advent . . . . .	Nov. 28

## The Seasons of 1982

Winter (1981)	Dec. 21	5:51 P.M. E.S.T.	(Sun enters Capricorn)
Spring	Mar. 20	5:56 P.M. E.S.T.	(Sun enters Aries)
Summer	June 21	12:23 P.M. E.S.T.	(Sun enters Cancer)
Fall	Sept. 23	3:46 A.M. E.S.T.	(Sun enters Libra)
Winter (1982)	Dec. 21	11:39 P.M. E.S.T.	(Sun enters Capricorn)

## Chronological Cycles for 1982

Golden Number (Lunar Cycle) . . .	7	Roman (A.U.C.) . . .	2735	Jan. 14	
Epact . . . . .	5	Nabonassar . . . . .	2731	Apr. 28	
Solar Cycle . . . . .	3	Japanese . . . . .	2642	Jan. 1	
Dominical Letter . . . . .	C	Grecian . . . . .	2294	Sept. 14	
Roman Indiction . . . . .	5	(Seleucidæ) . . . . .	(or Oct. 14)		
Year of Julian Period . . . . .	6695	Indian (Saka) . . . . .	1904	Mar. 22	
<b>ERA</b>	<b>Year</b>	<b>Begins</b>	Diocletian . . . . .	1699	Sept. 11
Byzantine . . . . .	7491	Sept. 14	Islamic (Hegira) . . .	1403	Oct. 19
Jewish (A.M.) . . . . .	5743	Sept. 18	Chinese (Lunar) . . .	Dog	Jan. 25

## Determination of Earthquakes

Note, on right-hand pages 39-65, the dates when the moon (☾) "runs high" or "runs low." The date of the high begins the most likely five-day period of earthquakes in the northern hemisphere; the date of the low indicates a similar five-day period in the southern hemisphere. You will also find on these pages a notation for moon on the Equator (☾ on Eq.), twice each month. At this time, in both hemispheres, is a two-day earthquake period.

### Names and Characters of the Principal Planets and Aspects

Every now and again on these right-hand calendar pages, you will see symbols conjoined in groups to give you what is happening in the heavens. For example ☿♀♀ opposite January 9 on page 43 means that Mercury ☿ and Venus ♀ are on that date in conjunction ☿ or apparently near each other.

Here are the symbols used . . .

- ☉ The Sun.
  - ♀ Venus.
  - ♃ Jupiter.
  - ♆ Neptune.
  - ☾ ● ☾ The Moon.
  - ⊕ The Earth.
  - ♄ Saturn.
  - ♇ Pluto.
  - ☿ Mercury.
  - ♂ Mars.
  - ♅ Uranus.
- ☿ Conjunction, or in the same degree.      ♁ Ascending Node.  
 ♁ Opposition, or 180 degrees.              ♃ Descending Node.

### Sample Page (from November, 1981-page 39)

For detailed regional forecasts, see pages 86-118.

All Saints Day — a church feast that celebrates the conversion of the Pantheon in Rome into a Christian church in the 7th century.

Day of the month.  
Day of the week.

The Dominical Letter for 1981 is D, because the first Sunday of the year fell on the fourth day of January. The letter for 1982 is C.

The moon is at the descending node — it crosses the plane of the ecliptic as it moves southward.

Conjunction — closest apparent approach — of Mercury and Jupiter.

22nd Sunday after Pentecost. Events in the church calendar generally appear in this typeface.

The moon is located on the celestial equator.

Venus is at its greatest elongation — greatest distance east of the sun (47°) as seen from the earth.

The moon is at perigee — its closest approach to the earth.

DM	DW	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather
1	D	21 <sup>st</sup> <i>S. of H.</i> <b>All Saints</b>	Overcast
2	M.	All Souls <i>Politics makes strange postmasters.</i> Tides {8.4	won't
3	Tu.	♁ Gr. Elong. ♁♃ • (♁♃) • 1st auto show, N.Y. City, 1900	last.
4	W.	U.S. Embassy seized, Teheran, Iran, 1979. Erie Canal opened, 1825	{8.1 8.8 Last
5	Th	♁ ♀ ♃ Post office estab. for mail "beyond the seas," Boston, 1639	picnic
6	Fr.	James Naismith, inventor of basketball, b. 1861 • Tides {8.4	of the
7	Sa.	Last person publicly burned by Spanish Inquisition, 1783 • {8.9 9.3	season's
8	D	22 <sup>nd</sup> <i>S. of H.</i> <b>Tides</b> {9.5 9.8	within
9	M.	♁ on ♁. Ariz. drought declared worst in 700 yrs., 1956	reason.
10	Tu.	♁ Gr. Elong. ♁ E. 47° • ice oow meany mud at Christmas	Glowery
11	W.	St. Martin • Veterans' Day • Full Beaver	○ and
12	Th	♁ at ♁ peri. Every man over forty is responsible for his fee.	{11.9 10.8 showery.
13	Fr.	12 adults and 12 children settle Seattle, 1871 • {12.1 — Clearing	

Morning tide, shown to be at 7:45 A.M. on the left-hand page, will be 9.5 feet. Evening tide, at 8:00 P.M., will be 9.8 feet.

**NOTE: The values of Key Letters are given in the Time Correction Tables. (See pages 70-74.)**

## How the Almanac Weather Forecasts Are Made

Our weather forecasts are determined both by the use of a secret weather forecasting formula devised by the founder of this almanac in 1792 and by the most modern scientific calculations based on solar activity. We believe nothing in the universe occurs haphazardly; that there is a cause-and-effect pattern to all phenomena, including weather. It follows, therefore, that we believe weather is predictable. It is obvious, however, that neither we nor anyone else has as yet gained sufficient insight into the mysteries of the universe to predict weather with anything resembling total accuracy.

## Earth at Aphelion and Perihelion 1982

The Earth will be at Perihelion on January 4, 1982, when it will be 91.4 million miles from the Sun. The Earth will be at Aphelion on July 4, 1982, when it will be 94.5 million miles from the Sun.

## Holidays, 1982

(\*) Are recommended as holidays with pay for all employees. (\*\*) State holidays only.

- |   |   |
|---|---|
| Jan. 1 (*) New Year's Day   | June 1 (**) Jefferson Davis's Birthday<br>(Ala., Fla., Ga., Ky., Miss.) |
| Jan. 8 (**) Battle of New Orleans (La.)   | June 14 (**) Flag Day (Pa.)   |
| Jan. 15 (**) Martin Luther King's Birthday<br>(Conn., D.C., Fla., Ill., Ky., La., Md.,<br>Mass., N.J., N.Y., Oh., Pa., S.C.). Jan. 18<br>in Mich. | June 17 (**) Bunker Hill Day (Boston and<br>Suffolk Co., Mass.)         |
| Jan. 18 (**) Confederate Heroes Day<br>(Miss.); Lee-Jackson Day (Va.)   | June 19 (**) Juneteenth (Tex.)  |
| Jan. 19 (**) Robert E. Lee's Birthday<br>(Ark., Fla., Ga., La., N.C., S.C.,<br>Tenn.); Confederate Heroes Day (Tx.)                               | June 20 Father's Day  |
| Jan. 26 (**) General Douglas MacArthur<br>Day (Ark.)  | July 1 Dominion Day (Canada)  |
| Feb. 2 Groundhog Day  | July 4 (*) Independence Day   |
| Feb. 12 Abraham Lincoln's Birthday  | Aug. 2 (**) Colorado Day  |
| Feb. 14 Valentine's Day   | Aug. 9 (**) Victory Day (R.I.)  |
| Feb. 15 (*) George Washington's Birthday<br>(except N.C.)   | Aug. 16 (**) Bennington Battle Day (Vt.)                                |
| Feb. 24 Ash Wednesday   | Aug. 27 (**) Lyndon Johnson's Birthday<br>(Tx.)                         |
| Mar. 2 (**) Texas Independence Day  | Sept. 6 (*) Labor Day   |
| Mar. 17 (**) Evacuation Day (Boston); St.<br>Patrick's Day  | Sept. 9 (**) Admission Day (Cal.)                                       |
| Apr. 8 Passover   | Sept. 17 Citizenship Day  |
| Apr. 11 Easter  | Sept. 18 Rosh Hashanah  |
| Apr. 13 (**) Thomas Jefferson's Birthday<br>(Ala.)  | Sept. 26 American Indian Day  |
| Apr. 19 (**) Patriots Day (Me., Mass.)  | Sept. 27 Yom Kippur   |
| Apr. 22 (**) Arbor Day (Neb.)   | Oct. 5 Child Health Day   |
| Apr. 26 (**) Fast Day (N.H.)  | Oct. 11 (*) Columbus Day  |
| Apr. 27 Confederate Memorial Day (Ala.,<br>Fla., Miss.)   | Oct. 24 United Nations Day  |
| Apr. 30 Arbor Day (except Alas. and<br>Neb.)  | Oct. 31 Halloween   |
| May 1 May Day   | Nov. 1 (**) All Saints Day (La.)  |
| May 9 Mother's Day  | Nov. 2 General Election Day   |
| May 15 Armed Forces Day   | Nov. 4 (**) Will Rogers Day (Okla.)                                     |
| May 24 Victoria Day (Canada)  | Nov. 11 (*) Veterans Day (Armistice Day)                                |
| May 31 (*) Memorial Day   | Nov. 13 Sadie Hawkins Day   |
|   | Nov. 25 (*) Thanksgiving Day  |
|   | Dec. 10 (**) Wyoming Day  |
|   | Dec. 11 Hannukah  |
|   | Dec. 15 Bill of Rights Day  |
|   | Dec. 17 Wright Brothers Day   |
|   | Dec. 21 (**) Forefathers Day (New<br>England)                           |
|   | Dec. 25 (*) Christmas Day   |



## GLOSSARY

- Aph.** — **Aphelion:** Planet reaches point in its orbit farthest away from Sun.
- Apo.** — **Apogee:** Moon reaches point in its orbit farthest from Earth.
- Conj.** — **Conjunction:** Time of apparent closest approach to each other of any two heavenly bodies.
- Declination:** Measure of angular distance any celestial object lies perpendicularly north or south of celestial equator; analogous to terrestrial latitude. OFA gives declination at noon E.S.T.
- Dominical Letter:** Used for the ecclesiastical calendar and determined by the date on which the first Sunday of the year falls. If Jan. 1 is a Sunday, the Letter is A; if Jan. 2 is a Sunday, the Letter is B; and so to G when the first Sunday is Jan. 7. In leap years the Letter applies through February and then takes the Letter before.
- Eclipse, Annular:** An eclipse in which sunlight shows around the Moon.
- Eclipse, Lunar:** Opposition of Sun and Moon with Moon at or near node.
- Eclipse, Solar:** Conjunction of Sun and Moon with Moon at or near node.
- El.** — **Elongation:** Apparent angular distance of a member of the solar system from the Sun as seen from the Earth.
- Epact:** A number from 1 to 30 to harmonize the lunar year with the solar year, used for the ecclesiastical calendar. Indicates the moon's age on Jan. 1.
- Eq.** — **Equator:** A great circle of the Earth equidistant from the two poles.
- Equinox, Fall:** Sun passes from northern to southern hemisphere.
- Equinox, Spring:** Sun passes from southern to northern hemisphere.
- Gr. El.:** Greatest Elongation.
- Golden Number:** Denoting the year in the 19-year cycle of the Moon. The moon phases occur on the same dates every 19 years.
- Inf.** — **Inferior:** Conjunction in which the Planet is between the Sun and the Earth.
- Julian Period:** A period of 7,980 Julian years, being a period of agreement of solar and lunar cycles. Add 4713 to year to find Julian year.
- Moon's Age:** The number of days since the previous new moon. First Quarter: Right half of moon illuminated. Full Moon: Moon reaches opposition. Last Quarter: Left half of moon illuminated. New Moon: Sun and Moon in conjunction.
- Moon Runs High or Low:** Day of month moon is highest or lowest exactly above the South point of observer's horizon.
- Node:** Either of the two points where the moon's orbit intersects the ecliptic.
- Occultations:** Eclipses of stars by the Moon.
- Opposition:** Time when Sun and Moon or planet appear on opposite sides of the sky (El. 180 degrees).
- Perig.** — **Perigee:** Moon reaches point in its orbit closest to Earth.
- Perih.** — **Perihelion:** Planet reaches point in its orbit closest to Sun.
- R.A.** — **Right Ascension:** The coordinate on the celestial sphere analogous to longitude on the earth.
- Roman Indiction:** A cycle of 15 years established Jan. 1, A.D. 313 as a fiscal term. Add 3 to the number of years in the Christian era and divide by 15. The remainder is the year of Roman Indiction — no remainder is 15.
- Solar Cycle:** A period of 28 years, at the end of which the days of the month return to the same days of the week.
- Solstice, Summer:** Point at which the Sun is farthest north of the celestial equator; Sun enters Cancer. **Winter:** Point at which the Sun is farthest south of the celestial equator; Sun enters Capricorn.
- Stat.** — **Stationary:** Halt in apparent movement of a planet against the background of the stars just before the planet comes to opposition.
- Sunrise & Sunset:** Visible rising and setting of Sun's upper limb across the unobstructed horizon of an observer whose eyes are 15' above ground level.
- Sun Fast:** Subtract times given in this column from your sundial to arrive at the correct Standard Time.
- Sup.** — **Superior:** Superior Conjunction; indicates that the Sun is between the planet and the Earth.
- Twilight:** Begins or ends when stars of the sixth magnitude disappear or appear at the zenith; or when the Sun is about 18 degrees below the horizon.

# The Planets, 1982

Below are given the times of rising or setting of the planets Venus, Mars, Jupiter, and Saturn on the 1st, 11th, and 21st of each month. The time of rising or setting of any one of these planets on other days may be found with sufficient accuracy by interpolation. For an explanation of Key Letters (used in adjusting the times given here for Boston to the time in your town), see page 26 and pages 70-74. Key Letters appear below as capital letters following the time of rising or setting.

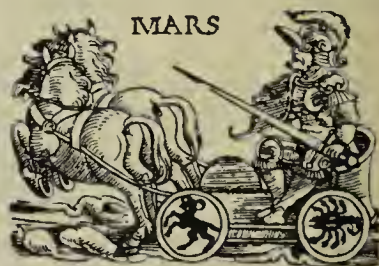


**VENUS** is brilliant in the west just after sunset in early January. It is too close to the sun to be seen in mid-month, then reappears in the morning sky in late January. It remains there until late September, when it again becomes invisible, only to return to the evening sky in mid-December. Venus is stationary on February 10th, and at its brightest on February 24th. It is in conjunction with the star Regulus on September 7th, and rises beside Saturn just before dawn during October.

**Boldface** — P.M. **Lightface** — A.M.

Jan. 1 . . . . . set 6:43 B	May 1 . . . . . rise 3:03 C	Sept. 1 . . . . . rise 3:41 B
Jan. 11 . . . . . " 5:58 B	May 11 . . . . . " 2:51 C	Sept. 11 . . . . . " 4:06 B
Jan. 21 . . . . . rise 6:37 D	May 21 . . . . . " 2:39 B	Sept. 21 . . . . . " 4:30 B
Feb. 1 . . . . . rise 5:30 D	June 1 . . . . . rise 2:27 B	Oct. 1 . . . . . rise 4:55 C
Feb. 11 . . . . . " 4:46 D	June 11 . . . . . " 2:17 B	Oct. 11 . . . . . " 5:19 C
Feb. 21 . . . . . " 4:18 D	June 21 . . . . . " 2:11 A	Oct. 21 . . . . . " 5:45 D
Mar. 1 . . . . . rise 4:04 D	July 1 . . . . . rise 2:09 A	Nov. 1 . . . . . rise 6:13 D
Mar. 11 . . . . . " 3:52 D	July 11 . . . . . " 2:11 A	Nov. 11 . . . . . set 4:33 A
Mar. 21 . . . . . " 3:43 D	July 21 . . . . . " 2:19 A	Nov. 21 . . . . . " 4:31 A
Apr. 1 . . . . . rise 3:34 D	Aug. 1 . . . . . rise 2:34 A	Dec. 1 . . . . . set 4:35 A
Apr. 11 . . . . . " 3:25 D	Aug. 11 . . . . . " 2:53 A	Dec. 11 . . . . . " 4:45 A
Apr. 21 . . . . . " 3:15 C	Aug. 21 . . . . . " 3:15 A	Dec. 21 . . . . . " 5:02 A
		Dec. 31 . . . . . set 5:23 A

**MARS** rises in late evening at the beginning of the year, in Virgo. It remains in Virgo until mid-August, then moves through Libra, Scorpio, and Ophiuchus into Sagittarius by late October. It is at opposition on March 31st, when it is above the horizon all night long. Mars is stationary on February 21st and May 13th, and is in conjunction with Saturn on July 9th and with Jupiter on August 9th. On November 19th Mars is occulted by the moon at sunset.



Jan. 1 . . . . . rise 11:29 A	May 1 . . . . . set 3:23 C	Sept. 1 . . . . . set 8:55 A
Jan. 11 . . . . . " 11:09 A	May 11 . . . . . " 2:40 C	Sept. 11 . . . . . " 8:34 A
Jan. 21 . . . . . " 10:46 C	May 21 . . . . . " 2:00 C	Sept. 21 . . . . . " 8:16 A
Feb. 1 . . . . . rise 10:16 C	June 1 . . . . . set 1:19 C	Oct. 1 . . . . . set 8:00 A
Feb. 11 . . . . . " 9:44 C	June 11 . . . . . " 12:44 C	Oct. 11 . . . . . " 7:47 A
Feb. 21 . . . . . " 9:07 C	June 21 . . . . . " 12:11 B	Oct. 21 . . . . . " 7:36 A
Mar. 1 . . . . . rise 8:32 C	July 1 . . . . . set 11:36 B	Nov. 1 . . . . . set 7:27 A
Mar. 11 . . . . . " 7:44 C	July 11 . . . . . " 11:07 B	Nov. 11 . . . . . " 7:22 A
Mar. 21 . . . . . " 6:49 C	July 21 . . . . . " 10:38 B	Nov. 21 . . . . . " 7:20 A
Apr. 1 . . . . . set 5:46 C	Aug. 1 . . . . . set 10:09 B	Dec. 1 . . . . . set 7:19 A
Apr. 11 . . . . . " 4:57 C	Aug. 11 . . . . . " 9:43 B	Dec. 11 . . . . . " 7:19 A
Apr. 21 . . . . . " 4:08 C	Aug. 21 . . . . . " 9:19 B	Dec. 21 . . . . . " 7:20 A
		Dec. 31 . . . . . set 7:22 B



**JUPITER** rises early in the morning during January, at mid-evening during February. It is visible in the evening sky from late July until late October, when it moves too close to the sun to be seen. Jupiter appears in the morning sky from late November until the end of the year. It is in opposition on April 25th, when it will be visible all night. It is in conjunction with Mars on August 9th, with the moon on November 13th.

**JUPITER**



Jan. 1 ..... rise 2:01 D	May 1 ..... set 4:39 B	Sept. 1 ..... set 8:34 B
Jan. 11 ..... " 1:29 A	May 11 ..... " 3:57 B	Sept. 11 ..... " 7:58 B
Jan. 21 ..... " 12:55 B	May 21 ..... " 3:15 B	Sept. 21 ..... " 7:24 B
Feb. 1 ..... rise 12:07 D	June 1 ..... set 2:29 B	Oct. 1 ..... set 6:50 B
Feb. 11 ..... " 11:36 D	June 11 ..... " 1:48 B	Oct. 11 ..... " 6:16 B
Feb. 21 ..... " 10:58 D	June 21 ..... " 1:07 B	Oct. 21 ..... " 5:42 B
Mar. 1 ..... rise 10:26 D	July 1 ..... set 12:28 B	Nov. 1 ..... set 5:06 B
Mar. 11 ..... " 9:45 D	July 11 ..... " 11:45 A	Nov. 11 ..... " 4:33 A
Mar. 21 ..... " 9:03 D	July 21 ..... " 11:07 B	Nov. 21 ..... rise 6:09 D
Apr. 1 ..... rise 8:14 D	Aug. 1 ..... set 10:26 B	Dec. 1 ..... rise 5:41 D
Apr. 11 ..... " 7:29 D	Aug. 11 ..... " 9:49 B	Dec. 11 ..... " 5:13 D
Apr. 21 ..... " 6:44 D	Aug. 21 ..... " 9:13 B	Dec. 21 ..... " 4:44 D

Dec. 31 ..... rise 4:15 E



**SATURN** spends the year in Virgo. It rises in early morning during January, at evening in February and March. Throughout April and May it is visible from evening until early morning. From early July until early October it is visible in the evening, then returns to the morning sky in early November. It is stationary on February 1st, close to Mars during March, and in opposition April 8th. It is in conjunction with Mars on July 9th and with Mercury on November 1st.

Jan. 1 ..... rise 12:44 C	May 1 ..... set 4:04 B	Sept. 1 ..... set 8:00 B
Jan. 11 ..... " 12:07 C	May 11 ..... " 3:23 B	Sept. 11 ..... " 7:23 B
Jan. 21 ..... " 11:25 C	May 21 ..... " 2:42 B	Sept. 21 ..... " 6:46 B
Feb. 1 ..... rise 10:42 C	June 1 ..... set 1:58 B	Oct. 1 ..... set 6:09 B
Feb. 11 ..... " 10:02 C	June 11 ..... " 1:18 B	Oct. 11 ..... " 5:33 B
Feb. 21 ..... " 9:21 C	June 21 ..... " 12:38 B	Oct. 21 ..... " 4:56 B
Mar. 1 ..... rise 8:48 C	July 1 ..... set 11:55 A	Nov. 1 ..... rise 5:12 D
Mar. 11 ..... " 8:06 C	July 11 ..... " 11:16 A	Nov. 11 ..... " 4:39 D
Mar. 21 ..... " 7:23 C	July 21 ..... " 10:38 B	Nov. 21 ..... " 4:05 D
Apr. 1 ..... rise 6:35 C	Aug. 1 ..... set 9:56 B	Dec. 1 ..... rise 3:32 D
Apr. 11 ..... set 5:26 B	Aug. 11 ..... " 9:18 B	Dec. 11 ..... " 2:57 D
Apr. 21 ..... " 4:45 B	Aug. 21 ..... " 8:41 B	Dec. 21 ..... " 2:22 D

Dec. 31 ..... rise 1:47 D

**MERCURY** can only be seen low in the east before sunrise, or low in the west after sunset (about the beginning or end of civil twilight). It is visible in the morning between the following approximate dates: February 7 to April 4; June 10 to July 18; October 8 to November 5. It is brighter at the end of each period; the third week of October is the best time to view it in northern latitudes. It is visible in the evenings between the following approximate dates: January 1 to January 26; April 19 to May 24; August 3 to September 27; December 6 to December 31. It is brighter at the beginning of each period; the first week of May is the best time to view it in northern latitudes.

*(A Planet is called Morning Star when it is above the horizon at sunrise, and Evening Star when it is above the horizon at sunset. Precisely, it is a Morning Star when it is less than 180° west of the Sun in right ascension, and Evening Star when it is less than 180° east. When a planet is near conjunction or opposition, the distinction is unimportant.)*



## ECLIPSES FOR 1982

There will be seven eclipses in 1982, four of the sun and three of the moon. Three of the seven will be visible in the United States and Canada.

**I. Total eclipse of the moon, January 9.** This eclipse will not be visible from North America, but can be seen from Asia, Australia, Europe, and Africa.

**II. Partial eclipse of the sun, January 25.** This eclipse will not be visible from North America. It can be seen in Antarctica and New Zealand.

**III. Partial eclipse of the sun, June 21.** This eclipse will not be visible from North America, nor from anywhere else except extreme southern Africa.

**IV. Total eclipse of the moon, July 6.** This eclipse will be visible from the United States and Canada. The phase of totality begins at 1:38 A.M. and ends at 3:24 A.M. E.S.T.

**V. Partial eclipse of the sun, July 20.** Visible from only the extreme north-western part of North America. The eclipse will occur between 7:40 and 8:00 P.M., local time.

**VI. Partial eclipse of the sun, December 15.** This eclipse will not be visible from North America, but can be seen from most of Europe, western Asia, and northeasternmost Africa.

**VII. Total eclipse of the moon, December 30.** This eclipse will be visible from the United States and Canada. The phase of totality begins at 5:58 A.M. and ends at 6:59 A.M. E.S.T.

### FULL MOON DAYS

	1982	1983	1984	1985	1986		1982	1983	1984	1985	1986
Jan.	9	28	17	7	25	July	6	24	13	2/31	21
Feb.	8	27	15	5	24	Aug.	4	23	12	30	19
Mar.	9	28	17	7	25	Sept.	3	22	10	29	18
Apr.	8	27	15	5	24	Oct.	2	21	10	28	17
May	7	26	15	4	23	Nov.	1/30	20	8	27	16
June	6	25	13	3	21	Dec.	30	19	8	27	16

### PRINCIPAL METEOR SHOWERS

(from the *Handbook of the British Astronomical Association*)

Shower	Date of Maximum	Approximate Peak Rate (/hr.)	Associated Comet
Quadrantid	Jan. 4	100	—
Lyrid	Apr. 21	15	1861 I
Eta Aquarid	May 4	18	Halley
Delta Aquarid	July 30	38	—
Perseid	Aug. 11-13	65	1862 III
Draconid	Oct. 9	10	Giacobini-Zinner
Orionid	Oct. 20	38	Halley
Taurid	Nov. 9	16	Enke
Andromedid	Nov. 25-27	10	Biela
Leonid	Nov. 16	15	1866 I
Geminid	Dec. 13	55	—

Date of actual maximum occurrence of counting rate may vary from the above nominal date by one or two days in either direction from year to year. Also, the best time to observe these meteor showers is after midnight, when the rotation of the earth is in the opposite direction to the motion of the meteor stream.

## BRIGHT STARS, 1982

The upper table shows the Eastern Standard Time when each star transits the meridian of Boston (i.e., lies directly above the horizon's south point there), and its altitude above that point at transit on the dates shown. The time of transit on any other date differs from that on the nearest date listed by approximately four minutes of time for each day. For a place outside Boston the local time of the star's transit is found by correcting the time at Boston by the value of Key Letter "C" for the place. (See footnote.)

Star	Constellation	Magni- tude	Time of Transit (E.S.T.)						Alt.
			Boldface—P.M.			Lightface—A.M.			
			Jan. 1	Mar. 1	May 1	July 1	Sept. 1	Nov. 1	
Altair	Aquila	0.9	<b>12 50</b>	<b>8 58</b>	<b>4 58</b>	<b>12 58</b>	<b>8 50</b>	<b>4 51</b>	56.3
Deneb	Cygnus	1.3	<b>1 41</b>	<b>9 49</b>	<b>5 49</b>	<b>1 49</b>	<b>9 41</b>	<b>5 41</b>	87.5
Fomalhaut	Psc. Austr.	1.3	<b>3 55</b>	<b>12 03</b>	<b>8 03</b>	<b>4 04</b>	<b>12 00</b>	<b>7 56</b>	17.8
Algol	Perseus	var.	<b>8 06</b>	<b>4 14</b>	<b>12 14</b>	<b>8 14</b>	<b>4 10</b>	<b>12 11</b>	88.5
Aldebaran	Taurus	1.1	<b>9 33</b>	<b>5 41</b>	<b>1 41</b>	<b>9 42</b>	<b>5 38</b>	<b>1 38</b>	64.1
Rigel	Orion	0.3	<b>10 12</b>	<b>6 20</b>	<b>2 20</b>	<b>10 20</b>	<b>6 16</b>	<b>2 16</b>	39.4
Capella	Auriga	0.2	<b>10 13</b>	<b>6 21</b>	<b>2 22</b>	<b>10 22</b>	<b>6 18</b>	<b>2 18</b>	85.4
Bellatrix	Orion	1.7	<b>10 22</b>	<b>6 30</b>	<b>2 30</b>	<b>10 31</b>	<b>6 27</b>	<b>2 27</b>	54.0
Betelgeuse	Orion	var.	<b>10 52</b>	<b>7 00</b>	<b>3 00</b>	<b>11 01</b>	<b>6 57</b>	<b>2 57</b>	55.0
Sirius	Can. Maj.	-1.6	<b>11 42</b>	<b>7 50</b>	<b>3 50</b>	<b>11 50</b>	<b>7 46</b>	<b>3 47</b>	31.0
Procyon	Can. Min.	0.5	<b>12 40</b>	<b>8 44</b>	<b>4 44</b>	<b>12 44</b>	<b>8 40</b>	<b>4 40</b>	52.9
Pollux	Gemini	1.2	<b>12 46</b>	<b>8 50</b>	<b>4 50</b>	<b>12 50</b>	<b>8 46</b>	<b>4 46</b>	75.7
Regulus	Leo	1.3	<b>3 09</b>	<b>11 13</b>	<b>7 13</b>	<b>3 13</b>	<b>11 09</b>	<b>7 09</b>	59.7
Spica	Virgo	1.2	<b>6 25</b>	<b>2 33</b>	<b>10 29</b>	<b>6 29</b>	<b>2 26</b>	<b>10 26</b>	36.6
Arcturus	Bootes	0.2	<b>7 16</b>	<b>3 24</b>	<b>11 20</b>	<b>7 20</b>	<b>3 16</b>	<b>11 17</b>	66.9
Antares	Scorpius	1.2	<b>9 29</b>	<b>5 37</b>	<b>1 37</b>	<b>9 33</b>	<b>5 29</b>	<b>1 29</b>	21.3
Vega	Lyra	0.1	<b>11 36</b>	<b>7 44</b>	<b>3 44</b>	<b>11 41</b>	<b>7 37</b>	<b>3 37</b>	86.4

**Risings and Settings.** The times of the star's rising and setting at Boston on any date are found by applying the interval shown to the time of the star's transit on that date. Subtract the interval for the star's rising; add it for its setting. The times for a place outside Boston are found by correcting the times found for Boston by the values of the Key Letters shown. (See footnote.) The directions in which the star rises and sets shown for Boston are generally useful throughout the United States. Deneb, Algol, Capella, and Vega are circumpolar stars — this means that they do not appear to rise or set but are above the horizon.

Star	Int. hr.m.	Rising Key Dir.	Setting Key Dir.	Star	Int. hr.m.	Rising Key Dir.	Setting Key Dir.
Altair	6 36	B EbN	D WbN	Sirius	5 00	D ESE	B WSW
Deneb		A NNE	E NNW	Procyon	6 23	B EbN	D WbN
Fomalhaut	3 59	E SE	A SW	Pollux	8 01	A NE	E NW
Algol	9 28	A NNE	E NNW	Regulus	6 49	B EbN	D WbN
Aldebaran	7 06	B ENE	D WNW	Spica	5 23	D EbS	B WbS
Rigel	5 33	D EbS	B WbS	Arcturus	7 19	A ENE	E WNW
Capella		A NNE	E NNW	Antares	4 17	E SEbE	A SWbW
Bellatrix	6 27	B EbN	D WbN	Vega	9 08	A NNE	E NNW
Betelgeuse	6 31	B EbN	D WbN				

**NOTE:** The values of Key Letters are given in the Time Correction Tables. (See pages 70-74.)

## LETTERS TO THE ASTRONOMER

Dr. George Greenstein, astronomer  
for *The Old Farmer's Almanac*, answers questions

*What are the rings of Saturn?*

When seen through a backyard telescope or a pair of binoculars, Saturn's rings appear to be solid, but in fact they are not. Photographs taken through giant telescopes have shown that we can actually see right through the rings: bright stars and even Saturn itself can be dimly seen shining through these lovely circular veils.

Saturn's rings are thought to be actually composed of countless numbers of small chunks of ice orbiting about the planet. We do not know just how big these celestial ice cubes are, but we do know that they must be bigger than, say, marbles, and smaller than a refrigerator. The individual pieces out of which these rings are made, then, must be quite ordinary things. But the structure that they combine to form is not: the rings of Saturn are nearly 200,000 miles across and they are utterly and absolutely flat. They are also exceedingly thin, a mere few miles in thickness at the very most, which makes them proportionately far thinner than a piece of paper.

Before the recent Voyager missions to Saturn it was believed that these rings were broken into a small number of subrings. Voyager has shown, however, that in fact the rings are composed of literally hundreds of separate strands. Whereas before Voyager we imagined Saturn's rings to be vast circular sheets, we now realize that they are composed of hundreds of perfectly circular tubes, themselves composed of innumerable chunks of ice.

*How many stars are visible on a clear night?*

About 2,000.

*Is it really true that toilets flush clockwise in the Northern Hemisphere and*

*counterclockwise in the Southern?*

No.

*Where is Voyager going to end up?*

The two Voyager spacecraft are moving faster than any other objects that we have launched into space, and they were targeted to pass by Jupiter, Saturn, and Uranus. But they will not cease their journeys once they have accomplished their missions. Each will continue sailing away into space, flying steadily and inexorably off to the stars.

Because there is no erosion in space, and because they draw their power from tiny onboard nuclear reactors, they should continue functioning for a very long time. Back home on the Earth man-made structures are exposed to all the vagaries of wind and weather, but the dark and stillness of interstellar space will protect these spacecraft as a dormant insect is protected by its cocoon. Long after the great pyramids of Egypt are eroded down to gravel, long after the human race that built them has forgotten their existence, these delicate machines will still be bright and shining new.

Not for many millions of years will either of them enter another solar system. By the time they do the human race very likely will have died out. But contained on board each mission is a detailed message to any extraterrestrial civilization that might pick it up. There are photographs of people, animals, machines, and landscapes. There are recordings of sound: of whale songs and human songs, sounds of footsteps and beating hearts, sounds of laughter and people speaking. And there is music, ranging from a Navaho chant to a Beethoven string quartet. Long after we are gone this faint echo of our existence will remain. ■ ■





# Cucumber and Beauty

by ANA MAHER

Every woman, at some time in her life, faces the spectre of an aging skin. Most women never solve the problem, and finally become resigned. A fortunate few find the answer and are rewarded with a complexion that remains fresh and youthful all their lives.

I had this skin problem 16 years ago. Nothing very serious, but when I took my mirror over to a bright light, I could detect evidence of dryness and tell-tale signs of advancing years. And I didn't like it. I knew that these were danger signals that warned of an aging skin.

I was also very bewildered. I had always taken the best care of my skin. And no matter what I did, my complexion showed no improvement. Finally I became resigned. After all, everybody gets older and most of us show our age.

Then one day I had a visit from an elderly widowed neighbor. This charming lady was about seventy, but she had the most beautiful, moist, youthful skin. I remarked about it and mentioned my own skin problem.

She told me she used a marvelous cream which had been formulated by her late husband, a physician, and that she made it herself. "Try it," she said, and then she left and returned with a jar of this cream.

So I tried using my neighbor's cream.

In only three weeks, I began to see a marked improvement. My skin was fresher, clearer, smoother. After two months, my former dry, dull skin was revitalized. My skin now had a youthful, almost translucent quality. I was thrilled with my neighbor's formula.

For six years, this kind lady kept me supplied with this cream. And I want to tell you that my skin was more vital and younger looking than it had been when I first started to use it, six years before.

Then my neighbor died suddenly — and with her went that wonderful cream and its secret ingredients. I was saddened by the loss of a good friend — and dejected by the loss of a miracle cream. Her family told me that her personal papers revealed no formulas of any kind. I was desperate. But I did have three jars left from the last batch she had made.

So I took the cream to one of the best known analytical cosmetic chemists. The cost of the analysis was enormous, but I got what I wanted. I had the wonder cream formula.

It had a base of pure cucumber juice, two super-moisturizers, three natural lubricants, and a special component to keep the cucumber juice fresh. My chemist told me that the formula consisted of only safe, pure ingredients — no hormones, estrogens or steroids.

I made a batch of cream for myself, following the chemist's instructions. Then my friends and relatives began using it. And in every case, the results were absolutely astounding.

Soon friends began insisting that the cream should be made known and available to all women, since the problem of aging skin is universal.

So my cream was put on the market 10 years ago, with the financial help of an uncle. It is called Cucumbre Frost.

The same wonderful results experienced by me, my friends and relatives were repeated time and time again by women all over the country. I have in my file hundreds of letters from grateful women telling of the remarkable results obtained with Cucumbre Frost.

Treatment is not a complicated ritual. I don't have time for that and the chances are you don't, either. You apply Cucumbre Frost at bedtime. Leave it on all night. It feeds, protects and nourishes your skin while you sleep.

I know what Cucumbre Frost can do for you. Therefore, I offer you this UNCONDITIONAL GUARANTEE. Try it. See for yourself in your own mirror how, after a few treatments, Cucumbre Frost helps revitalize dull, dry, aging skin. How, when used regularly, Cucumbre Frost helps facial skin to regain lost smoothness, moistness and freshness. Many women wrote me of astonishing results after only two weeks. Some take longer. But I say this to you: if, for any reason you are not delighted with Cucumbre Frost — return the unused portion to me for a complete refund. No questions asked.

You now have the opportunity to have a vital, youthful, lovely skin — at no risk. Cucumbre Frost can be purchased only by ordering it directly from me. Simply send your name, address and \$6.00 (cash, check or money order) to:

**ANA MAHER INC. • DEPT. 4511-K • 19 WEST 44th STREET, NEW YORK, N.Y. 10036**

1981

## NOVEMBER, THE ELEVENTH MONTH

On the 1st Venus lies about 6° south of the four-day-old moon. On the 10th it reaches its greatest elongation — 47° — east of the sun at 9:00 P.M. EST and appears as a dazzling object in the western sky for the rest of the year. Saturn is 3° south of the moon on the 22nd, Jupiter 4° south of the moon on the 23rd. Of the two planets, Jupiter now seems brighter. The Beaver Moon is full on the 11th. The 1st and 2nd are All Saints and All Souls Days, dedicated to all saints known and unknown and to the souls of everyone stuck in Purgatory, respectively. The 11th, Veterans' Day, is also St. Martin's. He was apostle to the Gauls and appeared at the gates of heaven in half a cloak, having given the other half to a freezing pauper. On the 25th in A.D. 310 St. Catherine was spared being skinned alive or ground into mincemeat when the machine to do these things was struck by lightning. She was beheaded instead. The 30th commemorates St. Andrew, patron saint of Scotland. Weather on the 21st sets the trend for winter.

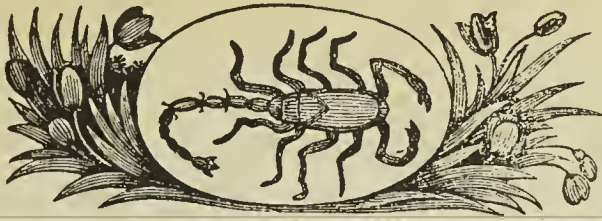
## ASTRONOMICAL CALCULATIONS

☾	First Quarter	4th day,	20th hour	09 min.
☉	Full Moon	11th day,	17th hour	28 min.
☾	Last Quarter	18th day,	9th hour	54 min.
●	New Moon	26th day,	9th hour	39 min.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS—PAGES 70-74

Day of Year	Day of Month	Day of Week	☉ Rises h. m.	Key	☉ Sets h. m.	Key	Length of Days h. m.	Sun Past	Full Sea Boston A.M. P.M.	☾ Rises h. m.	Key	☾ Sets h. m.	Key	Declination of sun °	☾ Place	☾ Age
305	1	D	6 19	D	4 37	B	10 18	31	1 <sup>3</sup> <sub>4</sub> 2	10 <sup>A</sup> <sub>M</sub> 31	E	8 <sup>P</sup> <sub>M</sub> 01	B	14s.33	OPH	5
306	2	M.	6 20	D	4 36	B	10 16	31	2 <sup>1</sup> <sub>2</sub> 2 <sup>3</sup> <sub>4</sub>	10 <sup>A</sup> <sub>M</sub> 21	E	8 50	B	14 52	SAG	6
307	3	Tu.	6 22	D	4 34	B	10 13	31	3 <sup>1</sup> <sub>4</sub> 3 <sup>1</sup> <sub>2</sub>	12 <sup>P</sup> <sub>M</sub> 08	E	9 45	B	15 11	SAG	7
308	4	W.	6 23	D	4 33	B	10 10	31	4 4 <sup>1</sup> <sub>4</sub>	12 49	E	10 45	B	15 29	SAG	8
309	5	Th.	6 24	D	4 32	B	10 08	31	5 5 <sup>1</sup> <sub>4</sub>	1 27	E	11 <sup>P</sup> <sub>M</sub> 48	C	15 47	CAP	9
310	6	Fr.	6 25	D	4 31	B	10 06	31	6 6 <sup>1</sup> <sub>4</sub>	2 01	D	—	—	16 05	CAP	10
311	7	Sa.	6 27	D	4 30	B	10 03	31	6 <sup>3</sup> <sub>4</sub> 7 <sup>1</sup> <sub>4</sub>	2 33	D	0 <sup>A</sup> <sub>M</sub> 54	C	16 23	AQU	11
312	8	D	6 28	D	4 29	B	10 01	31	7 7 <sup>3</sup> <sub>4</sub>	3 04	D	2 03	D	16 41	AQU	12
313	9	M.	6 29	D	4 28	B	9 58	31	8 <sup>1</sup> <sub>2</sub> 9	3 35	C	3 15	D	16 58	PSC	13
314	10	Tu.	6 30	D	4 27	A	9 56	31	9 <sup>1</sup> <sub>4</sub> 9 <sup>3</sup> <sub>4</sub>	4 08	C	4 30	D	17 15	CET	14
315	11	W.	6 31	D	4 26	A	9 54	31	10 10 <sup>2</sup> <sub>4</sub>	4 45	B	5 46	E	17 32	CET	15
316	12	Th.	6 32	D	4 24	A	9 52	31	11 11 <sup>1</sup> <sub>2</sub>	5 27	B	7 04	E	17 48	CET	16
317	13	Fr.	6 33	D	4 23	A	9 50	31	11 <sup>3</sup> <sub>4</sub> —	6 15	B	8 20	E	18 04	TAU	17
318	14	Sa.	6 34	D	4 23	A	9 49	31	12 12 <sup>3</sup> <sub>4</sub>	7 10	B	9 32	E	18 19	TAU	18
319	15	D	6 36	D	4 22	A	9 46	30	1 1 <sup>1</sup> <sub>2</sub>	8 12	B	10 36	E	18 35	GEM	19
320	16	M.	6 37	D	4 21	A	9 44	30	2 2 <sup>1</sup> <sub>2</sub>	9 17	B	11 <sup>A</sup> <sub>M</sub> 30	E	18 49	GEM	20
321	17	Tu.	6 38	D	4 20	A	9 42	30	3 3 <sup>1</sup> <sub>4</sub>	10 24	B	12 <sup>P</sup> <sub>M</sub> 15	E	19 04	CAN	21
322	18	W.	6 39	E	4 20	A	9 41	30	4 4 <sup>1</sup> <sub>4</sub>	11 <sup>P</sup> <sub>M</sub> 30	C	12 53	D	19 18	LEO	22
323	19	Th.	6 41	E	4 19	A	9 38	30	5 5 <sup>1</sup> <sub>4</sub>	—	—	1 25	D	19 32	LEO	23
324	20	Fr.	6 42	E	4 18	A	9 36	29	6 6 <sup>3</sup> <sub>4</sub>	0 <sup>A</sup> <sub>M</sub> 34	C	1 53	D	19 46	LEO	24
325	21	Sa.	6 43	E	4 17	A	9 34	29	7 7 <sup>3</sup> <sub>4</sub>	1 36	D	2 20	D	20 00	VIR	25
326	22	D	6 44	E	4 17	A	9 33	29	8 8 <sup>1</sup> <sub>2</sub>	2 37	D	2 45	C	20 13	VIR	26
327	23	M.	6 46	E	4 16	A	9 30	29	9 9 <sup>1</sup> <sub>4</sub>	3 36	D	3 10	B	20 25	VIR	27
328	24	Tu.	6 47	E	4 16	A	9 29	28	9 <sup>3</sup> <sub>4</sub> 10	4 36	E	3 37	B	20 37	VIR	28
329	25	W.	6 48	E	4 15	A	9 27	28	10 10 <sup>3</sup> <sub>4</sub>	5 35	E	4 06	B	20 49	LIB	29
330	26	Th.	6 49	E	4 15	A	9 26	28	10 <sup>3</sup> <sub>4</sub> 11 <sup>1</sup> <sub>2</sub>	6 34	E	4 39	B	21 00	LIB	0
331	27	Fr.	6 50	E	4 14	A	9 24	27	11 11 <sup>1</sup> <sub>2</sub>	7 31	E	5 15	B	21 11	OPH	1
332	28	Sa.	6 51	E	4 14	A	9 22	27	12 12 <sup>1</sup> <sub>2</sub>	8 26	E	5 57	B	21 22	OPH	2
333	29	D	6 52	E	4 13	A	9 21	27	12 <sup>3</sup> <sub>4</sub> 12 <sup>3</sup> <sub>4</sub>	9 18	E	6 45	B	21 33	SAG	3
334	30	M.	6 53	E	4 13	A	9 20	26	1 1 <sup>1</sup> <sub>4</sub>	10 <sup>A</sup> <sub>M</sub> 06	E	7 <sup>P</sup> <sub>M</sub> 38	B	21s.42	SAG	4





Besides the autumn poets sing,  
A few prosaic days  
A little this side of the snow  
And that side of the haze.

— Emily Dickinson

**Farmer's Calendar**

On the wooded hillsides and along the fence rows, closed down and subdued now against the snow that must be on the way, one tree stands out in this season. It's the white oak, which, when the other deciduous species have turned bare, remains fully leaved, though all its leaves are long since dead. Other northern oaks — red oak, black oak, chestnut oak — drop their leaves with the other trees. The white oak's hang on, though; they dry to the color of saddle leather. The beech, too, keeps its leaves long after fall is past. The beech is a forest tree, though; it doesn't grow in the open as much as the white oak does, and so we don't see it on a winter hillside.

Through the winter the white oak leaves endure, the trees releasing them a few at a time, as the big blizzards carry the leaves away. Their pale brown is a unique component of the winter spectrum, the snow having covered over the other brown things: dead ferns and brush, the fallen leaves of less tenacious trees. In the middle of the winter when the snow is three feet deep everywhere, you take notice of a brown cluster of oak leaves blowing across an open field like a hare that neglected to turn white.

One day next March or April it will strike you that the white oaks are bare. All their leaves have at last blown away. You'll wonder how long it was since the last one went before you noticed it was gone. When the branches of these oaks are at last empty of leaves, you'll see that the buds of the new year's leaves are full and growing. In a month they will open. It was the Indians, I think, who expected to plant their corn when the leaves of the white oak were the size of a mouse's ear.

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓
1	D	21 <sup>st</sup> S. af. P. All Saints	Overcast
2	M.	All Souls Politics makes strange postmasters.	Tides { 8.4 won't
3	Tu.	♀ Gr. Elong. • (at ♀) 1st auto show, N.Y. City, 1900	last.
4	W.	U.S. Embassy seized, Erie Canal opened, 1825	{ 8.1 Last
5	Th.	♂ ♀ ♀ Post office estab. for mail "beyond the seas," Boston, 1639	picnic
6	Fr.	James Naismith, inventor of basketball, b. 1861	• Tides { 8.4 of the
7	Sa.	Last person publicly burned by Spanish Inquisition, 1783	• { 8.9 season's
8	D	22 <sup>nd</sup> S. af. P. • Tides	{ 9.5 within
9	M.	☾ on Eq. • Ariz. drought declared worst in 700 yrs., 1956	reason.
10	Tu.	♀ Gr. Elong. • Ice now means mud at Christmas	Glowery
11	W.	St. Martin • Veterans' Day • Full Beaver	○ and
12	Th.	☾ at peri. Every man over forty is responsible for his face.	{ 11.9 showery.
13	Fr.	12 adults and 12 children settle Seattle, 1851	• { 10.8
14	Sa.	Sadie Hawkins • Moby Dick Day published, 1851	• Tides { 12.1 Clearing
15	D	23 <sup>rd</sup> S. af. P. • ☾ runs high	{ 10.7 blue
16	M.	(at ♀) Sam Rayburn • Toscanini conducted Aida, N.Y. City, 1908	air
17	Tu.	Samuel Gompers organized forerunner of AFL, 1881	• Tides { 9.6 is
18	W.	Mickey Mouse 1st drawn, 1928 • Earthquake, N.H., 1872	frisky —
19	Th.	♂ ♂ ☾ 54" snow. The Dalles, Ore., 1921	Tides { 9.1 rain's
20	Fr.	The sieve says to the needle, "You have a hole in your tail."	Tides { 9.4 risky.
21	Sa.	☾ on Eq. Mayflower Compact signed by 41 Pilgrims, 1620	{ 9.1 From
22	D	24 <sup>th</sup> S. af. P. • ☾ ♀ ☾ ☾ ☾	dismal
23	M.	♂ ♀ ☾ World War II food rationing ended, except sugar, 1945	• { 9.6 to
24	Tu.	Boston set 10-shilling fine for chimney fires, 1651	Tides { 9.7 abysmal.
25	W.	St. Catherine Meal of soup, steak, coffee, pie cost 12¢, N.Y. City, 1834	Sunny
26	Th.	Thanksgiving • New • ☾ at apo.	respite,
27	Fr.	Congress approved confiscating Loyalists' estates, 1777	Tides { 9.9 with
28	Sa.	♂ ♀ ☾ Ideas never work unless you do.	• { 8.9 thanks —
29	D	Advent • ☾ runs low	• Tides { 9.8 then
30	M.	St. Andrew • ♀ ♀ ☾ • (at ♀) snowbanks!	

One of the strangest things about life is that the poor, who need money the most, are the very ones that never have it.



1981

## DECEMBER, THE TWELFTH MONTH

Venus is bright in the west the evening of the 11th, night of the full Hunting Moon. The winter solstice falls on the 21st, shortest day of the year. Orion is low in the east in early evening, Cygnus low in the west, the Milky Way overhead. St. Nicholas Day, the 6th, celebrates the protector of sailors and schoolboys. Doubting St. Thomas, patron of architects and builders, is remembered on the 21st. The Jewish feast of Hanukkah also begins then, marking the day the Maccabees freed the temple from Syrian control. The temple's lamp subsequently burned for eight days on oil enough for only one. The 27th celebrates St. John the Evangelist, who died peacefully of old age despite exposure to a caldron of burning oil and a draught of poison. St. Sylvester, baptizer of Constantine, the first Christian emperor, claims the 31st. The twelve days of Christmas set the pattern for the year's weather, for those who want to keep track.

## ASTRONOMICAL CALCULATIONS

☾ First Quarter	4th day,	11th hour	23 min.
☉ Full Moon	11th day,	3rd hour	42 min.
☾ Last Quarter	18th day,	00 hour	49 min.
● New Moon	26th day,	5th hour	11 min.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS—PAGES 70-74

Day of Year	Day of Month	Day of Week	☼ Rises h. m.	Key	☽ Sets h. m.	Key	Length of Days h. m.	Sun Fast m.	Full Sea Boston A.M. P.M.	☾ Rises h. m.	Key	☾ Sets h. m.	Key	Declination of sun °	☾ Place	☾ Age	
335	1	Tu.	6 55	E	4 13	A	9 18	26	2	2 $\frac{1}{4}$	10 $\frac{A}{M}$ 49	E	8 $\frac{P}{M}$ 35	B	21s.52	SAG	5
336	2	W.	6 56	E	4 12	A	9 17	26	2 $\frac{3}{4}$	3	11 $\frac{A}{M}$ 27	E	9 36	B	22 00	CAP	6
337	3	Th.	6 57	E	4 12	A	9 15	25	3 $\frac{1}{2}$	3 $\frac{3}{4}$	12 $\frac{P}{M}$ 02	E	10 40	C	22 09	CAP	7
338	4	Fr.	6 58	E	4 12	A	9 14	25	4 $\frac{1}{2}$	4 $\frac{3}{4}$	12 33	D	11 $\frac{P}{M}$ 45	C	22 17	AQU	8
339	5	Sa.	6 59	E	4 12	A	9 13	24	5 $\frac{1}{4}$	5 $\frac{3}{4}$	1 03	D	—	—	22 24	AQU	9
340	6	<b>D</b>	7 00	E	4 12	A	9 12	24	6 $\frac{1}{4}$	6 $\frac{1}{2}$	1 33	D	0 $\frac{A}{M}$ 53	D	22 31	PSC	10
341	7	M.	7 01	E	4 11	A	9 11	24	7	7 $\frac{1}{2}$	2 04	C	2 04	D	22 38	CET	11
342	8	Tu.	7 02	E	4 11	A	9 10	23	8	8 $\frac{1}{2}$	2 36	C	3 17	E	22 45	PIS	12
343	9	W.	7 03	E	4 12	A	9 09	23	9	9 $\frac{1}{2}$	3 14	B	4 32	E	22 51	CET	13
344	10	Th.	7 04	E	4 12	A	9 08	22	9 $\frac{3}{4}$	10 $\frac{1}{4}$	3 59	B	5 50	E	22 56	TAU	14
345	11	Fr.	7 04	E	4 12	A	9 08	22	10 $\frac{1}{2}$	11 $\frac{1}{4}$	4 51	B	7 06	E	23 01	TAU	15
346	12	Sa.	7 05	E	4 12	A	9 07	21	11 $\frac{1}{2}$	—	5 51	B	8 15	E	23 06	TAU	16
347	13	<b>D</b>	7 06	E	4 13	A	9 07	21	12	12 $\frac{1}{2}$	6 57	B	9 17	E	23 10	GEM	17
348	14	M.	7 07	E	4 13	A	9 06	20	1	1 $\frac{1}{4}$	8 06	B	10 08	E	23 14	CAN	18
349	15	Tu.	7 07	E	4 13	A	9 06	20	2	2 $\frac{1}{4}$	9 15	C	10 51	E	23 17	CAN	19
350	16	W.	7 08	E	4 13	A	9 06	19	2 $\frac{3}{4}$	3	10 22	C	11 26	D	23 20	LEO	20
351	17	Th.	7 09	E	4 14	A	9 05	19	3 $\frac{3}{4}$	4	11 $\frac{P}{M}$ 27	C	11 $\frac{A}{M}$ 57	D	23 22	LEO	21
352	18	Fr.	7 09	E	4 14	A	9 05	18	4 $\frac{3}{4}$	5	—	—	12 $\frac{P}{M}$ 24	D	23 23	VIR	22
353	19	Sa.	7 10	E	4 14	A	9 04	18	5 $\frac{3}{4}$	6	0 $\frac{A}{M}$ 29	D	12 50	C	23 25	VIR	23
354	20	<b>D</b>	7 10	E	4 14	A	9 04	17	6 $\frac{3}{4}$	7	1 29	D	1 15	C	23 26	VIR	24
355	21	M.	7 11	E	4 15	A	9 04	17	7 $\frac{1}{2}$	8	2 28	D	1 41	B	23 26	VIR	25
356	22	Tu.	7 11	E	4 15	A	9 04	16	8 $\frac{1}{4}$	8 $\frac{3}{4}$	3 28	E	2 10	B	23 26	LIB	26
357	23	W.	7 12	E	4 16	A	9 04	16	9	9 $\frac{1}{2}$	4 27	E	2 40	B	23 25	LIB	27
358	24	Th.	7 12	E	4 17	A	9 05	16	9 $\frac{3}{4}$	10 $\frac{1}{4}$	5 25	E	3 15	B	23 24	OPH	28
359	25	Fr.	7 12	E	4 18	A	9 06	15	10 $\frac{1}{2}$	11	6 21	E	3 55	B	23 23	OPH	29
360	26	Sa.	7 12	E	4 18	A	9 06	14	11	11 $\frac{1}{2}$	7 15	E	4 41	B	23 20	SAG	0
361	27	<b>D</b>	7 13	E	4 19	A	9 06	14	11 $\frac{3}{4}$	—	8 05	E	5 33	B	23 18	SAG	1
362	28	M.	7 13	E	4 19	A	9 06	13	12 $\frac{1}{4}$	12 $\frac{1}{2}$	8 50	E	6 29	B	23 15	SAG	2
363	29	Tu.	7 13	E	4 19	A	9 06	13	1	1	9 29	E	7 29	B	23 12	CAP	3
364	30	W.	7 13	E	4 19	A	9 06	12	1 $\frac{1}{2}$	1 $\frac{3}{4}$	10 05	E	8 31	C	23 08	CAP	4
365	31	Th.	7 13	E	4 19	A	9 06	12	2 $\frac{1}{4}$	2 $\frac{1}{2}$	10 $\frac{A}{M}$ 37	D	9 $\frac{P}{M}$ 36	C	23s.04	AQU	5



Arrives the snow, and, driving o'er the fields,  
Seems nowhere to alight: the whited air  
Hides hills and woods, the river, and the heaven,  
And veils the farm-house at the garden's end.

— Ralph Waldo Emerson

**Farmer's Calendar**

One day this month you will wake in the morning a little earlier than you usually do, and you'll realize before you're fully alert that something has changed. You can't name it, but there is something that has awakened you. Then a car will go by outside, or you'll look up at the window, and you will know. Snow. The first big snow has fallen in the night. Last night you went to bed in fall, and now the next morning it is winter. You slept in one time and woke in another, like Rip Van Winkle.

Before you get up, lie in bed for a minute and see what it was that advised your sleeping senses of the first snowfall. Quiet advised them. The air, the trees, the house are hushed in the snow. The quiet following snow is different from the quiet in other seasons. What noises there are, are muffled. Light is changed, too. The early daylight when it comes in the window is nothing like the light that came in yesterday, before the snow. It's brighter, barer, for coming in from a white world. If you are up early enough to see the dawn you will see that the sunrise seems much more distant after snow than when it comes over a many-colored horizon.

Some part of you was aware of these changes before you woke. To changes in the weather, in the seasons, we are sensitive, despite our civilized removal from their influence. We never sleep. We are animals yet, a little bit. Politics, money, society, war, their changes can keep us from sleeping, but they can't wake us up. Changes in the atmosphere, the heavens, in the year, can. The first snowfall you won't hear, or, often, see, but its advent will bring you from the deepest sleep.

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓
1	Tu.	Antarctica Treaty signed, reserving area for peaceful activities, 1959	• {8.5 Gape
2	W.	<i>Unless you bear with the faults of a friend, you betray your own.</i>	• Tides {8.4 at
3	Th.	Oberlin College, 1st co-ed college, founded in Ohio, 1833	Tides {8.4 this
4	Fr.	Lillian Russell • Tides {8.5 snowscape.	{9.0
5	Sa.	<i>The narrower the mind, the broader the statement.</i>	• Tides {8.8 Bleak
6	D	<b>2<sup>nd</sup> S. Advent</b> St. Nicholas	• on Eq. and
7	M.	<i>God made man to hear some praise for what He'd done on the first 5 days.</i>	bleary,
8	Tu.	Conception of • Golda Meir	{10.5 slushy
9	W.	Virgim Mary d. 1978	{9.8 and
10	Th.	Emmett Kelly • Joel Chandler Harris b. 1848	Tides {11.1 dreary.
11	Fr.	♀ at ♂ sup. • ☾ peri. • Tides {11.6 Warm	{10.3
12	Sa.	Full Hunting ○ • 1st transatlantic radio signal, 1901	Warm
13	D	☾ runs high • Highest A.M. 12.1	reprieve
14	M.	time of year —	—
15	Tu.	<b>3<sup>rd</sup> S. Advent</b> • St. Lucy • ☾ at ♂	makes
16	W.	George Washington 1st miniature d. at Mt. Vernon, 1799	winter
17	Th.	Bill of Rights • 1st life insurance policy ratified, 1791	leave.
18	Fr.	♂ ♀ Gr. Brilliancy • Ember Day	Rigorous
19	Sa.	<i>Politeness is an easy virtue, and has great purchasing power.</i>	• Tides {9.4 cold
20	D	♂ ♂ ☾ • Ember Day	{9.7 takes
21	M.	♂ ♀ ☾ • ☾ on Eq. • Ember Day	hold —
22	Tu.	<b>4<sup>th</sup> S. Advent</b> Tides {9.0 quite bold!	{8.4
23	W.	St. Thomas • Hanukkah • Solstice 5:51 p.m. EST	• ♂ ♀ ☾
24	Th.	Sts. Cyril and Methodius Darryl F. Zanuck d. 1979	Frosting
25	Fr.	♂ ♂ ☾ • ☾ at apo. • Tides {9.4 of snow	{8.4
26	Sa.	FDR appointed Eisenhower Supreme Allied Commander in W. Europe, 1943	makes
27	D	<b>Christmas</b> ... and on earth peace, good will toward men.	angels
28	M.	St. Stephen • New • ☾ runs low	glow.
29	Tu.	<b>1<sup>st</sup> S. af. Christmas</b> • St. John • ☾ at ♂	• ☾ at ♂
30	W.	Innocents' Day Chewing gum patented, 1869	{8.7 Snowy
31	Th.	♂ ♀ ☾ YMCA organized, Boston, 1851	Tides {8.7 blast
		♀ stat. Rurtyard Kipling b. 1865	Tides {8.8 from the
		St. Sylvester <i>Begin the New Year square with every man.</i> — Rob't B. Thomas	{9.7 past.



On the 4th at 6:00 A.M. the earth will be at perihelion — its closest approach to the sun. An eclipse of the full moon on the 9th will not be visible from the United States, nor will the new moon's partial eclipse of the sun on the 25th. In the course of this one month there will be seven conjunctions. Venus shines brightly in the west shortly after sunset. Almost directly overhead the Milky Way spans the heavens from northwest to southeast. The brightest visible star, Sirius, rises about sunset. To the south rides Orion, with Taurus above it, the Pleiades still higher, and Cassiopeia to the north. On the 4th watch for the Quadrantid meteor shower, largest of all, with up to two shooting stars per minute. We gain 50 minutes of daylight during the month, most of it in the afternoon; as an old saying goes, "The days have lengthened one cock's stride." By the end of January day lasts as long as it did last mid-November.

ASTRONOMICAL CALCULATIONS

- ☽ First Quarter 2nd day, 23rd hour 47 min.
- Full Moon 9th day, 14th hour 54 min.
- ☾ Last Quarter 16th day, 18th hour 59 min.
- New Moon 24th day, 23rd hour 57 min.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS—PAGES 70-74

Day of Year	Day of Month	Day of Week	☀ Rises h. m.	☀ Key	☀ Sets h. m.	☀ Key	Length of Days h. m.	Sun Past m.	Full Sea Boston A.M. P.M.	☽ Rises h. m.	☽ Key	☽ Sets h. m.	☽ Key	Declination of sun °	☽ Place	☽ Age	
1	1	Fr.	7 14	E	4 22	A	9 08	11	3	3 1/4	11 <sup>M</sup> 06	D	10 <sup>P</sup> M41	C	22s.59	AQU	6
2	2	Sa.	7 14	E	4 23	A	9 09	11	4	4 1/4	11 <sup>M</sup> 34	D	11 <sup>P</sup> M49	D	22 53	PSC	7
3	3	<b>C</b>	7 14	E	4 24	A	9 10	11	4 3/4	5 1/4	12 <sup>P</sup> M03	C	—	—	22 48	CET	8
4	4	M.	7 14	E	4 25	A	9 11	10	5 1/4	6 1/4	12 34	C	12 <sup>M</sup> 58	D	22 42	PSC	9
5	5	Tu.	7 14	E	4 26	A	9 12	10	6 1/4	7	1 08	B	2 09	E	22 35	ARI	10
6	6	W.	7 14	E	4 27	A	9 13	9	7 1/4	8 1/4	1 47	B	3 23	E	22 28	TAU	11
7	7	Th.	7 13	E	4 28	A	9 15	9	8	9	2 34	B	4 38	E	22 21	TAU	12
8	8	Fr.	7 13	E	4 29	A	9 16	8	9	10	3 29	B	5 50	E	22 13	TAU	13
9	9	Sa.	7 13	E	4 30	A	9 17	8	10	11	4 32	B	6 55	E	22 04	GEM	14
10	10	<b>C</b>	7 13	E	4 31	A	9 18	8	11 1/4	—	5 41	B	7 53	E	21 55	GEM	15
11	11	M.	7 13	E	4 32	A	9 19	7	12	12 1/4	6 52	B	8 42	E	21 46	CAN	16
12	12	Tu.	7 12	E	4 33	A	9 21	7	12 3/4	1	8 02	C	9 22	D	21 36	LEO	17
13	13	W.	7 12	E	4 34	A	9 22	6	1 1/4	2	9 11	C	9 56	D	21 26	LEO	18
14	14	Th.	7 12	E	4 36	A	9 24	6	2 3/4	2 3/4	10 16	D	10 25	D	21 16	LEO	19
15	15	Fr.	7 11	E	4 37	A	9 26	6	3 1/4	3 1/4	11 <sup>P</sup> M18	D	10 52	C	21 05	VIR	20
16	16	Sa.	7 11	E	4 38	A	9 27	5	4 1/4	4 1/2	—	—	11 18	C	20 54	VIR	21
17	17	<b>C</b>	7 10	E	4 39	A	9 29	5	5	5 1/2	12 <sup>M</sup> 19	D	11 <sup>M</sup> 44	B	20 42	VIR	22
18	18	M.	7 10	E	4 40	A	9 30	5	6	6 1/2	1 19	E	12 <sup>P</sup> M12	B	20 30	LIB	23
19	19	Tu.	7 09	E	4 42	A	9 33	4	6 3/4	7 1/4	2 18	E	12 41	B	20 17	LIB	24
20	20	W.	7 08	E	4 43	A	9 35	4	7 1/4	8 1/4	3 17	E	1 15	B	20 04	SCO	25
21	21	Th.	7 08	E	4 44	A	9 36	4	8 1/4	9	4 13	E	1 53	B	19 51	OPH	26
22	22	Fr.	7 07	D	4 45	A	9 38	3	9 1/4	9 3/4	5 08	E	2 37	B	19 38	SAG	27
23	23	Sa.	7 06	D	4 47	A	9 41	3	10	10	5 59	E	3 26	B	19 24	SAG	28
24	24	<b>C</b>	7 05	D	4 48	A	9 43	3	10 3/4	11	6 46	E	4 22	B	19 10	SAG	0
25	25	M.	7 05	D	4 49	A	9 44	3	11 1/4	11 1/4	7 29	E	5 22	B	18 55	CAP	1
26	26	Tu.	7 04	D	4 50	A	9 46	2	—	12	8 06	E	6 24	B	18 40	CAP	2
27	27	W.	7 03	D	4 52	A	9 49	2	12 1/4	12 3/4	8 39	D	7 29	C	18 24	AQU	3
28	28	Th.	7 02	D	4 53	A	9 51	2	1 1/4	1 1/2	9 10	D	8 34	C	18 08	AQU	4
29	29	Fr.	7 01	D	4 54	A	9 53	2	1 3/4	2	9 38	D	9 41	D	17 52	PSC	5
30	30	Sa.	7 00	D	4 56	A	9 56	2	2 1/4	3	10 07	C	10 48	D	17 36	CET	6
31	31	<b>C</b>	6 59	D	4 57	A	9 58	2	3 1/2	3 3/4	10 <sup>M</sup> 36	C	11 <sup>P</sup> M03	D	17s.19	PSC	7





Here delicate snow-stars, out of the cloud,  
Come floating downward in airy play,  
Like spangles dropped from the glistening crowd  
That whiten by night the Milky Way.  
— William Cullen Bryant

**Farmer's Calendar**

If you shovel snow, remember two rules. *One:* The snow is bigger than you are — don't try to move it all at once, and don't try to move it too far. *Two:* The solace of work that is essentially vain, futile, or meaningless is Style — and if you're shoveling snow, then your work is futile, if any work is.

Watch your neighbors, see how they shovel snow. The man you see struggling to pitch an enormous shovel, on which is poised a block of snow the size of a hay-bale, is an amateur. If you're his friend, advise him to take it easy, or to get a snow-blower. If you're his life insurance agent, insist. In your own snow-shoveling, use a big shovel by all means, but take small bites. Don't heave the snow out of your path if you can help it; rather, just twist your wrist and let the snow slide off the shovel beside the path. And try to get to your shoveling soon after the snow has stopped falling. The longer you wait, the more time the snow has to settle, increasing its weight and increasing your work.

Try to shovel with style. Reflect that the goal of snow-shoveling is an unsatisfactory one: you will never see the end of it, there will be more snow tomorrow. Still, today's snow must be shoveled. Therefore make the act of shoveling, not the result, the object of your care. Take pains to shovel your paths straight, to make them of uniform breadth, and to cut your corners neat. Take your time. Make unneeded paths, detours, shortcuts, oxbows, dead-ends. If you have animals or small children, they will thank you. And you will have the satisfaction of knowing that you have overcome winter in the only way you ever can — by submitting to it, but gracefully and with style.

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓
1	Fr.	<b>Circumcision</b> • New Year's Day	<i>Cold</i>
2	Sa.	John D. Rockefeller organized Standard Oil, 1882 • Tides {9.0	<i>creeps</i>
3	C	Barometer 28.20" at Canton, N.Y., 1913 — record low inland • Tides {9.3	<i>low,</i>
4	M.	⊕ at perihelion • Vesuvius erupted, 1868 • Tides {9.1	<i>sky</i>
5	Tu.	Twelfth Night • Bassist Charlie Mingus d., 1979 • Tides {9.6	<i>weeps</i>
6	W.	<b>Epiphany</b> • Sam Rayburn b., 1882 • Tides {10.5	<i>snow.</i>
7	Th.	92.9 million shares of stock traded, N.Y. Stock Exchange, 1981 • Tides {9.2	<i>Milder,</i>
8	Fr.	♂ ♀ Spica • ☾ at peri. • Tides {11.3	<i>then</i>
9	Sa.	♂ ♀ ♀ • ☾ at ♀ • Full Wolf • Eclipse ☾ • ☾ runs high	<i>wilder.</i>
10	C	<b>1<sup>st</sup> S. af. Epiph.</b> • Tides {11.7	<i>Skins</i>
11	M.	Plough Monday • Hudson luxury 4-door sedan introduced, 1913	<i>of</i>
12	Tu.	Sun today fore-tells much wind. • Blizzard on Great Plains, 1888	{11.2
13	W.	James Oglethorpe arrived at Charleston with Georgia charter, 1733	{9.9
14	Th.	<b>St. Hilary</b> • Favorable day for birth of women. • Tides {10.7	<i>rain,</i>
15	Fr.	Martin Luther King, Jr., b. 1929 • ♂♂☾ • ☾ on Eq.	<i>again.</i>
16	Sa.	♀ Gr. Elong. • ♂ ♀☾ • Tides {9.2	<i>Mercury</i>
17	C	<b>2<sup>nd</sup> S. af. Epiph.</b> • ♂ ♀☾ • Tides {8.8	<i>falls,</i>
18	M.	Light burdens, long borne, grow heavy. • Cary Grant b. 1904 • Tides {9.0	<i>then</i>
19	Tu.	♂♂☾ • Pres. Eisenhower held first news conference on TV, 1955	{8.9
20	W.	Favorable day for birth of men. • ☾ at apo. • Tides {7.9	<i>snow</i>
21	Th.	<b>St. Agnes</b> • Occult. ♀ by ☾ • Tides {8.9	<i>squalls.</i>
22	Fr.	<b>St. Vincent</b> • ☽ stat. • Tides {9.3	<i>Bodes</i>
23	Sa.	☾ at ♀ • ☾ low • -16°, N.Y. City, 1780 • Tides {8.2	<i>well</i>
24	C	<b>3<sup>rd</sup> S. af. Epiph.</b> • Tides {9.5	<i>for</i>
25	M.	Conv. • Raccoons mate. • New • Eclipse ☾ • Tides {8.4	<i>bundling.</i>
26	Tu.	Theodore Roosevelt advised, "Speak softly and carry a big stick, you'll go far," 1900	<i>Blowing</i>
27	W.	"Tis hard for an empty bag to stand upright. • Tides {9.0	<i>snow</i>
28	Th.	"Brother, Can You Spare a Dime" released, 1932 • Tides {10.1	<i>makes</i>
29	Fr.	Thomas Paine b., Theford, England, 1737 • Tides {9.4	<i>snowbows.</i>
30	Sa.	Charles I. beheaded, 1649 • ☾ on Eq. • Tides {9.9	<i>Frozen</i>
31	C	<b>4<sup>th</sup> S. af. Epiph.</b> • ♀ inf. ♂ • Tides {9.7	<i>solid.</i>

1982

## FEBRUARY, THE SECOND MONTH

Mercury is in inferior conjunction on the 1st, and is only 49 million miles from us. Venus appears in the eastern sky in the early morning, and attains its greatest brilliancy of the year on the 24th. It becomes stationary — it seems to halt briefly in its erratic wandering against the constellations — on the 10th. Mars, Jupiter, and Saturn rise in mid-evening; Saturn is stationary on the 1st, Pluto on the 4th, Mercury on the 12th, Mars on the 21st, and Jupiter on the 24th. On the 8th, all stars pale before the full moon. Overhead, the Milky Way streams through Cassiopeia, Auriga, Gemini, and Taurus, and passes by Sirius in the south. Lent begins on the 24th, Ash Wednesday, 40 days before Easter. The exact date of Easter is determined by the Paschal full moon (not necessarily the same day as the astronomical full moon) and the vernal equinox. The earliest date for Easter is March 22nd; the latest possible date is April 25th. Mornings remain dark throughout February, but the sun stays up until 5:33 P.M. on the 28th, making a gain in daylight of 35 minutes this month.

## ASTRONOMICAL CALCULATIONS

☽ First Quarter	1st day,	9th hour	29 min.
○ Full Moon	8th day,	2nd hour	58 min.
☾ Last Quarter	15th day,	15th hour	22 min.
● New Moon	23rd day,	16th hour	14 min.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS—PAGES 70-74

Day of Year	Day of Month	Day of Week	☀ Rises h. m.	Key	☀ Sets h. m.	Key	Length of Days h. m.	Sun Past m.	Full Sea Boston A.M. P.M.	☽ Rises h. m.	Key	☽ Sets h. m.	Key	Declination of sun °	☽ Place	☽ Age	
32	1	M.	6 58	D	4 58	A	10 00	1	4 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>4</sub>	11 <sup>A</sup> <sub>M</sub> 08	B	— —	—	17s.02	CET	8
33	2	Tu.	6 57	D	4 59	A	10 02	1	5 <sup>1</sup> / <sub>4</sub>	5	11 <sup>A</sup> <sub>M</sub> 44	B	1 <sup>A</sup> <sub>M</sub> 08	D	16 45	TAU	9
34	3	W.	6 56	D	5 01	B	10 05	1	6 <sup>1</sup> / <sub>4</sub>	6	12 <sup>P</sup> <sub>M</sub> 25	B	2 20	E	16 28	TAU	10
35	4	Th.	6 55	D	5 02	B	10 07	1	7 <sup>1</sup> / <sub>4</sub>	7	1 14	B	3 31	E	16 10	TAU	11
36	5	Fr.	6 54	D	5 03	B	10 09	1	8 <sup>1</sup> / <sub>4</sub>	9	2 12	B	4 38	E	15 52	GEM	12
37	6	Sa.	6 53	D	5 05	B	10 12	1	9 <sup>1</sup> / <sub>4</sub>	9 <sup>3</sup> / <sub>4</sub>	3 17	B	5 37	E	15 33	GEM	13
38	7	<b>C</b>	6 52	D	5 06	B	10 14	1	10 <sup>1</sup> / <sub>4</sub>	10	4 27	B	6 30	E	15 15	CAN	14
39	8	M.	6 50	D	5 07	B	10 17	1	11	11	5 38	B	7 14	E	14 56	LEO	15
40	9	Tu.	6 49	D	5 09	B	10 20	1	11 <sup>3</sup> / <sub>4</sub>	—	6 48	C	7 51	D	14 36	LEO	16
41	10	W.	6 48	D	5 10	B	10 22	1	12 <sup>1</sup> / <sub>4</sub>	12 <sup>3</sup> / <sub>4</sub>	7 56	C	8 22	D	14 17	LEO	17
42	11	Th.	6 47	D	5 11	B	10 24	1	1 1 <sup>1</sup> / <sub>4</sub>	1 9	9 02	D	8 51	D	13 57	VIR	18
43	12	Fr.	6 45	D	5 12	B	10 27	1	2 2	2 1 <sup>1</sup> / <sub>4</sub>	10 05	D	9 18	C	13 37	VIR	19
44	13	Sa.	6 44	D	5 14	B	10 30	1	2 <sup>3</sup> / <sub>4</sub>	3	11 <sup>P</sup> <sub>M</sub> 07	D	9 44	C	13 17	VIR	20
45	14	<b>C</b>	6 43	D	5 15	B	10 32	1	3 <sup>1</sup> / <sub>4</sub>	4	— —	—	10 12	B	12 57	LIB	21
46	15	M.	6 41	D	5 16	B	10 35	1	4 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>4</sub>	12 <sup>A</sup> <sub>M</sub> 07	E	10 41	B	12 37	LIB	22
47	16	Tu.	6 40	D	5 18	B	10 38	1	5 <sup>1</sup> / <sub>4</sub>	5	1 06	E	11 13	B	12 16	SCO	23
48	17	W.	6 38	D	5 19	B	10 41	1	6	6	2 04	E	11 <sup>A</sup> <sub>M</sub> 49	B	11 55	OPH	24
49	18	Th.	6 37	D	5 20	B	10 43	1	7	7	2 59	E	12 <sup>M30</sup>	B	11 34	SAG	25
50	19	Fr.	6 36	D	5 21	B	10 45	1	7 <sup>3</sup> / <sub>4</sub>	8	3 52	E	1 17	B	11 13	SAG	26
51	20	Sa.	6 34	D	5 23	B	10 49	1	8 <sup>3</sup> / <sub>4</sub>	9	4 41	E	2 11	B	10 51	SAG	27
52	21	<b>C</b>	6 33	D	5 24	B	10 51	1	9 <sup>1</sup> / <sub>2</sub>	10	5 25	E	3 09	B	10 30	CAP	28
53	22	M.	6 31	D	5 25	B	10 54	1	10 <sup>1</sup> / <sub>4</sub>	10 <sup>3</sup> / <sub>4</sub>	6 04	E	4 11	B	10 08	CAP	29
54	23	Tu.	6 30	D	5 26	B	10 56	2	11	11 <sup>1</sup> / <sub>4</sub>	6 39	D	5 17	C	9 46	AQU	0
55	24	W.	6 28	D	5 28	B	11 00	2	11 <sup>1</sup> / <sub>2</sub>	—	7 11	D	6 23	C	9 24	AQU	1
56	25	Th.	6 26	D	5 29	B	11 03	2	12	12 <sup>1</sup> / <sub>4</sub>	7 41	D	7 31	D	9 01	AQU	2
57	26	Fr.	6 25	D	5 30	B	11 05	2	12 <sup>3</sup> / <sub>4</sub>	1	8 10	C	8 40	D	8 39	CET	3
58	27	Sa.	6 23	D	5 31	B	11 08	2	1 1 <sup>1</sup> / <sub>2</sub>	1 3 <sup>1</sup> / <sub>4</sub>	8 39	C	9 50	E	8 16	PSC	4
59	28	<b>C</b>	6 22	D	5 33	B	11 11	2	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	9 <sup>A</sup> <sub>M</sub> 10	C	11 <sup>P</sup> <sub>M</sub> 00	E	7s.54	CET	5





All the valley is shut in  
By flickering curtains gray and thin.  
But cheerily the chickadee  
Singeth to me on fence and tree.  
— John Townsend Trowbridge

**Farmer's Calendar**

I find the coldest nights make me uneasy. When I wake in the morning my senses know before I leave the bed that when I look at the thermometer I'll see twenty below, twenty-five below. The air is perfectly still. Outside the light is weak. When you go out the cold astonishes you for a moment, makes you catch your breath. It takes you by the throat and seems to sear your lungs. In a minute, if you look around, you'll find yourself in a kind of dream world — the peculiar world of twenty below. It's quiet: birds don't call, and no wind rattles the trees.

The world of twenty below is a little like the world underwater. In it, everything takes longer than it should. Common materials are changed in the deep cold: wood, leather, rubber, metals yield slowly, move together with difficulty. Nothing slips along as it should. Machinery, objects, bodies are in a trance of cold. The gears of the car move stiffly; it rolls slowly, if it rolls at all. At night you can go outside and see the stars glitter with a new fierceness in the cold air. In a minute you will feel your ears freezing.

I imagine the deepest cold as a great bell that is slowly, silently lowered over our house by night, sealing it off, isolating it, while we sleep. Our houses were built to withstand visitations of the world of twenty below, but not to thrive on them. Mine is old and drafty. On the coldest nights I lie awake imagining the bell descending, imagining I hear the water freezing in the pipes, and the frost ferns growing on the night window panes. In the attic the points of the roofing nails are frozen where they come through the roof. Each point has a drop of frost. By flashlight the dark attic is a planetarium.

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather
1	M.	$\frac{1}{2}$ stat. • -45°, Pittsburg, N.H., 1920 • Tides {9.7	<i>Getting cloudy,</i>
2	Tu.	<b>Candlemas</b> • Purif. of Mary • Groundhog Day • Tides {9.0	
3	W.	16th Amendment ratified, permitting federal income tax, 1913 • Tides {10.0	<i>then wild and rowdy.</i>
4	Th.	$\square$ stat. • Tropical storm, Bahamas, 1952 • Tides {8.8	
5	Fr.	<b>St. Agatha</b> • at peri. • Roger Williams b. 1604 • Tides {8.9	<i>Wet every which way.</i>
6	Sa.	(at $\infty$ ) • runs high • Tides {10.9	
7	C	<b>Septuagesima</b> • Tides {11.1	<i>Ill winds blow rain and snow.</i>
8	M.	Full Snow • "Turkey Trot" dance intro., N.Y.C., 1912 • Tides {9.8	
9	Tu.	<i>A cool mouth and warm feet make a long life.</i> • Tides {11.2	<i>Sunny thaw slides to wet and raw.</i>
10	W.	St. Paul shipwrecked at Malta • ♀ stat. • Tides {10.1	
11	Th.	Mass. senate districts redrawn, first example of "gerrymandering," 1812 • Tides {10.9	<i>Warm? Just teasin' — it's sore throat season.</i>
12	Fr.	Lincoln's Birthday • ♂♂♂♂♂♂♂♂ • ♀ stat. • on Eq. • Tides {9.6	
13	Sa.	Ice flows blocked Miss. River at New Orleans, 1784 • Tides {9.3	<i>Just teasin' — it's sore throat season.</i>
14	C	<b>Sexagesima</b> • Valentine's Day • ♂ ♀	
15	M.	Washington's Birthday • Winter's back breaks • Tides {8.7	<i>Just teasin' — it's sore throat season.</i>
16	Tu.	♂♂♂ • Nylon patented by W.H. Carothers, 1937. • Tides {7.8	
17	W.	1st redwing blackbird, Block Island, 1942 • at apo. • Tides {8.6	<i>Just teasin' — it's sore throat season.</i>
18	Th.	Occult. ♀ by ♀ Pluto discovered, 1930 • Tides {7.6	
19	Fr.	(runs low • Japan invaded Bali, 1942 • Tides {8.8	<i>Just teasin' — it's sore throat season.</i>
20	Sa.	♂♀♂ • (at $\infty$ ) • Alice Roosevelt Longworth d., 1980 • Tides {7.8	
21	C	<b>Quinquagesima</b> • ♂♀♂♂♂ stat. • Tides {9.8	<i>Just teasin' — it's sore throat season.</i>
22	M.	<i>Look before, or you'll find yourself behind.</i> • Tides {8.9	
23	Tu.	<b>Shrove Tues.</b> • New • Tides {9.9	<i>Just teasin' — it's sore throat season.</i>
24	W.	<b>Ash Wed.</b> • ♀ stat. • ♀ Greatest Brilliancy • Tides {10.4	
25	Th.	♂ ♀ Spica • Carriac Clay K.O.'d Sonny Liston, 1964 • Tides {9.9	<i>Just teasin' — it's sore throat season.</i>
26	Fr.	♀ Gr. Elong. • on Eq. • Tides {10.4	
27	Sa.	John Steinbeck b. 1902 • 20" snow, Cape Cod, 1952 • Tides {10.3	<i>Just teasin' — it's sore throat season.</i>
28	C	<b>1<sup>st</sup> S. Lent</b> • Tides {9.9	

If you ride a horse, sit close and tight,  
If you ride a man, sit easy and light.  
Poor Richard's Almanac, 1734



1982

MARCH, THE THIRD MONTH

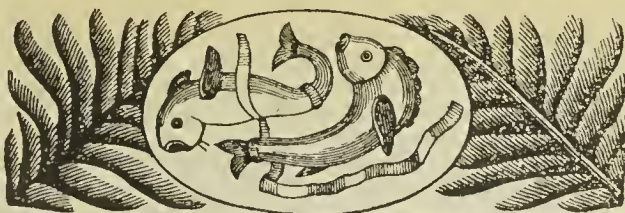
Spring arrives at 5:56 P.M. on the 20th. On the 10th the nine planets will be as close to lying in a straight line as at any time in the past 500 years. (For more on this Great Lineup, see astronomer George Greenstein's assessment, pages 66-67.) Mars and Saturn lie close together, and rise in the east in the early evening. Jupiter rises close to the same spot about an hour later, followed by the brilliant rise of Venus above the eastern horizon about 4:00 A.M. The familiar constellations of winter — the Milky Way, Orion, the Pleiades, Taurus, and Gemini — all move steadily westward as the seasons advance, and set during the early evening this month. Day and night are equal, by the clock, on the 17th; the sundial shows them balanced on the 20th. From then until late June, daylight increases every day. On the 31st Mars will be at opposition, and will be above the horizon all night.

ASTRONOMICAL CALCULATIONS

- ☾ First Quarter 2nd day, 17th hour 16 min.
- ☉ Full Moon 9th day, 15th hour 46 min.
- ☾ Last Quarter 17th day, 12th hour 15 min.
- New Moon 25th day, 5th hour 18 min.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS—PAGES 70-74

Day of Year	Day of Month	Day of Week	Rises h. m.	Key	Sets h. m.	Key	Length of Days h. m.	Sun Fast m.	Full Sea Boston A.M. P.M.	Rises h. m.	Key	Sets h. m.	Key	Declination of sun °	☾ Place	☾ Age
60	1	M.	6 20	D	5 34	B	11 14	3	3	3 1/2	9 <sup>A</sup> 44	B	—	7s. 31	ARI	6
61	2	Tu.	6 19	D	5 35	B	11 16	3	3 3/4	4 1/2	10 23	B	12 <sup>A</sup> 11	7 08	TAU	7
62	3	W.	6 17	C	5 36	B	11 19	3	4 3/4	5 1/2	11 <sup>A</sup> 09	B	1 21	6 45	TAU	8
63	4	Th.	6 15	C	5 38	B	11 23	3	5 3/4	6 1/2	12 <sup>P</sup> 02	B	2 28	6 22	GEM	9
64	5	Fr.	6 14	C	5 39	B	11 25	3	7	7 3/4	1 02	B	3 29	5 59	GEM	10
65	6	Sa.	6 12	C	5 40	B	11 28	4	8	8 3/4	2 09	B	4 22	5 35	CAN	11
66	7	C	6 10	C	5 41	B	11 31	4	9	9 3/4	3 18	B	5 07	5 12	CAN	12
67	8	M.	6 09	C	5 42	B	11 33	4	10	10 1/2	4 28	C	5 46	4 49	LEO	13
68	9	Tu.	6 07	C	5 43	B	11 36	4	10 3/4	11 1/4	5 36	C	6 20	4 26	LEO	14
69	10	W.	6 05	C	5 45	B	11 40	5	11 1/2	—	6 43	D	6 49	4 02	VIR	15
70	11	Th.	6 04	C	5 46	C	11 42	5	12	12 1/4	7 48	D	7 17	3 38	VIR	16
71	12	Fr.	6 02	C	5 47	C	11 45	5	12 3/4	1	8 51	D	7 44	3 15	VIR	17
72	13	Sa.	6 00	C	5 48	C	11 48	5	1 1/2	1 3/4	9 53	E	8 11	2 51	VIR	18
73	14	C	5 58	C	5 49	C	11 51	6	2	2 1/2	10 54	E	8 39	2 28	LIB	19
74	15	M.	5 57	C	5 50	C	11 53	6	2 3/4	3 1/4	11 <sup>P</sup> 58	E	9 10	2 04	LIB	20
75	16	Tu.	5 55	C	5 52	C	11 57	6	3 1/2	4 1/4	—	—	9 45	1 41	OPH	21
76	17	W.	5 53	C	5 53	C	12 00	7	4 1/2	5	12 <sup>A</sup> 49	E	10 24	1 17	OPH	22
77	18	Th.	5 52	C	5 54	C	12 02	7	5 1/4	6	1 44	E	11 08	0 53	SAG	23
78	19	Fr.	5 50	C	5 55	C	12 05	7	6 1/4	7	2 34	E	11 <sup>A</sup> 59	0 29	SAG	24
79	20	Sa.	5 48	C	5 56	C	12 08	7	7 1/4	7 3/4	3 20	E	12 <sup>P</sup> 55	0s. 05	SAG	25
80	21	C	5 46	C	5 57	C	12 11	8	8	8 1/2	4 00	E	1 55	0N.18	CAP	26
81	22	M.	5 45	C	5 59	C	12 14	8	9	9 1/2	4 37	E	3 00	1 41	CAP	27
82	23	Tu.	5 43	C	6 00	C	12 17	8	9 3/4	10	5 10	D	4 06	1 05	AQU	28
83	24	W.	5 41	C	6 01	C	12 20	9	10 1/2	10 3/4	5 41	D	5 15	1 29	AQU	29
84	25	Th.	5 39	C	6 02	C	12 23	9	11 1/4	11 1/2	6 10	C	6 24	1 52	PSC	0
85	26	Fr.	5 38	C	6 03	C	12 25	9	—	12	6 39	C	7 36	2 15	CET	1
86	27	Sa.	5 36	B	6 04	C	12 28	10	12 1/4	12 3/4	7 10	C	8 48	2 39	PSC	2
87	28	C	5 34	B	6 05	C	12 31	10	1	1 1/2	7 43	B	10 01	3 02	ARI	3
88	29	M.	5 32	B	6 06	C	12 34	10	1 1/4	2 1/4	8 22	B	11 <sup>P</sup> 13	3 26	TAU	4
89	30	Tu.	5 31	B	6 08	C	12 37	10	2 1/2	3 1/4	9 05	B	—	3 49	TAU	5
90	31	W.	5 29	B	6 09	C	12 40	11	3 1/2	4 1/4	9 <sup>A</sup> 57	B	12 <sup>A</sup> 22	4N.13	GEM	6



The braggart March stood in the season's door  
 With his broad shoulders blocking up the way,  
 Shaking the snow-flakes from the cloak he wore,  
 And from the fringes of his kirtle gray.

— Robert Burns Wilson

**Farmer's Calendar**

At the edges of the woodlots the snow has receded from the bases of the trees. Elsewhere the snow cover is deep and heavy still, but each tree now stands in a dark cup where the snow has melted back from around the trunk. When the maple syrup tappers see that snowholes have formed around the trees, they know their busy season is at hand. Snowholes under the trees mean the raccoons will soon be waking, poking out of the trees where they have wintered and walking out gingerly over the old snow.

What causes snowholes? Some people think that there is a Universal Life Force that runs through all living things, like trees — but not through snow. The Life Force heats the trees; the heat melts the snow.

I think it's the differing colors of the surfaces of things in winter, though. The trees are dark, the snow is white. Through the lengthening, warming days of the month of March, the dark trunks absorb the heat of the sun; the brilliant snow surface still reflects it. Therefore the trees warm faster than the snow, therefore the snow around their trunks must melt. The same principle is at work when you throw ashes on a snowy path or on a garden to melt it. It's not any chemical action in the ashes that does the job; it's simply that the ashes darken the snow, making it absorb light and heat rather than reflect them.

You may test this explanation of March snowholes by a simple experiment. Pick out a tree and paint it with white. The painted tree ought not to develop a snowhole in March. If you decide to try this experiment, you may need help in painting the tree. I'm at your service. I'll do the trunk. You do the limbs and branches.

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓
1	M.	St. David • Blackthorn winds blow. • Tides { 10.3 9.4	Rain
2	Tu.	Vt. Town Meeting Day • Stick to your winter flannels until they stick to you.	up
3	W.	Ember Day • 30°, West Palm Beach, Fla., 1980 • { 10.0 8.7	to
4	Th.	☾ at peri. • Thomas Jefferson inaugurated at Washington, D.C., 1801 •	your
5	Fr.	Ember Day • ☾ at ☉ • Jay Silverheels (Tonto) d., 1980	craw.
6	Sa.	Ember Day • ☾ runs high • U.S. began daylight air raids on Berlin, 1944	A
7	C	2 <sup>nd</sup> S. Lent • Tides { 10.4 9.4	sunny
8	M.	Georgia ratified Bill of Rights, 1939 • Tides { 10.7 9.8	thaw.
9	Tu.	♂ stat. • Full Worm • False teeth patented, 1822	Slushes
10	W.	Creditors have better memories than debtors. • Tides { 10.7 10.2	and
11	Th.	Chipmunks emerge. • ♂♂ • Great Blizzard of 1888 began, E. Coast	sloshes
12	Fr.	St. Gregory • ♂ ♀ • Jack Kerouac b. 1922	require
13	Sa.	♂ ♀ • Tenn. outlawed teaching evolution theory, 1925 •	galoshes.
14	C	3 <sup>rd</sup> S. Lent • Albert Einstein b. 1879 •	We're
15	M.	Ides of March • ♂♂ • Me. admitted to U.S., 1820 •	snowbound
16	Tu.	He that can compose himself, is wiser than he who composes books. • Tides { 9.0 8.1	all
17	W.	St. Patrick • ☾ at apo. • Occult. ♀ by ☾	around.
18	Th.	Caruso made recording for Gramophone Co., 1902 • Tides { 8.5 7.6	Sheets
19	Fr.	Swallows arrive, San Juan, Capistrano, Cal. • ☾ at ☉ • ☾ runs low	of
20	Sa.	Equinox • Uncle Tom's Cabin published, 1852 •	sleet are
21	C	5 <sup>th</sup> S. Lent • ♂ ♀ •	forced
22	M.	Cherry trees • Temp. below 32°, 161st consecutive day, Muscatine, Ia., 1872	to
23	Tu.	♂ ♀ • Wernher von Braun b. 1912 • Tides { 9.8 9.3	retreat.
24	W.	Robert Koch isolated TB bacillus, 1882 • Tides { 10.2 9.9	Cold,
25	Th.	Annunciation • If weather is clear, a fertile year. • New ☉ • ☾ on Eq.	we
26	Fr.	Gov. John Winthrop d. in Boston, 1649 • Tides { 10.6 10.7	believe,
27	Sa.	Mt. St. Helens erupted, Wash., 1980 • Tides { 10.7 10.5	then
28	C	5 <sup>th</sup> S. Lent • Passion •	then
29	M.	☾ at peri. • ♀ stat. • Jack Benny's radio debut, 1932 • { 10.9 10.0	a
30	Tu.	Pres. Ronald Reagan shot by J. Hinckley, 1981 • { 10.8 9.5	lamb-like
31	W.	♂♂ • There ore no ugly loves, nor handsome prisons. •	reprieve.



On April Fools Day Venus lies at its farthest distance west of the sun — an elongation of a full 46 degrees. The planet rises a few hours after midnight from now until September. Jupiter and Saturn make their closest approaches to us this month: Saturn comes within 794 million miles on the 8th, Jupiter within 390 million miles on the 25th. Both of them, and Mars, are visible in the eastern sky after sunset. The Milky Way has almost passed from sight, and sets early in the evening. New constellations decorate the spring skies, including Corona, Hercules, and Libra low in the east in the early evening. The Big Dipper, part of the constellation Ursa Major, the Great Bear, is almost directly above. The bright star high overhead is Regulus. On Easter the moon is just past full and its brightness dominates the night sky. Daylight lasts over 13 hours by the end of the month. Saturn is at opposition on the 8th; Jupiter, on the 25th.

ASTRONOMICAL CALCULATIONS

- ☾ First Quarter 1st day, 0 hour 9 min.
- ☾ Full Moon 8th day, 5th hour 19 min.
- ☾ Last Quarter 16th day, 7th hour 43 min.
- New Moon 23rd day, 15th hour 29 min.
- ☽ First Quarter 30th day, 7th hour 8 min.

ADD 1 hr. for Daylight Saving Time at 2 A.M. Apr. 25.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS—PAGES 70-74

Day of Year	Day of Month	Day of Week	Rises h. m.	Key	Sets h. m.	Key	Length of Days h. m.	Sun Fast m.	Full Sea A.M. P.M.	Rises h. m.	Key	Sets h. m.	Key	Declination of sun °	☾ Place	☾ Age
91	1	Th.	5 27	B	6 10	C	12 43	11	4 <sup>1</sup> / <sub>2</sub> 5 <sup>1</sup> / <sub>4</sub>	10 <sup>A</sup> <sub>M</sub> 55	B	1 <sup>A</sup> <sub>M</sub> 25	E	4N.36	GEM	7
92	2	Fr.	5 26	B	6 11	C	12 45	11	5 <sup>1</sup> / <sub>2</sub> 6 <sup>1</sup> / <sub>4</sub>	11 <sup>A</sup> <sub>M</sub> 59	B	2 20	E	4 59	GEM	8
93	3	Sa.	5 24	B	6 12	C	12 48	12	6 <sup>3</sup> / <sub>4</sub> 7 <sup>1</sup> / <sub>2</sub>	1 <sup>P</sup> <sub>M</sub> 07	B	3 07	E	5 22	CAN	9
94	4	<b>C</b>	5 22	B	6 13	D	12 51	12	7 <sup>3</sup> / <sub>4</sub> 8 <sup>1</sup> / <sub>2</sub>	2 15	C	3 47	D	5 45	LEO	10
95	5	<b>M</b>	5 20	B	6 14	D	12 54	12	8 <sup>3</sup> / <sub>4</sub> 9 <sup>1</sup> / <sub>4</sub>	3 23	C	4 21	D	6 08	LEO	11
96	6	Tu.	5 19	B	6 15	D	12 56	13	9 <sup>3</sup> / <sub>4</sub> 10 <sup>1</sup> / <sub>4</sub>	4 29	D	4 50	D	6 30	LEO	12
97	7	W.	5 17	B	6 17	D	13 00	13	10 <sup>1</sup> / <sub>2</sub> 11	5 34	D	5 18	D	6 53	VIR	13
98	8	Th.	5 15	B	6 18	D	13 03	13	11 <sup>1</sup> / <sub>4</sub> 11 <sup>1</sup> / <sub>2</sub>	6 37	D	5 45	C	7 15	VIR	14
99	9	Fr.	5 14	B	6 19	D	13 05	13	— 12	7 40	E	6 11	B	7 38	VIR	15
100	10	Sa.	5 12	B	6 20	D	13 08	14	12 <sup>1</sup> / <sub>4</sub> 12 <sup>3</sup> / <sub>4</sub>	8 41	E	6 39	B	8 00	LIB	16
101	11	<b>C</b>	5 10	B	6 21	D	13 11	14	1 1 <sup>1</sup> / <sub>4</sub>	9 42	E	7 08	B	8 22	LIB	17
102	12	M.	5 09	B	6 22	D	13 13	14	1 <sup>1</sup> / <sub>2</sub> 2	10 40	E	7 41	B	8 44	LIB	18
103	13	Tu.	5 07	B	6 23	D	13 16	14	2 <sup>1</sup> / <sub>4</sub> 2 <sup>3</sup> / <sub>4</sub>	11 <sup>P</sup> <sub>M</sub> 36	E	8 18	B	9 05	OPH	19
104	14	W.	5 05	B	6 24	D	13 19	15	3 3 <sup>1</sup> / <sub>2</sub>	— —	—	9 00	B	9 27	SAG	20
105	15	Th.	5 04	B	6 26	D	13 22	15	3 <sup>3</sup> / <sub>4</sub> 4 <sup>1</sup> / <sub>2</sub>	12 <sup>A</sup> <sub>M</sub> 27	E	9 48	B	9 49	SAG	21
106	16	Fr.	5 02	B	6 27	D	13 25	15	4 <sup>3</sup> / <sub>4</sub> 5 <sup>1</sup> / <sub>4</sub>	1 14	E	10 42	B	10 10	SAG	22
107	17	Sa.	5 01	B	6 28	D	13 27	15	5 <sup>1</sup> / <sub>2</sub> 6 <sup>1</sup> / <sub>4</sub>	1 57	E	11 <sup>A</sup> <sub>M</sub> 39	B	10 31	CAP	23
108	18	<b>C</b>	4 59	B	6 29	D	13 30	16	6 <sup>1</sup> / <sub>2</sub> 7	2 34	E	12 <sup>P</sup> <sub>M</sub> 41	B	10 52	CAP	24
109	19	M.	4 57	B	6 30	D	13 33	16	7 <sup>1</sup> / <sub>2</sub> 8	3 08	D	1 46	C	11 13	AQU	25
110	20	Tu.	4 56	B	6 31	D	13 35	16	8 <sup>1</sup> / <sub>4</sub> 8 <sup>3</sup> / <sub>4</sub>	3 39	D	2 53	C	11 34	AQU	26
111	21	W.	4 54	B	6 32	D	13 38	16	9 9 <sup>1</sup> / <sub>2</sub>	4 08	D	4 02	D	11 54	PSC	27
112	22	Th.	4 53	B	6 33	D	13 40	16	10 10 <sup>1</sup> / <sub>4</sub>	4 37	C	5 14	D	12 15	CET	28
113	23	Fr.	4 51	B	6 35	D	13 44	17	10 <sup>3</sup> / <sub>4</sub> 11	5 07	C	6 27	E	12 35	PSC	0
114	24	Sa.	4 50	B	6 36	D	13 46	17	11 <sup>1</sup> / <sub>2</sub> 11 <sup>3</sup> / <sub>4</sub>	5 40	B	7 42	E	12 55	CET	1
115	25	<b>C</b>	4 48	B	6 37	D	13 49	17	— 12 <sup>1</sup> / <sub>4</sub>	6 17	B	8 58	E	13 14	TAU	2
116	26	M.	4 47	B	6 38	D	13 51	17	12 <sup>1</sup> / <sub>2</sub> 1 <sup>1</sup> / <sub>4</sub>	6 59	B	10 11	E	13 34	TAU	3
117	27	Tu.	4 45	B	6 39	D	13 54	17	1 <sup>1</sup> / <sub>2</sub> 2	7 49	B	11 <sup>P</sup> <sub>M</sub> 19	E	13 53	TAU	4
118	28	W.	4 44	B	6 40	D	13 56	17	2 <sup>1</sup> / <sub>4</sub> 3	8 47	B	— —	—	14 12	GEM	5
119	29	Th.	4 43	B	6 41	D	13 58	18	3 <sup>1</sup> / <sub>4</sub> 4	9 50	B	12 <sup>A</sup> <sub>M</sub> 18	E	14 30	GEM	6
120	30	Fr.	4 41	B	6 42	D	14 01	18	4 <sup>1</sup> / <sub>4</sub> 5	10 <sup>A</sup> <sub>M</sub> 58	B	1 <sup>M</sup> <sub>O</sub> 8	E	14N.49	CAN	7





When daffodils begin to peer,  
With heigh! the doxy, over the dale,  
Why, then comes in the sweet o' the year,  
For the red blood reigns in the winter's pale.  
— William Shakespeare

**Farmer's Calendar**

When the snow is out of the meadows and other openings, and the grass has dried, but before it has begun to green, go out and look at the ground. Find a lawn or other close-mowed area, and examine the grass. Often you can find a whole world of little tracks or tunnels worn in the yellow, matted grass. Mice have made them, under the snow. In the spring they are revealed.

Mouse tunnels are exposed when the snow melts, and obliterated a couple of weeks later when the grass has started growing. They can form complete under-snow road systems, extending over whole yards and meadows. The tunnels wind, double, return, and cross themselves, endlessly tangling. For five or six long months of snow cover the mice have been building their elaborate tunnels in and under the snow. By April, when their work is opened to the day, the lawn looks like the surface of the Planet of the Moles.

Why do mice make such extravagant mazes under the snow? In search of food, certainly, and to have escape routes from predators. Still, I think there is more to the case than this — or less. We tend to underestimate, or overestimate, the motives of the lower forms. We take nature very seriously; perhaps this is because we think we aren't part of it. I wish to suggest a third explanation for the activity of mice in making such involved tunnels: they do it for the hell of it. Mice are bored in winter, like everybody else. They can't watch TV. They can't read. They don't ski. They can't even go out, for if they do something gets them. So they stay home and tunnel; it is play, like a kid's stamping off over the snow, here and there, to see the trail he makes.

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather
1	Th.	All Fools Day • (at ♀♂ • ♀ runs high • ♀ Gr. Elong. W. 46° • In	
2	Fr.	Shad run begins, New England coast • Rachmaninoff • b. 1873 • killed, 1882 • Tides {9.9 for	
3	Sa.	If foggy today, expect a flood in June. • Jesse James • Tides {9.8 a	
4	C	<b>Palm Sun.</b> • U.S. recognized Bangladesh, 1972 • {9.9 blow,	
5	M.	Mars' closest approach, 2 a.m. • Pocahontas married • John Rolfe, 1614 • plus	
6	Tu.	When April blows its horn, 'Tis good for both hay and corn. • Tides {10.1 snow.	
7	W.	♂♂ • ♀ Eq. Tex., 1857 • Tides {10.2 Sky	
8	Th.	<b>Passover</b> • Full Pink • ♀♂ • ♀♂ • ♀♂ • is	
9	Fr.	<b>Good Fri.</b> • ♀♂ • Jumbo arrived U.S., 1882 • scoured	
10	Sa.	Frances Perkins • ASPCA established, 1866 • Tides {10.2 by	
11	C	<b>Easter</b> • ♀ sup. ♂ • ♂♂ • ♀♂ • showers.	
12	M.	F.D.R. • Space shuttle Columbia • 1945 • launched, 1981 • {9.8 Cold	
13	Tu.	Thomas Jefferson's • at • Occult. ♀ by ♀ reason	
14	W.	Pres. Taft threw out first baseball to open season, 1910 • Tides {9.2 tells	
15	Th.	♂♂ • (at ♀♂ • ♀ runs low • Tides {8.2 • it's	
16	Fr.	When you're an Anvil, hold you still; When you're a Hammer, strike your fill. • mud	
17	Sa.	Zimbabwe, last British colony in Africa, independent, 1980 • {8.6 season.	
18	C	<b>Low Sun.</b> • Weather today foretells weather for summer. • No	
19	M.	Snow cover 3' deep in N.H., 1795 • First air raid on Tokyo, 1942 • {9.0 hocus-	
20	Tu.	♂♀ • Wisconsin Territory established, 1836 • {9.3 pocus,	
21	W.	Early peas up, N.H., 1856 • Charlotte Brontë b. 1816 • just	
22	Th.	♂ on Congress authorized "In God We Trust" on coins, 1864 • {10.1 a	
23	Fr.	<b>St. George</b> • Witches are about. • New • {10.6 crocus!	
24	Sa.	First transmission of T.V. by satellite, 1962 • Tides {11.4 Drizzles	
25	C	<b>2nd S. at E.</b> • Daylight Saving Time begins • at • {10.5 and	
26	M.	Love your neighbor; Yet don't pull down your hedge. • Tides {11.5 • and	
27	Tu.	Apollo XVI safe splashdown, 1972 • Tides {11.4 mizzles.	
28	W.	(at ♀♂ • ♀ runs high • Chaucer d. 1400 • Recruit	
29	Th.	Alfred Hitchcock d. 1980 • Duke Ellington b. 1899 • Tides {10.7 a	
30	Fr.	Arbor Day • Hitler d. 1945 • {10.2 bumbershoot.	

Wise men make weather proverbs  
And all fools repeat them.

1982

## MAY, THE FIFTH MONTH

Mercury is at its most visible in early May. Normally it is impossible to see this planet because of its proximity to the sun. Look for it in the west immediately after sunset; it lies close to where the sun sets. Mars, Jupiter, and Saturn are all bright features of the evening skies. Mars sets a few hours after midnight, followed by Jupiter and Saturn about an hour later. A line through the two outermost stars of the Big Dipper's bowl points almost directly at Polaris, the pole star, and passes very close to the North Pole. A line drawn through the Dipper's curving handle and doubling the handle's length ends in the bright star Arcturus. From this comes the rule "arc to Arcturus." If this curved line is followed even farther it encounters the bright star Spica. The sun's path moves further north of the celestial equator and we gain almost an hour of daylight this month, a boon to gardeners.

## ASTRONOMICAL CALCULATIONS

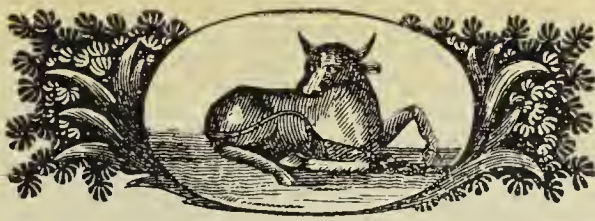
○ Full Moon	7th day,	19th hour	45 min.
☾ Last Quarter	16th day,	0 hour	12 min.
● New Moon	22nd day,	23rd hour	41 min.
☽ First Quarter	29th day,	15th hour	7 min.

ADD 1 hr. for Daylight Saving Time.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS—PAGES 70-74

Day of Year	Day of Month	Day of Week	☀ Rises h. m.	☀ Key	☀ Sets h. m.	☀ Key	Length of Days h. m.	Sun Fast m.	Full Sea Boston A.M. P.M.	☽ Rises h. m.	☽ Key	☽ Sets h. m.	☽ Key	Declination of sun °	☾ Place	☾ Age
121	1	Sa.	4 40	B	6 44	D	14 04	18	5 <sup>1</sup> / <sub>4</sub> 6	12 <sup>P</sup> <sub>M</sub> 07	B	1 <sup>A</sup> <sub>M</sub> 49	E	15N.07	LEO	8
122	2	<b>C</b>	4 39	B	6 45	D	14 06	18	6 <sup>1</sup> / <sub>2</sub> 7 <sup>1</sup> / <sub>4</sub>	1 14	C	2 24	D	15 25	LEO	9
123	3	M.	4 37	B	6 46	D	14 09	18	7 <sup>1</sup> / <sub>2</sub> 8 <sup>1</sup> / <sub>4</sub>	2 20	C	2 55	D	15 43	LEO	10
124	4	Tu.	4 36	B	6 47	D	14 11	18	8 <sup>1</sup> / <sub>2</sub> 9	3 25	D	3 23	D	16 00	VIR	11
125	5	W.	4 35	B	6 48	D	14 13	18	9 <sup>1</sup> / <sub>2</sub> 9 <sup>3</sup> / <sub>4</sub>	4 28	D	3 48	C	16 18	VIR	12
126	6	Th.	4 33	A	6 49	D	14 16	18	10 <sup>1</sup> / <sub>4</sub> 10 <sup>1</sup> / <sub>2</sub>	5 30	E	4 14	B	16 35	VIR	13
127	7	Fr.	4 32	A	6 50	D	14 18	18	11 11	6 31	E	4 40	B	16 51	LIB	14
128	8	Sa.	4 31	A	6 51	D	14 20	19	11 <sup>1</sup> / <sub>2</sub> 11 <sup>3</sup> / <sub>4</sub>	7 32	E	5 09	B	17 08	LIB	15
129	9	<b>C</b>	4 30	A	6 52	D	14 22	19	— 12	8 32	E	5 40	B	17 24	SCO	16
130	10	M.	4 29	A	6 53	D	14 24	19	12 <sup>1</sup> / <sub>2</sub> 12	9 28	E	6 15	B	17 39	OPH	17
131	11	Tu.	4 27	A	6 54	D	14 27	19	1 1 <sup>1</sup> / <sub>4</sub>	10 22	E	6 56	A	17 55	SAG	18
132	12	W.	4 26	A	6 55	D	14 29	19	1 <sup>3</sup> / <sub>4</sub> 2 <sup>1</sup> / <sub>4</sub>	11 11	E	7 41	B	18 10	SAG	19
133	13	Th.	4 25	A	6 57	D	14 32	19	2 <sup>1</sup> / <sub>2</sub> 3	11 <sup>P</sup> <sub>M</sub> 55	E	8 32	B	18 25	SAG	20
134	14	Fr.	4 24	A	6 58	E	14 34	19	3 <sup>1</sup> / <sub>4</sub> 4	—	—	9 28	B	18 39	CAP	21
135	15	Sa.	4 23	A	6 59	E	14 36	19	4 4 <sup>3</sup> / <sub>4</sub>	12 <sup>A</sup> <sub>M</sub> 33	E	10 28	B	18 53	CAP	22
136	16	<b>C</b>	4 22	A	7 00	E	14 38	19	5 5 <sup>1</sup> / <sub>2</sub>	1 08	E	11 <sup>A</sup> <sub>M</sub> 30	B	19 07	AQU	23
137	17	M.	4 21	A	7 01	E	14 40	19	5 <sup>3</sup> / <sub>4</sub> 6 <sup>1</sup> / <sub>2</sub>	1 39	D	12 <sup>P</sup> <sub>M</sub> 34	C	19 21	AQU	24
138	18	Tu.	4 20	A	7 02	E	14 42	19	6 <sup>3</sup> / <sub>4</sub> 7 <sup>1</sup> / <sub>4</sub>	2 08	D	1 41	D	19 35	AQU	25
139	19	W.	4 19	A	7 03	E	14 44	19	7 <sup>3</sup> / <sub>4</sub> 8	2 36	D	2 49	D	19 48	PSC	26
140	20	Th.	4 18	A	7 04	E	14 46	19	8 <sup>1</sup> / <sub>2</sub> 9	3 04	C	4 01	D	20 00	PSC	27
141	21	Fr.	4 17	A	7 05	E	14 48	18	9 <sup>1</sup> / <sub>4</sub> 9 <sup>3</sup> / <sub>4</sub>	3 35	C	5 16	E	20 12	CET	28
142	22	Sa.	4 17	A	7 06	E	14 49	18	10 <sup>1</sup> / <sub>4</sub> 10 <sup>1</sup> / <sub>2</sub>	4 09	B	6 32	E	20 24	ARI	0
143	23	<b>C</b>	4 16	A	7 07	E	14 51	18	11 11 <sup>1</sup> / <sub>4</sub>	4 50	B	7 49	E	20 36	TAU	1
144	24	M.	4 15	A	7 07	E	14 52	18	— 12	5 37	B	9 02	E	20 47	TAU	2
145	25	Tu.	4 14	A	7 08	E	14 54	18	12 <sup>1</sup> / <sub>4</sub> 12	6 33	B	10 07	E	20 58	GEM	3
146	26	W.	4 14	A	7 09	E	14 55	18	1 1	7 37	B	11 03	E	21 09	GEM	4
147	27	Th.	4 13	A	7 10	E	14 57	18	2 2	8 45	B	11 <sup>P</sup> <sub>M</sub> 56	E	21 19	CAN	5
148	28	W.	4 12	A	7 11	E	14 59	18	3 3	9 55	B	—	—	21 29	CAN	6
149	29	Sa.	4 12	A	7 12	E	15 00	18	4 4	11 <sup>A</sup> <sub>M</sub> 05	C	12 <sup>A</sup> <sub>M</sub> 07	E	21 38	LEO	7
150	30	<b>C</b>	4 11	A	7 13	E	15 02	18	5 5	12 <sup>P</sup> <sub>M</sub> 13	C	1 00	D	21 47	LEO	8
151	31	M.	4 11	A	7 13	E	15 02	17	6 6 <sup>1</sup> / <sub>4</sub>	1 <sup>P</sup> <sub>M</sub> 18	D	1 <sup>A</sup> <sub>M</sub> 28	D	21N.56	VIR	9





Come walk with me along this willowed lane,  
Where, like lost coinage from some miser's store,  
The golden dandelions more and more  
Glow as the warm sun kisses them again.  
— Henry Sylvester Cornwell

Farmer's Calendar

Forest archeology: best made an early spring pursuit. All over the Northeast, and especially in New England, the woods conceal cellar holes, barn foundations, stone pens and pounds, ruined bridges, dams, and other remnants of the old farming civilization that settled and populated these regions going back three hundred years. In May, after the snow is out, and before the young trees, ferns, and other undergrowth are fully leaved and grown thick to hide them, the old cellar holes and other remains are more easily found than they are in other seasons. You will find these old places by accident, but if you keep your eyes open, and know what to look for, you can help the accident to happen.

Look for rocks piled by art rather than by nature, and look for humps and hillocks in the woods that seem unconnected to features of the natural lay of the land. The little hill in the brush could be the rise on which a farmhouse sat. Explore it, and you will find the cellar hole, full of dead leaves and trash, the stone chimney foundation square in its center, with a couple of substantial trees growing on top of it.

Look, too, for big old trees, especially big old trees growing in orderly rows. Look for old apple trees, nut trees, lilacs. These didn't come into the woods by themselves. Somebody planted them. If you find a lilac or pear growing off in the woods, then you are probably standing in somebody's dooryard, where somebody's children used to play. Now there is nobody within half a mile but birds and porcupines. I understand there is an old cemetery off in the woods near where I live. But nobody knows exactly where it is, and I haven't come across it yet.

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather
1	Sa.	Sts. Philip and James • Kentucky Derby Day	Hoar-
2	C	3 <sup>rd</sup> S. af. F. • Graft fruit trees now.	{ 9.6 frost 9.2
3	M.	Invention of Cross • Anti-Vietnam War demonstrations, Washington, D.C., 1971	is
4	Tu.	♂♂ ☾ • on Al Capone Eq. imprisoned, 1932	{ 9.6 star- 9.8
5	W.	♂ ♀ ☾ • Eat at pleasure, drink by measure.	{ 9.6 10.0 crossed.
6	Th.	♂ ♀ ☾ • Hindenburg exploded, Lakehurst, N.J., 1937	{ 9.6 10.1 Cool
7	Fr.	18% of tornadoes occur this month.	Full ☉ • breeze
8	Sa.	♂ Gr. Elong. • Battle of the Coral Sea ended, 1942	• sweetens
9	C	4 <sup>th</sup> S. af. F. • Mother's Day	♂♂ ☾
10	M.	Skunks are born. • First osteopathy school in U.S. chartered, 1892	{ 10.0 9.0 early
11	Tu.	Three • Occult. ♀ by ☾	☾ at apo. peas.
12	W.	Chilly • ☾ at ☽ • ☾ runs low	{ 9.6 8.5 Sun
13	Th.	Saints • ♂ stat. • Joe Louis b. 1914	{ 9.3 8.3 dapples
14	Fr.	A child thinks 20 shillings and 20 years can scarce ever be spent.	{ 9.1 8.2 apple
15	Sa.	U.S. Dept. of Agriculture estab., 1862 • Richard J. Daley b. 1902	blossoms.
16	C	Rogation Sun. • Tides	{ 8.8 • Cold 8.3
17	M.	N.Y. Stock Exchange, Statue of Liberty began, Wall St., 1792 arrived in N.Y., 1885	enough
18	Tu.	Tornado smashed log cabins, Burlington, Ohio, 1825	{ 9.0 9.2 to
19	W.	St. Dunstan • ♂ ♀ ☾ • ☾ on Eq.	• congeal
20	Th.	Ascension • 10" snow, Stratford, Vt., 1892	{ 9.7 10.5 a
21	Fr.	♀ stat. • Conn. set auto speed limit of 15 m.p.h., 1901	{ 10.0 11.1 • seal.
22	Sa.	Nixon paid first U.S. presidential visit to Moscow, 1972	{ 10.3 11.6 Kissed
23	C	1 <sup>st</sup> S. af. Ascen. • New	☉ at peri. • ♂♂
24	M.	Long-tongued people are generally short-handed. • George Jessel d. 1981	• by a
25	Tu.	Babe Ruth hit last (714) home run, 1935 • Year's highest a.m. tide	{ 11.9 10.3 lilac
26	W.	St. Augustine • ☾ runs high	{ 11.7 10.1 mist.
27	Th.	St. Bede • "Wild Bill" Hickok b. 1837	{ 11.3 9.8 Time
28	Fr.	Shebuoth • Duke of Windsor d. 1972 • Jim Thorpe b. 1888	for
29	Sa.	Clean your freezer, before you point at my spoils. • Tides	{ 10.3 9.4 • a
30	C	Whit Sun. • Pentecost	bucolic
31	M.	Memorial Day • ♂♂ ☾ • Tides	{ 9.4 9.4 frolic.



1982

JUNE, THE SIXTH MONTH

Mercury moves into inferior conjunction for the second time this year on the 1st, and again it is only 49 million miles from us. This configuration is repeated a third time on October 2nd. Summer begins at 12:23 P.M. on the 21st. The moon partially eclipses the sun 5 hours earlier, although the eclipse is not visible from the United States. From the 21st on for several weeks anything north of the Arctic Circle receives 24 hours of sunlight. In the night skies, Antares lies to the southeast. Its name — "not Mars" — cautions against confusing its reddish hue with that of Mars. High above ride Arcturus and Spica; the Milky Way is low in the east and displays the summer triangle of Deneb, Vega, and Altair. By the sun, the longest day of the year is the 25th. The clock designates seven days longest, beginning the 18th, all with 15 hours 17 minutes of daylight. Starting the 20th and continuing for three days the sun is at its farthest declination north — 23° 26' — before beginning its slow slide back toward the south.

ASTRONOMICAL CALCULATIONS

- Full Moon                    6th day,    11th hour    0 min.
- ☾ Last Quarter                14th day,   13th hour    7 min.
- New Moon                    21st day,    6th hour     53 min.
- ☽ First Quarter                28th day,    0 hour       58 min.

ADD 1 hr. for Daylight Saving Time.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS—PAGES 70-74"

Day of Year	Day of Month	Day of Week	☀ Rises h. m.	Key	☀ Sets h. m.	Key	Length of Days h. m.	Sun		☽ Rises h. m.	Key	☽ Sets h. m.	Key	Declination of sun °	☾ Place	☾ Age	
								Fast	Boston								
152	1	Tu.	4 10	A	7 14	E	15 04	17	7 <sup>1</sup> <sub>4</sub>	7 <sup>3</sup> <sub>4</sub>	2 <sup>P</sup> <sub>M</sub> 21	D	1 <sup>A</sup> <sub>M</sub> 54	C	22N.04	VIR	10
153	2	W.	4 10	A	7 15	E	15 05	17	8 <sup>1</sup> <sub>4</sub>	8 <sup>1</sup> <sub>4</sub>	3 23	D	2 19	C	22 12	VIR	11
154	3	Th.	4 09	A	7 16	E	15 07	17	9	9 <sup>1</sup> <sub>4</sub>	4 24	E	2 45	B	22 19	VIR	12
155	4	Fr.	4 09	A	7 16	E	15 07	17	9 <sup>3</sup> <sub>4</sub>	10	5 24	E	3 12	B	22 26	LIB	13
156	5	Sa.	4 08	A	7 17	E	15 09	17	10 <sup>3</sup> <sub>4</sub>	10 <sup>3</sup> <sub>4</sub>	6 24	E	3 42	B	22 33	LIB	14
157	6	<b>C</b>	4 08	A	7 18	E	15 10	16	11 <sup>1</sup> <sub>4</sub>	11 <sup>1</sup> <sub>4</sub>	7 22	E	4 16	B	22 40	OPH	15
158	7	M.	4 08	A	7 18	E	15 10	16	11 <sup>3</sup> <sub>4</sub>	—	8 17	E	4 54	B	22 46	OPH	16
159	8	Tu.	4 08	A	7 19	E	15 11	16	12	12 <sup>1</sup> <sub>4</sub>	9 08	E	5 38	B	22 51	SAG	17
160	9	W.	4 07	A	7 20	E	15 13	16	12 <sup>3</sup> <sub>4</sub>	1 <sup>1</sup> <sub>4</sub>	9 54	E	6 27	B	22 56	SAG	18
161	10	Th.	4 07	A	7 20	E	15 13	16	1 <sup>1</sup> <sub>4</sub>	1 <sup>3</sup> <sub>4</sub>	10 34	E	7 20	B	23 01	SAG	19
162	11	Fr.	4 07	A	7 21	E	15 14	15	2	2 <sup>1</sup> <sub>4</sub>	11 09	E	8 18	B	23 05	CAP	20
163	12	Sa.	4 07	A	7 21	E	15 14	15	2 <sup>3</sup> <sub>4</sub>	3 <sup>1</sup> <sub>4</sub>	11 <sup>P</sup> <sub>M</sub> 41	D	9 19	B	23 09	CAP	21
164	13	<b>C</b>	4 07	A	7 22	E	15 15	15	3 <sup>1</sup> <sub>4</sub>	4	—	—	10 22	C	23 13	AQU	22
165	14	M.	4 07	A	7 22	E	15 15	15	4 <sup>1</sup> <sub>4</sub>	5	12 <sup>A</sup> <sub>M</sub> 09	D	11 <sup>A</sup> <sub>M</sub> 26	C	23 16	AQU	23
166	15	Tu.	4 07	A	7 23	E	15 16	15	5 <sup>1</sup> <sub>4</sub>	5 <sup>3</sup> <sub>4</sub>	12 37	D	12 <sup>P</sup> <sub>M</sub> 32	D	23 19	PSC	24
167	16	W.	4 07	A	7 23	E	15 16	14	6 <sup>1</sup> <sub>4</sub>	6 <sup>3</sup> <sub>4</sub>	1 04	C	1 40	D	23 21	CET	25
168	17	Th.	4 07	A	7 23	E	15 16	14	7	7 <sup>1</sup> <sub>4</sub>	1 32	C	2 51	E	23 23	PSC	26
169	18	Fr.	4 07	A	7 24	E	15 17	14	8	8 <sup>1</sup> <sub>4</sub>	2 04	B	4 05	E	23 24	CET	27
170	19	Sa.	4 07	A	7 24	E	15 17	14	9	9 <sup>1</sup> <sub>4</sub>	2 40	B	5 21	E	23 25	TAU	28
171	20	<b>C</b>	4 07	A	7 24	E	15 17	14	9 <sup>3</sup> <sub>4</sub>	10 <sup>1</sup> <sub>4</sub>	3 23	B	6 37	E	23 26	TAU	29
172	21	M.	4 07	A	7 24	E	15 17	13	10 <sup>3</sup> <sub>4</sub>	11	4 15	B	7 47	E	23 26	TAU	0
173	22	Tu.	4 08	A	7 25	E	15 17	13	11 <sup>1</sup> <sub>4</sub>	—	5 16	B	8 49	E	23 26	GEM	1
174	23	W.	4 08	A	7 25	E	15 17	13	12	12 <sup>1</sup> <sub>4</sub>	6 24	B	9 42	E	23 25	CAN	2
175	24	Th.	4 08	A	7 25	E	15 17	13	12 <sup>3</sup> <sub>4</sub>	1 <sup>1</sup> <sub>4</sub>	7 37	B	10 25	E	23 24	CAN	3
176	25	Fr.	4 08	A	7 25	E	15 17	12	1 <sup>3</sup> <sub>4</sub>	2	8 50	B	11 00	D	23 23	LEO	4
177	26	Sa.	4 09	A	7 25	E	15 16	12	2 <sup>3</sup> <sub>4</sub>	3 <sup>1</sup> <sub>4</sub>	10 00	C	11 <sup>P</sup> <sub>M</sub> 31	D	23 21	LEO	5
178	27	<b>C</b>	4 09	A	7 25	E	15 16	12	3 <sup>3</sup> <sub>4</sub>	4 <sup>1</sup> <sub>4</sub>	11 <sup>A</sup> <sub>M</sub> 07	D	—	—	23 18	LEO	6
179	28	M.	4 10	A	7 25	E	15 15	12	4 <sup>3</sup> <sub>4</sub>	5 <sup>1</sup> <sub>4</sub>	12 <sup>P</sup> <sub>M</sub> 12	D	12 <sup>A</sup> <sub>M</sub> 00	D	23 16	VIR	7
180	29	Tu.	4 10	A	7 25	E	15 15	12	5 <sup>3</sup> <sub>4</sub>	6 <sup>1</sup> <sub>4</sub>	1 15	D	12 24	C	23 13	VIR	8
181	30	W.	4 10	A	7 25	E	15 15	11	6 <sup>3</sup> <sub>4</sub>	7	2 <sup>P</sup> <sub>M</sub> 17	D	12 <sup>A</sup> <sub>M</sub> 49	C	23N.09	VIR	9



O for boyhood's time of June.  
Crowding years in one brief moon,  
When all things I heard or saw,  
Me, their master, waited for.  
— John Greenleaf Whittier

**Farmer's Calendar**

June is bug time. Every entry into the woods brings forth an attentive escort, zipping, hovering, whining, biting. Once again it is necessary to decide which is the most hateful of the Big Three of woodland tormentors: the mosquito, the black fly, and the deer fly. Those who know real wild country advance the claim of one of the first two; but I live in relatively settled parts, and there I'll hold out for the deer fly as worst bug.

Deer flies are mostly buzzers, not biters. They like hair. A deer fly will buzz around your hair, ears, and neck, persistently circling your head. I would rather have fifty of the local mosquitoes than one of these.

Deer flies are smarter than other insects. They work a path in the woods the way an expert undercover surveillance team works the streets of a city to keep watch on a suspect. You enter the woods, and Deer Fly No. 1 picks you up. It stays with you for twenty or thirty yards, buzzing and bothering. Then No. 1 fades out. You go on your way untormented for a few minutes. Deer Fly No. 2 picks you up, follows you for another leg. Then No. 2 falls away, and No. 3 takes you up. Where did they learn to do this?

There is one way in which deer flies are vulnerable. Since they work in relays, it is theoretically possible for you to break up their assault. Suppose, with a lucky blow, you get the individual who has you in charge. Now, the deer fly that came before the one you have just killed is out of the picture; it has passed you on. The next one hasn't come on shift. You're in the clear — as long as you remain exactly where you are. In three or four months the deer flies will be gone, and you will have bested them, for sure.

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather
1	Tu.	♁ ♃ ☾ • ♀ inf. ♁ • ☾ on Eq. • Tides {9.2	Rain
2	W.	Ember Day • ♁ ♃ ☾ • Tides {9.1	first,
3	Th.	Crow on the fence, rain will go hence. Crow on the ground, rain will come down.	• then
4	Fr.	Ember Day • Anti-Saloon League organized, 1893 • Tides {8.9	a
5	Sa.	St. Boniface • Ember Day • ♁ ♃ ☾	summery
6	C	Trinity • Full Strawberry • ☾ • Tides {10.0	burst.
7	M.	Occult. ♀ by ☾ ☾ ☾ apo. • 20' snow, Danville, Vt., 1816	Mackerel
8	Tu.	☾ ☾ ☾ • World's largest flower (4' diameter) bloomed, N.Y. Botanic Gardens, 1837	sky
9	W.	Laurel blooms, N.H. • ☾ runs • Cole Porter b. 1892	will lift,
10	Th.	Corpus Christi • {9.7	• by and by.
11	Fr.	A writer is rarely so well inspired as when he talks about himself. • {9.5	Unfailing
12	Sa.	Gossamer Albatross, first man-powered aircraft, crossed English Channel, 1979 • {9.3	clear
13	C	2 <sup>nd</sup> S. af. ♀. • ♀ stat. • {9.2	sailing.
14	M.	If there be a rainbow in the eve, It will rain and leave. • Tides {9.1	Sun
15	Tu.	☾ on Eq. • Ben Franklin proved lightning is electricity, 1752 • {9.0	and
16	W.	Lincoln said, "A house divided against itself cannot stand." 1858 • {9.1	showers
17	Th.	St. Alban • Bunker Hill Battle, 1775 • ♀ ☾ • feed	
18	Fr.	♁ ♀ ☾ • Hurricane Agnes hit Florida coast, 1972 • Tides {9.5	the
19	Sa.	♁ stat. • Occult. ♀ by ☾ • Tides {9.7	seeds.
20	C	3 <sup>rd</sup> S. af. ♀. • Father's Day • Unrest	
21	M.	Don't brew beer when beans are in blossom. • New • ☾ at peri. 12:23 p.m. EST	
22	Tu.	☾ ☾ ☾ • ☾ runs high • Year's highest p.m. tide • {10.3	in the
23	W.	Taft-Hartley Labor Act passed over Truman's veto, 1947 • • {10.0	west.
24	Th.	Nativity of West Berlin • {11.8	Cone
25	Fr.	John the Baptist • blockaded, 1948 • {10.2	of
26	Sa.	If you do what you should not, you must hear what you would not. • Gr. Elong. • Pearl Buck b. 1892 • Tides {10.8	ozone.
27	C	4 <sup>th</sup> S. af. ♀. • Rain today means seven wet weeks • Tides {9.8	Getting
28	M.	♀ stat. • ♁ ♃ ☾ • ♁ ♃ ☾ • ☾ on Eq.	damp
29	Tu.	St. Peter • ♁ ♃ ☾ • 101° San Francisco, Cal., 1934 • at	
30	W.	Lord Baltimore granted charter for Maryland colony, 1632 • Tides {8.8	camp.

One may as much miss the mark by aiming too high as too low.



The Earth reaches aphelion on Independence Day. At this time it is as far from the sun as it ever gets: 94,479,300 miles. Two eclipses occur this month, but only one is visible to us: the total eclipse of the moon on the 6th. Totality begins at 1:38 A.M. and ends at 3:24 A.M. E.S.T. The partial eclipse of the sun on the 20th will be visible only from above the Arctic Circle. The constellation of Hercules is overhead. An arching path leads from the handle of the Big Dipper to Arcturus and Spica high in the west, and to the summer triangle high in the east. Observers with a small telescope should be able to pick out Messier 13, a spectacular globular cluster of stars in Hercules. Find it by looking along a line that joins the northernmost and southernmost stars along Hercules' western edge.

ASTRONOMICAL CALCULATIONS

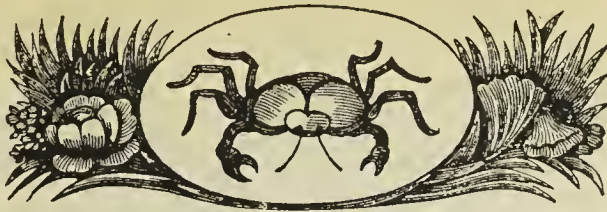
- Full Moon 6th day, 2nd hour 32 min.
- ☾ Last Quarter 13th day, 22nd hour 47 min.
- New Moon 20th day, 13th hour 58 min.
- ☽ First Quarter 27th day, 13th hour 22 min.

ADD 1 hr. for Daylight Saving Time.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS—PAGES 70-74

Day of Year	Day of Month	Day of Week	☺ Rises h. m.	Key	☻ Sets h. m.	Key	Length of Days h. m.	Sun Past m.	Full Sea Boston A.M. P.M.	☽ Rises h. m.	Key	☾ Sets h. m.	Key	Declina- tion of sun °	☽ Place	☽ Age
182	1	Th.	4 11	A	7 25	E	15 14	11	7 <sup>3</sup> / <sub>4</sub> 8	3 <sup>P</sup> <sub>M</sub> 18	E	1 <sup>A</sup> <sub>M</sub> 16	B	23N.06	LIB	10
183	2	Fr.	4 11	A	7 25	E	15 14	11	8 <sup>1</sup> / <sub>2</sub> 8 <sup>3</sup> / <sub>4</sub>	4 18	E	1 45	B	23 01	LIB	11
184	3	Sa.	4 12	A	7 24	E	15 12	11	9 <sup>1</sup> / <sub>4</sub> 9 <sup>1</sup> / <sub>2</sub>	5 16	E	2 17	B	22 57	OPH	12
185	4	<b>C</b>	4 13	A	7 24	E	15 11	11	10 10 <sup>1</sup> / <sub>4</sub>	6 12	E	2 53	B	22 51	OPH	13
186	5	M.	4 13	A	7 24	E	15 11	11	10 <sup>3</sup> / <sub>4</sub> 10 <sup>3</sup> / <sub>4</sub>	7 04	E	3 35	B	22 46	SAG	14
187	6	Tu.	4 14	A	7 24	E	15 10	10	11 <sup>1</sup> / <sub>2</sub> 11 <sup>1</sup> / <sub>2</sub>	7 52	E	4 22	B	22 40	SAG	15
188	7	W.	4 14	A	7 23	E	15 09	10	— 12	8 34	E	5 15	B	22 34	SAG	16
189	8	Th.	4 15	A	7 23	E	15 08	10	12 <sup>1</sup> / <sub>4</sub> 12 <sup>3</sup> / <sub>4</sub>	9 11	E	6 12	B	22 27	CAP	17
190	9	Fr.	4 16	A	7 23	E	15 07	10	12 <sup>3</sup> / <sub>4</sub> 1 <sup>1</sup> / <sub>4</sub>	9 43	E	7 12	B	22 20	CAP	18
191	10	Sa.	4 17	A	7 22	E	15 05	10	1 <sup>1</sup> / <sub>2</sub> 2	10 13	D	8 14	C	22 13	AQU	19
192	11	<b>C</b>	4 17	A	7 22	E	15 05	10	2 <sup>1</sup> / <sub>4</sub> 2 <sup>3</sup> / <sub>4</sub>	10 40	D	9 17	C	22 05	AQU	20
193	12	M.	4 18	A	7 21	E	15 03	9	3 3 <sup>1</sup> / <sub>4</sub>	11 07	D	10 21	D	21 57	PSC	21
194	13	Tu.	4 19	A	7 21	E	15 02	9	3 <sup>3</sup> / <sub>4</sub> 4 <sup>1</sup> / <sub>4</sub>	11 <sup>P</sup> <sub>M</sub> 34	C	11 <sup>A</sup> <sub>M</sub> 27	D	21 48	CET	22
195	14	W.	4 20	A	7 20	E	15 00	9	4 <sup>3</sup> / <sub>4</sub> 5 <sup>1</sup> / <sub>4</sub>	— —	—	12 <sup>P</sup> <sub>M</sub> 34	D	21 39	PSC	23
196	15	Th.	4 20	A	7 19	E	14 59	9	5 <sup>3</sup> / <sub>4</sub> 6	12 <sup>A</sup> <sub>M</sub> 02	B	1 44	E	21 29	CET	24
197	16	Fr.	4 21	A	7 19	E	14 58	9	6 <sup>1</sup> / <sub>2</sub> 7	12 35	B	2 57	E	21 20	ARI	25
198	17	Sa.	4 22	A	7 18	E	14 56	9	7 8	1 13	B	4 11	E	21 20	TAU	26
199	18	<b>C</b>	4 23	A	7 17	E	14 54	9	8 <sup>1</sup> / <sub>2</sub> 9	1 59	B	5 24	E	20 59	TAU	27
200	19	M.	4 24	A	7 17	E	14 53	9	9 <sup>1</sup> / <sub>2</sub> 9 <sup>3</sup> / <sub>4</sub>	2 55	B	6 30	E	20 49	GEM	28
201	20	Tu.	4 25	A	7 16	E	14 51	9	10 <sup>1</sup> / <sub>2</sub> 10 <sup>3</sup> / <sub>4</sub>	3 59	B	7 28	E	20 38	GEM	0
202	21	W.	4 26	A	7 15	E	14 49	9	11 <sup>1</sup> / <sub>2</sub> 11 <sup>3</sup> / <sub>4</sub>	5 11	B	8 16	E	20 26	CAN	1
203	22	Th.	4 27	A	7 14	E	14 47	9	— 12 <sup>1</sup> / <sub>4</sub>	6 26	B	8 56	E	20 14	LEO	2
204	23	Fr.	4 28	A	7 13	E	14 45	9	12 <sup>1</sup> / <sub>2</sub> 1 <sup>1</sup> / <sub>4</sub>	7 40	C	9 30	D	20 02	LEO	3
205	24	Sa.	4 28	A	7 12	E	14 44	9	1 <sup>1</sup> / <sub>2</sub> 2	8 51	D	9 59	D	19 49	LEO	4
206	25	<b>C</b>	4 29	A	7 11	E	14 42	9	2 <sup>1</sup> / <sub>4</sub> 3	9 58	D	10 26	C	19 37	VIR	5
207	26	M.	4 30	A	7 10	E	14 40	9	3 <sup>1</sup> / <sub>4</sub> 3 <sup>3</sup> / <sub>4</sub>	11 <sup>A</sup> <sub>M</sub> 04	D	10 52	C	19 24	VIR	6
208	27	Tu.	4 31	A	7 09	E	14 38	9	4 <sup>1</sup> / <sub>4</sub> 4 <sup>3</sup> / <sub>4</sub>	12 <sup>P</sup> <sub>M</sub> 07	E	11 18	B	19 10	VIR	7
209	28	W.	4 32	A	7 08	E	14 36	9	5 5 <sup>1</sup> / <sub>2</sub>	1 09	E	11 <sup>P</sup> <sub>M</sub> 47	B	18 57	LIB	8
210	29	Th.	4 33	A	7 07	E	14 34	9	6 6 <sup>1</sup> / <sub>2</sub>	2 10	E	— —	—	18 43	LIB	9
211	30	Fr.	4 34	A	7 06	E	14 32	9	7 7 <sup>1</sup> / <sub>4</sub>	3 09	E	12 <sup>A</sup> <sub>M</sub> 18	B	18 28	LIB	10
212	31	Sa.	4 35	A	7 05	E	14 30	9	8 8 <sup>1</sup> / <sub>4</sub>	4 <sup>P</sup> <sub>M</sub> 06	E	12 <sup>A</sup> <sub>M</sub> 53	B	18N.13	OPH	11





Sing a song of Summer, the world is nearly still,  
The millpond has gone to sleep, and so has the mill.  
Shall we go a-sailing, or shall we take a ride,  
Or dream the afternoon away here side by side?  
— Cosmo Monkhouse

**Farmer's Calendar**

Our forebears' labor in high summer to make their hay is reduced at present, for many of us, to cutting the grass. Our grandfathers and grandmothers, their children, brothers and sisters, friends and neighbors would advance in force on their mowings each year in a major effort resembling a military operation in its scale, timing, and organization; we, solitary, crank up a small engine and spend a couple of hours pushing it or riding it across a patch of grass and weeds that our forefathers wouldn't have had time to bother with.

Cutting an outside lawn is as close to farming as many country people come, or want to come, today. And though it is a pale imitation of the old haying epic, grass-cutting ought to have its dignity, as any necessary work on the land has dignity. Like the hay-maker, the grass-cutter is a tender of the soil in his own way. Though he doesn't harvest, he works in phase with nature.

Therefore let's give the grass-cutter his due. Let him be comforted by a famous grass-cutting story from England, the Green and Pleasant Land, where they may have it over us in the lawn department:

A visitor to one of the most ancient of the colleges of the University of Oxford admired the college lawn, which was immaculate, uniform, lush. The visitor asked the college president, his host, how such perfection was achieved. The college groundskeeper was called, told of the visitor's admiration, and asked how the college came to have such a magnificent sward. "Well," said the groundskeeper, "we mow east and west for two hundred years. Then we mow north and south for two hundred years. Then we change about again."

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓
1	Th.	Dominion Day, Canada	Steve Ovett ran mile in 3:48.8, 1980
2	Fr.	Visit of Mary	♂ ♀ Aldebaran
3	Sa.	Dog Days • If you want to be safe on the 4th begin. Don't buy a fifth on the 3rd.	{ 9.5 9.6
4	C	5th S. af. P. Independence Day	{ 9.6 8.9
5	M.	Alewives start back to sea.	Salvation Army founded, 1865
6	Tu.	Full Buck	Eclipse
7	W.	Don't think to hunt two hares with one dog.	Ringo Starr b. 1940
8	Th.	American premiere of Mozart's lost Symphony in F, 1981	{ 9.9 8.8
9	Fr.	♂ ♂ ♀ Henry Kissinger made secret visit to Peking, 1971	{ 9.8 8.9
10	Sa.	134° Death Valley, 1913	Telstar communications satellite launched, 1962
11	C	6th S. af. P. E stat.	{ 9.6 9.0
12	M.	Beware of meat twice boil'd. And an old foe reconcil'd.	Tides { 9.5 9.1
13	Tu.	♄ on Eq.	Henry Schoolcraft found source of Mississippi River, 1832
14	W.	Bastille Day	Democrats nominated Jimmy Carter for president, 1976
15	Th.	St. Swithin	Rain today means 40 days' more rain.
16	Fr.	Take counsel in wine, but resolve afterwards in water.	Thunderplumps
17	Sa.	"Wrong Way" Corrigan left N.Y. for California, arrived in Ireland instead, 1938	{ 9.2 10.9
18	C	7th S. af. P.	Occult. ♀ by ♄
19	M.	at peri.	George McGovern b. 1922
20	Tu.	St. Margaret	New
21	W.	♂ ♂ Spica	Ernest Hemingway b. 1899
22	Th.	St. Mary Magdalen	Edward Hopper b. 1882
23	Fr.	First autopsy performed in N.Y., 1691	5" rain, Concord, N.H., 1887
24	Sa.	Now state of the crops is known.	Peter Sellers d. 1980
25	C	8th S. af. P. St. James	♀ sup. ♂
26	M.	St. Anne	♂ ♀ ♄
27	Tu.	♂ ♀ ♄	Shah of Iran d. in Egypt, 1980
28	W.	Only deeds give strength to life, Only moderation gives it charm.	Dorothea Dix d. 1887
29	Th.	♂ ♂ ♄	Alexis de Tocqueville b. in France, 1805
30	Fr.	Sgt. Joyce Kilmer, author of poem "Trees," killed in France, 1918	{ 8.4 9.2
31	Sa.	St. Ignatius of Loyola	Occult. ♀ by ♄

The conjunction of Mars and Jupiter occurs on the 9th just before the two planets set. Between the 11th and 13th look for the Perseid meteor shower; on these nights you may see as many as one meteor per minute. The Milky Way is again overhead, and runs through Cassiopeia and the summer triangle down to Scorpio. Low in the west is the star Arcturus, and halfway between it and the summer triangle appear the "C" of Corona and the trapezoid of Hercules. The shooting stars from the 9th to the 13th are called St. Lawrence's Tears. The moon reaches its farthest point away from us — its apogee — on the 1st at 5:00 A.M., when it will be 405,000 kilometers from the center of the earth. Sixteen days later, at perigee, it will be 46,000 kilometers closer to us. The year's hottest weather often comes in early August, the result of heat built up in the atmosphere during the longer days of July.

ASTRONOMICAL CALCULATIONS

- Full Moon 4th day, 17th hour 35 min.
- ☾ Last Quarter 12th day, 6th hour 9 min.
- New Moon 18th day, 21st hour 46 min.
- ☽ First Quarter 26th day, 4th hour 50 min.

ADD 1 hr. for Daylight Saving Time.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS—PAGES 70-74

Day of Year	Day of Month	Day of Week	☀ Rises h. m.	Key	☀ Sets h. m.	Key	Length of Days h. m.	Sun Fast m.	Full Sea Boston A.M. P.M.	☾ Rises h. m.	Key	☾ Sets h. m.	Key	Declination of sun °	☾ Place	☾ Age	
213	1	C	4 36	A	7 04	E	14 28	9	8 <sup>3</sup> / <sub>4</sub>	9	5 <sup>P</sup> <sub>M</sub> 00	E	1 <sup>A</sup> <sub>M</sub> 33	A	17N.58	SAG	12
214	2	M.	4 37	A	7 03	D	14 26	9	9 <sup>1</sup> / <sub>2</sub>	9 <sup>3</sup> / <sub>4</sub>	5 49	E	2 18	B	17 43	SAG	13
215	3	Tu.	4 38	A	7 02	D	14 24	9	10 <sup>1</sup> / <sub>2</sub>	10 <sup>1</sup> / <sub>2</sub>	6 33	E	3 09	B	17 27	SAG	14
216	4	W.	4 39	A	7 00	D	14 21	9	11	11	7 12	E	4 06	B	17 11	CAP	15
217	5	Th.	4 40	A	6 59	D	14 19	9	11 <sup>1</sup> / <sub>2</sub>	11 <sup>3</sup> / <sub>4</sub>	7 46	D	5 05	B	16 55	CAP	16
218	6	Fr.	4 42	A	6 58	D	14 16	9	—	12 <sup>1</sup> / <sub>4</sub>	8 16	D	6 07	B	16 39	AQU	17
219	7	Sa.	4 43	A	6 57	D	14 14	9	12 <sup>1</sup> / <sub>2</sub>	1	8 44	D	7 10	C	16 22	AQU	18
220	8	C	4 44	A	6 55	D	14 11	9	1	1 <sup>1</sup> / <sub>2</sub>	9 11	D	8 14	C	16 05	AQU	19
221	9	M.	4 45	A	6 54	D	14 09	10	1 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub>	9 37	C	9 19	D	15 48	CET	20
222	10	Tu.	4 46	B	6 53	D	14 07	10	2 <sup>1</sup> / <sub>2</sub>	3	10 05	C	10 25	D	15 31	PSC	21
223	11	W.	4 47	B	6 51	D	14 04	10	3 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>	10 35	B	11 <sup>A</sup> <sub>M</sub> 33	E	15 13	CET	22
224	12	Th.	4 48	B	6 50	D	14 02	10	4 <sup>1</sup> / <sub>4</sub>	4 <sup>3</sup> / <sub>4</sub>	11 10	B	12 <sup>P</sup> <sub>M</sub> 43	E	14 55	ARI	23
225	13	Fr.	4 49	B	6 49	D	14 00	10	5 <sup>1</sup> / <sub>4</sub>	5 <sup>3</sup> / <sub>4</sub>	11 <sup>P</sup> <sub>M</sub> 51	B	1 55	E	14 37	TAU	24
226	14	Sa.	4 50	B	6 47	D	13 57	10	6 <sup>1</sup> / <sub>4</sub>	6 <sup>3</sup> / <sub>4</sub>	—	—	3 05	E	14 19	TAU	25
227	15	C	4 51	B	6 46	D	13 55	11	7 <sup>1</sup> / <sub>4</sub>	7 <sup>3</sup> / <sub>4</sub>	12 <sup>M</sup> <sub>A</sub> 40	B	4 13	E	14 00	GEM	26
228	16	M.	4 52	B	6 44	D	13 52	11	8 <sup>1</sup> / <sub>4</sub>	8 <sup>3</sup> / <sub>4</sub>	1 39	B	5 13	E	13 41	GEM	27
229	17	Tu.	4 53	B	6 43	D	13 50	11	9 <sup>1</sup> / <sub>4</sub>	9 <sup>3</sup> / <sub>4</sub>	2 47	B	6 05	E	13 22	CAN	28
230	18	W.	4 54	B	6 41	D	13 47	11	10 <sup>1</sup> / <sub>4</sub>	10 <sup>1</sup> / <sub>2</sub>	4 00	B	6 49	E	13 02	CAN	0
231	19	Th.	4 55	B	6 40	D	13 45	11	11 <sup>1</sup> / <sub>4</sub>	11 <sup>1</sup> / <sub>2</sub>	5 14	C	7 27	E	12 43	LEO	1
232	20	Fr.	4 56	B	6 38	D	13 42	12	—	12	6 28	C	7 56	D	12 23	LEO	2
233	21	Sa.	4 57	B	6 37	D	13 40	12	12 <sup>1</sup> / <sub>4</sub>	12 <sup>3</sup> / <sub>4</sub>	7 39	D	8 25	D	12 03	VIR	3
234	22	C	4 58	B	6 35	D	13 37	12	1	1 <sup>1</sup> / <sub>2</sub>	8 47	D	8 53	C	11 43	VIR	4
235	23	M.	4 59	B	6 33	D	13 34	12	2	2 <sup>1</sup> / <sub>2</sub>	9 53	D	9 19	B	11 23	VIR	5
236	24	Tu.	5 01	B	6 32	D	13 31	13	2 <sup>3</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>4</sub>	10 57	E	9 47	B	11 03	VIR	6
237	25	W.	5 02	B	6 30	D	13 28	13	3 <sup>1</sup> / <sub>2</sub>	4	11 <sup>A</sup> <sub>M</sub> 59	E	10 17	B	10 42	LIB	7
238	26	Th.	5 03	B	6 29	D	13 26	13	4 <sup>1</sup> / <sub>2</sub>	4 <sup>3</sup> / <sub>4</sub>	1 <sup>P</sup> <sub>M</sub> 00	E	10 51	B	10 21	LIB	8
239	27	Fr.	5 04	B	6 27	D	13 23	13	5 <sup>1</sup> / <sub>2</sub>	5 <sup>3</sup> / <sub>4</sub>	1 58	E	11 <sup>P</sup> <sub>M</sub> 29	B	10 00	OPH	9
240	28	Sa.	5 05	B	6 25	D	13 20	14	6 <sup>1</sup> / <sub>2</sub>	6 <sup>3</sup> / <sub>4</sub>	2 53	E	—	—	9 39	SAG	10
241	29	C	5 06	B	6 24	D	13 18	14	7 <sup>1</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>2</sub>	3 44	E	12 <sup>M</sup> <sub>A</sub> 13	B	9 18	SAG	11
242	30	M.	5 07	B	6 22	D	13 15	14	8 <sup>1</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>2</sub>	4 30	E	1 02	B	8 57	SAG	12
243	31	Tu.	5 08	B	6 20	D	13 12	15	9	9 <sup>1</sup> / <sub>4</sub>	5 <sup>P</sup> <sub>M</sub> 11	E	1 <sup>A</sup> <sub>M</sub> 57	B	8N.35	CAP	13





I call to mind the summer day,  
The early harvest mowing,  
The sky with sun and clouds at play,  
And flowers with breezes blowing.  
— John Greenleaf Whittier

**Farmer's Calendar**

This is the month of signs. The signs are that the summer will end, and of them all the best and most eloquent is the ringing of the cicada, which comes down from all the trees. You will hear a thousand for every one you'll see, but I found one once on a windowsill. It's an insect that looks somehow like a fish — two inches long, black with shiny green bars, bulging eyes, and big stiff wings clear as glass.

The cicada is called the weather bug, I guess because it appears and begins its strange calling now, when summer bends fairly toward the equinox, bringing changes, and sudden rain. Its noise is hard to describe; there is nothing like it in nature that I have heard. Imagine a whine, the sound of a power saw going at high speed into a cracked board. You can't tell, when you hear the cicada, just where its whine comes from, for it seems to be everywhere, like air turned to sound.

The cicada's buzz continues through the warm afternoons. It is to be heard constantly, without interruption, as though nothing could disturb the insect or make it stop its song. Nothing can. The French entomologist, J. H. Fabre, was struck a hundred years ago by the persistence of the cicada's call in his village. He tried to startle the cicadas, to make them shut up for a minute. He banged on pans and blew horns under the trees where the cicadas whined. They didn't hear. Fabre went to the length of rolling a pair of cannon under the trees and firing blanks. The cicadas were oblivious. Nothing the naturalist did could interrupt their buzz, any more than he could have interrupted the seasons in their change, which the cicada appears to proclaim.

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓
1	C	9 <sup>th</sup> S. af. P. Lammas Day	at apo. Dress
2	M.	☾ at ♍ • ☾ runs low • 1st U.S. Census reported	like
3	Tu.	• 3,929,214 pop., 1790	
4	W.	Christopher Columbus sailed from Spain, 1492	Rupert Brooke {8.5 a
5	Th.	Full • Lizzie Borden's parents murdered, 1892	scarecrow;
6	Fr.	16" rain, Concord, Pa., 1843	U.S. Grant's funeral, 1886 • Tides {8.9 listen
7	Sa.	Transfiguration • Atomic bomb dropped on Hiroshima, Japan, 1945	to the
8	C	Kings and bears often worry their keepers. • Tides {10.1	corn
9	M.	10 <sup>th</sup> S. af. P. • Tides {9.3	grow.
10	Tu.	♁ stat. • ♀♂♂ • ♀♀ Pollux • ☾ on Eq.	Try
11	W.	Missouri admitted to Union as 24th state, 1821 • Tides {9.7	to reach
12	Th.	Dog Days end. Hayfever season begins	the beach.
13	Fr.	Women's dress styles down to ankles, 1947 • Cecil B. deMille	Brief
14	Sa.	A flatterer never seems absurd. • Tides {10.1	relief
15	C	The flatter'd always takes his word. Lafayette and son began nostalgic tour of U.S., 1824 • Social Security began, 1935	comes
16	M.	11 <sup>th</sup> S. af. P. • ☾ at ♏ •	to
17	Tu.	at peri. • ☾ runs high • George Meany b. 1894	grief.
18	W.	Cat Nights begin. • ♀♀ • Mae West b. 1892	Torrid —
19	Th.	New • 19th Amendment gave women right to vote, 1920	some
20	Fr.	Happy's the wooing that's not long a-doing. • Ogden Nash b. 1902	say
21	Sa.	♂♀ • Fireball danced on a fence, Topeka, Kan., 1958	horrid.
22	C	Wilt Chamberlain b. 1936 • Hawaii admitted to Union, 1959	Raining
23	M.	12 <sup>th</sup> S. af. P. • ♀♂ • Fanny Farmer opened School of Cookery, Boston, 1902	a blue
24	Tu.	St. Bartholomew • If fair and clear, a prosperous autumn.	streak,
25	W.	♂♂ • Gower Champion d. on opening day of "42nd St.," 1980	then
26	Th.	First telecast of major league baseball game, Brooklyn, 1939 • Tides {8.5	red
27	Fr.	Tarzan of the Apes published in magazine, 1912 • Tides {8.1	hot
28	Sa.	St. Augustine • ☾ at apo. • Occult. ♀ by ☾	for a
29	C	13 <sup>th</sup> S. af. P. • John Bapt. behheaded • ☾ at ♏ • ☾ runs low	week.
30	M.	Confederates under Lee won Battle of Bull Run, Va., 1862 • Tides {8.0	
31	Tu.	He that lieth down with dogs, shall rise up with fleas. • Tides {8.3	



Fall arrives at 3:46 A.M. on the 23rd, the autumnal equinox, when the sun crosses the celestial equator. On the 7th Venus is in conjunction with the bright star Regulus as it rises; during the week of September 18-24 there are, altogether, 8 conjunctions and occultations. Our galaxy, the Milky Way, which we see edge on, is shifting its position in the sky as fall enters, until in November it runs from east to west. (In mid-summer it crosses the skies from north to south.) The three bright stars that form the summer triangle are overhead; Corona and Hercules are west of them. Lower in the east is the great square of Pegasus. Length of day decreases a total of an hour and 22 minutes this month. Day and night are close to equal, by the sun, on the 18th and 19th; by the clock, on the 26th. Delphinus, the Dolphin, lies in the part of the sky called "the Sea": near it swim Pisces, Capricorn, and Cetus, all aquatic. The Dolphin is small, its stars faint, so look for it on moonless nights.

ASTRONOMICAL CALCULATIONS

- Full Moon 3rd day, 7th hour 29 min.
- ☾ Last Quarter 10th day, 12th hour 20 min.
- New Moon 17th day, 7th hour 10 min.
- ☽ First Quarter 24th day, 23rd hour 7 min.

ADD 1 hr. for Daylight Saving Time.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS—PAGES 70-74

Day of Year	Day of Month	Day of Week	☀ Rises h. m.	Key	☀ Sets h. m.	Key	Length of Days h. m.	Sun Fast m.	Full Sea Boston		☽ Rises h. m.	Key	☽ Sets h. m.	Key	Declination of sun °	☽ Place	☽ Age
									A.M.	P.M.							
244	1	W.	5 09	B	6 19	D	13 10	15	9 <sup>3</sup> <sub>4</sub>	10	5 <sup>P</sup> <sub>M</sub> 47	E	2 <sup>A</sup> <sub>M</sub> 55	B	8N.13	CAP	14
245	2	Th.	5 10	B	6 17	D	13 07	15	10 <sup>3</sup> <sub>2</sub>	10 <sup>3</sup> <sub>2</sub>	6 18	E	3 57	B	7 51	AQU	15
246	3	Fr.	5 11	B	6 15	D	13 04	16	11 <sup>3</sup> <sub>4</sub>	11 <sup>3</sup> <sub>4</sub>	6 47	D	5 00	C	7 29	AQU	16
247	4	Sa.	5 12	B	6 14	D	13 02	16	11 <sup>3</sup> <sub>4</sub>	—	7 14	D	6 05	D	7 07	AQU	17
248	5	C	5 13	B	6 12	D	12 59	16	12 <sup>1</sup> <sub>4</sub>	12 <sup>1</sup> <sub>4</sub>	7 41	C	7 11	D	6 45	PSC	18
249	6	M.	5 14	B	6 10	D	12 56	17	12 <sup>3</sup> <sub>4</sub>	1	8 08	C	8 18	D	6 23	CET	19
250	7	Tu.	5 15	B	6 08	D	12 53	17	1 <sup>1</sup> <sub>4</sub>	1 <sup>3</sup> <sub>4</sub>	8 37	B	9 25	E	6 00	PSC	20
251	8	W.	5 16	B	6 07	D	12 51	17	2 <sup>1</sup> <sub>4</sub>	2 <sup>1</sup> <sub>4</sub>	9 10	B	10 35	E	5 38	ARI	21
252	9	Th.	5 17	B	6 05	D	12 48	18	3	3 <sup>1</sup> <sub>4</sub>	9 48	B	11 <sup>A</sup> <sub>M</sub> 45	E	5 15	TAU	22
253	10	Fr.	5 19	B	6 03	D	12 44	18	4	4 <sup>1</sup> <sub>4</sub>	10 34	B	12 <sup>M</sup> <sub>M</sub> 56	E	4 52	TAU	23
254	11	Sa.	5 20	B	6 01	D	12 41	18	5	5 <sup>1</sup> <sub>4</sub>	11 <sup>P</sup> <sub>M</sub> 28	B	2 03	E	4 29	TAU	24
255	12	C	5 21	B	6 00	D	12 39	19	6	6 <sup>1</sup> <sub>4</sub>	—	—	3 04	E	4 07	GEM	25
256	13	M.	5 22	B	5 58	D	12 36	19	7	7 <sup>1</sup> <sub>4</sub>	12 <sup>A</sup> <sub>M</sub> 31	B	3 58	E	3 44	GEM	26
257	14	Tu.	5 23	B	5 56	D	12 33	19	8	8 <sup>1</sup> <sub>4</sub>	1 40	B	4 43	E	3 21	CAN	27
258	15	W.	5 24	B	5 54	C	12 30	20	9	9 <sup>1</sup> <sub>4</sub>	2 53	B	5 21	E	2 58	LEO	28
259	16	Th.	5 25	B	5 53	C	12 28	20	10	10 <sup>1</sup> <sub>4</sub>	4 06	C	5 54	D	2 34	LEO	29
260	17	Fr.	5 26	B	5 51	C	12 25	20	10 <sup>3</sup> <sub>4</sub>	11 <sup>1</sup> <sub>4</sub>	5 18	C	6 23	D	2 11	LEO	0
261	18	Sa.	5 27	B	5 49	C	12 22	21	11 <sup>1</sup> <sub>2</sub>	—	6 27	D	6 51	C	1 48	VIR	1
262	19	C	5 28	B	5 47	C	12 19	21	12	12 <sup>1</sup> <sub>4</sub>	7 35	D	7 18	C	1 25	VIR	2
263	20	M.	5 29	B	5 46	C	12 17	21	12 <sup>3</sup> <sub>4</sub>	1	8 41	E	7 46	B	1 02	VIR	3
264	21	Tu.	5 30	B	5 44	C	12 14	22	1 <sup>1</sup> <sub>2</sub>	1 <sup>3</sup> <sub>4</sub>	9 45	E	8 15	B	0 38	LIB	4
265	22	W.	5 31	B	5 42	C	12 11	22	2 <sup>1</sup> <sub>4</sub>	2 <sup>1</sup> <sub>4</sub>	10 47	E	8 48	B	0N.15	LIB	5
266	23	Th.	5 32	C	5 40	C	12 08	23	3	3	11 <sup>A</sup> <sub>M</sub> 48	E	9 24	A	0s.07	OPH	6
267	24	Fr.	5 33	C	5 39	C	12 06	23	4	4 <sup>1</sup> <sub>4</sub>	12 <sup>P</sup> <sub>M</sub> 45	E	10 05	B	0 31	OPH	7
268	25	Sa.	5 34	C	5 37	C	12 03	23	4 <sup>3</sup> <sub>4</sub>	5	1 38	E	10 52	B	0 55	SAG	8
269	26	C	5 36	C	5 35	C	11 59	24	5 <sup>3</sup> <sub>4</sub>	6	2 25	E	11 <sup>M</sup> <sub>M</sub> 45	B	1 18	SAG	9
270	27	M.	5 37	C	5 33	C	11 56	24	6 <sup>3</sup> <sub>4</sub>	7	3 08	E	—	—	1 41	SAG	10
271	28	Tu.	5 38	C	5 31	C	11 53	24	7 <sup>1</sup> <sub>2</sub>	7 <sup>3</sup> <sub>4</sub>	3 45	E	12 <sup>A</sup> <sub>M</sub> 42	B	2 04	CAP	11
272	29	W.	5 39	C	5 30	C	11 51	25	8 <sup>1</sup> <sub>2</sub>	8 <sup>3</sup> <sub>4</sub>	4 18	E	1 43	B	2 28	CAP	12
273	30	Th.	5 40	C	5 28	C	11 48	25	9 <sup>1</sup> <sub>4</sub>	9 <sup>1</sup> <sub>2</sub>	4 <sup>P</sup> <sub>M</sub> 48	D	2 <sup>A</sup> <sub>M</sub> 46	C	2s.51	AQU	13



Season of mists and mellow fruitfulness!  
 Close bosom-friend of the maturing sun;  
 Conspiring with him how to load and bless  
 With fruit the vines that round the thatch-eaves run.  
 — John Keats

**Farmer's Calendar**

There is no part of nature's bounty that is better protected against our love than the butternut. In September the nuts — green, sticky, the size of a small hen's egg — are falling. Lying in the grass they are ankle-turners, and because of them the lawn is like a cobblestone street if you have a garden cart or mower to roll over it. The nuts are no good to eat now. Gather a dozen and spread them on an old window screen to dry. The green outer husk will turn dark brown, and be easily sloughed away. Beneath it is the nut.

The butternut is a mighty citadel. Its material must be among the hardest and toughest in vegetable nature. It is ridged lengthwise with raised edges that are sharp enough to cut skin. Within is the nut meat, its taste like a mild walnut. It's good if you can get it out intact, but that is nearly impossible. Usually you take a hammer to your butternut to crack it. You pound at the nut without result until you overreach and hit it too hard. Then the nut goes off like a grenade, and you are left with fragments of shell and less than enough nut to really taste — and that, mashed. With practice, however, and using a special technique, which I am about to reveal and which comes from the world of music, you can crack a butternut so as to have something to show for it.

Here is how. You need a hard, level surface and a hammer — a full-sized hammer, not a baby. To crack the nut, strike it with the hammer, imagining that you are a xylophonist who is playing the first four notes of Beethoven's Fifth Symphony: you know them — da, da, da, dum. The three da's are light taps to let you get the stroke on the nut with your hammer. The dum puts it away.

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓
1	W.	<b>St. Giles</b> • 110° Los Angeles, Calif., 1955 • Tides {8.6 • <b>Too</b>	
2	Th.	Labor Day hurricane, Florida Keys, 1935. Bar. pressure 26.35" • Tides {9.0 • <b>cool</b>	
3	Fr.	Full ○ • Frederick Douglass escaped from slavery, 1838 • <b>for the</b>	
4	Sa.	Under majority rule, heads are counted; under minority rule, heads are cracked. • <b>pool.</b>	
5	C	<b>14<sup>th</sup> S. af. P.</b> • ♀ stat. • ♀ Gr. Elong. • ♀ on Eq.	
6	M.	<b>Labor Day</b> Oberlin, 1st co-ed college, opened, 1837 {10.3 • <b>A golden</b>	
7	Tu.	Now separate ewes from lambs. • ♂ ♀ Regulus • <b>glow —</b>	
8	W.	<b>Nativ. of Mary</b> • Huey Long murdered, 1935 • <b>Geronimo!</b>	
9	Th.	In youth we run into difficulties; in old age difficulties run into us. • Tides {9.5 • <b>Rills</b>	
10	Fr.	Hurricane Carla • Hot dog with a zipper hit Texas coast, 1961 • intro. by meat-packer, 1927 • <b>and</b>	
11	Sa.	British Army defeated Gen. Washington at Battle of Brandywine Creek, Pa., 1777 • <b>rilllets,</b>	
12	C	<b>15<sup>th</sup> S. af. P.</b> • ♂ at ♀ • ♀ runs high • <b>raining</b>	
13	M.	at Victoria Woodhull, 1st woman presidential candidate, b. 1838 • {8.9 • <b>pots</b>	
14	Tu.	<b>Holy Cross</b> • Hard frost, Albany, N.Y., 1963 • {9.3 • <b>and</b>	
15	W.	Philosophy: unintelligible answers • Tides {9.7 • <b>skilletts.</b>	
16	Th.	Pilgrims sailed from Plymouth, England, aboard <i>Mayflower</i> , 1620 • Tides {10.1 • <b>New</b>	
17	Fr.	New • Name of Trimountaine, Mass., changed to Boston, 1630 • <b>moon</b>	
18	Sa.	<b>Rosh Hashanah</b> • ♂ ♀ • ♀ on Eq. • <b>brings</b>	
19	C	<b>16<sup>th</sup> S. af. P.</b> • ♀ stat. • ♂ ♀ • <b>a</b>	
20	M.	♂ ♀ • ♂ ♀ Spica • Tides {10.5 • <b>boon —</b>	
21	Tu.	<b>St. Matthew</b> • South wind today means warm autumn. • <b>seven</b>	
22	W.	Ember Day • ♂ ♂ • ♂ ♂ • ♂ ♂ • <b>wondrous</b>	
23	Th.	Equinox • Defeated British Army sailed for England, 1783 • {8.8 • <b>days,</b>	
24	Fr.	Ember Day • Occult. ♀ by ♀ • Tides {8.4 • <b>we</b>	
25	Sa.	Ember Day • ♀ at apo. • ♀ at ♀ • {8.0 • <b>say.</b>	
26	C	<b>17<sup>th</sup> S. af. P.</b> • ♀ runs low • <b>Warm,</b>	
27	M.	<b>Yom Kippur</b> • 21" snow, Denver, Colo., 1936 • {7.8 • <b>cleur —</b>	
28	Tu.	"Black Sox" baseball scandal broke, 1920 • 125 m.p.h. winds, Pensacola, Fla., 1917 • {8.4 • <b>enjoy</b>	
29	W.	<b>St. Michael</b> • Lord Horatio Nelson b. 1758 • {9.3 • <b>a cold</b>	
30	Th.	<b>St. Jerome</b> • Revised Standard Version of Bible published, 1952 • <b>beer.</b>	

Consider the postage stamp, my son. It secures success through its ability to stick to one thing till it gets there.



*Elusive Mercury is at its most visible in the east just before sunrise during the third week of October. Saturn is in conjunction on the 18th, and will be at its farthest point from us — 980 million miles. Toward the end of October Venus and Saturn rise almost together just before dawn, a lovely sight. Pegasus has moved high into the sky; Corona has almost set in the west in early evening. The Big Dipper is barely visible as it skims the northern horizon. Low in the east are the Pleiades and Aldebaran, symbols of fall. The Pleiades were seven maidens, daughters of Atlas, turned into stars so Orion could not catch them. Their return to the sky next May marks the beginning of new growing and sailing seasons. The sun's path continues its shift southward — it will be 14° 9' south by Halloween. Dark increases another hour and 22 minutes, mostly at sunset. All clocks should be returned to Standard Time on the 31st.*

ASTRONOMICAL CALCULATIONS

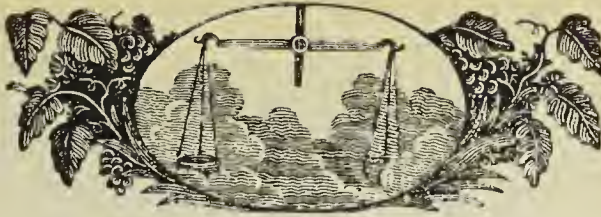
- Full Moon 2nd day, 20th hour 10 min.
- ☾ Last Quarter 9th day, 18th hour 28 min.
- New Moon 16th day, 19th hour 5 min.
- ☽ First Quarter 24th day, 19th hour 9 min.

ADD 1 hr. for Daylight Saving Time until 2 A.M. Oct. 31.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS—PAGES 70-74

Day of Year	Day of Month	Day of Week	☀ Rises h. m.	Key	☀ Sets h. m.	Key	Length of Days h. m.	Sun Fast m.	Full Sea Boston A.M. P.M.	☽ Rises h. m.	Key	☽ Sets h. m.	Key	Declination of sun °	☽ Place	☽ Age
274	1	Fr.	5 41	C	5 26	C	11 45	25	9 <sup>3</sup> <sub>4</sub> 10	5 <sup>P</sup> <sub>M</sub> 16	D	3 <sup>A</sup> <sub>M</sub> 51	C	3s. 15	AQU	14
275	2	Sa.	5 42	C	5 25	C	11 43	26	10 <sup>3</sup> <sub>4</sub> 10 <sup>3</sup> <sub>4</sub>	5 43	D	4 57	D	3 38	PSC	15
276	3	<b>C</b>	5 43	C	5 23	C	11 40	26	11 <sup>1</sup> <sub>2</sub> 11 <sup>1</sup> <sub>2</sub>	6 10	C	6 05	D	4 01	CET	16
277	4	M.	5 44	C	5 21	C	11 37	26	11 <sup>1</sup> <sub>4</sub> —	6 38	B	7 14	E	4 24	PSC	17
278	5	Tu.	5 45	C	5 19	B	11 34	27	12 <sup>1</sup> <sub>4</sub> 12 <sup>1</sup> <sub>4</sub>	7 11	B	8 25	E	4 47	CET	18
279	6	W.	5 47	C	5 18	B	11 31	27	1 1	7 48	B	9 37	E	5 10	TAU	19
280	7	Th.	5 48	C	5 16	B	11 28	27	1 <sup>3</sup> <sub>4</sub> 2	8 31	B	10 48	E	5 33	TAU	20
281	8	Fr.	5 49	C	5 14	B	11 25	27	2 3	9 23	B	11 <sup>A</sup> <sub>M</sub> 57	E	5 56	TAU	21
282	9	Sa.	5 50	D	5 13	B	11 23	28	3 4	10 22	B	1 <sup>P</sup> <sub>M</sub> 00	E	6 19	GEM	22
283	10	<b>C</b>	5 51	D	5 11	B	11 20	28	4 5	11 <sup>P</sup> <sub>M</sub> 28	B	1 55	E	6 42	GEM	23
284	11	M.	5 52	D	5 09	B	11 17	28	5 <sup>3</sup> <sub>4</sub> 6 <sup>1</sup> <sub>4</sub>	—	—	2 42	E	7 04	CAN	24
285	12	Tu.	5 53	D	5 08	B	11 15	28	6 <sup>3</sup> <sub>4</sub> 7 <sup>1</sup> <sub>4</sub>	12 <sup>A</sup> <sub>M</sub> 38	B	3 21	E	7 27	LEO	25
286	13	W.	5 54	D	5 06	A	11 12	29	8 8 <sup>1</sup> <sub>4</sub>	1 50	C	3 55	D	7 49	LEO	26
287	14	Th.	5 56	D	5 04	A	11 08	29	8 <sup>3</sup> <sub>4</sub> 9 <sup>1</sup> <sub>4</sub>	3 01	C	4 24	D	8 12	LEO	27
288	15	Fr.	5 57	D	5 03	A	11 06	29	9 <sup>3</sup> <sub>4</sub> 10	4 10	D	4 52	C	8 34	VIR	28
289	16	Sa.	5 58	D	5 01	A	11 03	29	10 <sup>1</sup> <sub>2</sub> 10 <sup>3</sup> <sub>4</sub>	5 18	D	5 18	C	8 56	VIR	0
290	17	<b>C</b>	5 59	D	5 00	B	11 01	30	11 <sup>1</sup> <sub>4</sub> 11 <sup>1</sup> <sub>2</sub>	6 24	D	5 45	C	9 18	VIR	1
291	18	M.	6 00	D	4 58	B	10 58	30	11 <sup>3</sup> <sub>4</sub> —	7 30	E	6 13	B	9 40	LIB	2
292	19	Tu.	6 01	D	4 56	B	10 55	30	12 <sup>1</sup> <sub>4</sub> 12 <sup>1</sup> <sub>2</sub>	8 33	E	6 44	B	10 01	LIB	3
293	20	W.	6 03	D	4 55	B	10 52	30	1 1 <sup>1</sup> <sub>4</sub>	9 35	E	7 19	B	10 23	LIB	4
294	21	Th.	6 04	D	4 53	B	10 49	30	1 <sup>3</sup> <sub>4</sub> 2	10 35	E	7 59	A	10 44	OPH	5
295	22	Fr.	6 05	D	4 52	B	10 47	30	2 <sup>1</sup> <sub>2</sub> 2 <sup>3</sup> <sub>4</sub>	11 <sup>A</sup> <sub>M</sub> 30	E	8 44	B	11 06	SAG	6
296	23	Sa.	6 06	D	4 50	B	10 44	31	3 <sup>1</sup> <sub>4</sub> 3 <sup>1</sup> <sub>2</sub>	12 <sup>P</sup> <sub>M</sub> 21	E	9 34	B	11 27	SAG	7
297	24	<b>C</b>	6 07	D	4 49	B	10 42	31	4 <sup>1</sup> <sub>4</sub> 4 <sup>1</sup> <sub>2</sub>	1 05	E	10 29	B	11 48	SAG	8
298	25	M.	6 09	D	4 48	B	10 39	31	5 5 <sup>1</sup> <sub>4</sub>	1 43	E	11 <sup>P</sup> <sub>M</sub> 28	B	12 09	CAP	9
299	26	Tu.	6 10	D	4 46	B	10 36	31	6 6 <sup>1</sup> <sub>4</sub>	2 17	E	—	—	12 29	CAP	10
300	27	W.	6 11	D	4 45	B	10 34	31	7 7 <sup>1</sup> <sub>4</sub>	2 48	D	12 <sup>A</sup> <sub>M</sub> 30	B	12 50	AQU	11
301	28	Th.	6 12	D	4 43	B	10 31	31	7 <sup>3</sup> <sub>4</sub> 8	3 16	D	1 33	C	13 10	AQU	12
302	29	Fr.	6 14	D	4 42	B	10 28	31	8 <sup>1</sup> <sub>2</sub> 8 <sup>3</sup> <sub>4</sub>	3 43	D	2 38	D	13 30	AQU	13
303	30	Sa.	6 15	D	4 41	B	10 26	31	9 <sup>1</sup> <sub>4</sub> 9 <sup>1</sup> <sub>2</sub>	4 10	C	3 45	D	13 50	CET	14
304	31	<b>C</b>	6 16	D	4 39	B	10 23	31	10 10 <sup>1</sup> <sub>4</sub>	4 <sup>P</sup> <sub>M</sub> 37	C	4 <sup>A</sup> <sub>M</sub> 55	D	14s. 09	PSC	15





Hail, old October, bright and chill,  
 First freedman from the summer sun!  
 Spice high the bowl, and drink your fill!  
 Thank heaven, at last the summer's done!  
 — Thomas Constable

**Farmer's Calendar**

Sometime in the month that spans the last half of September and the first half of October, the first frost comes. Often the first hard frost seems to pull its punch at first, playing cat-and-mouse with gardens, flowerbeds, and the more delicate wild vegetation. One night the frost will make a light pass only, as if to flick the garden with its paw, claws sheathed. The next morning only the tips of some of the leaves on the more tender plants will be black with frost's burning. It will look as though the frost just slipped up to the garden, peeped in through the fence, circled, and silently slipped away. This is the kitten frost.

A couple of no-frost nights will follow, with warm days. The leaves that were touched by the kitten frost's playful tap will fall away, and the gardens will appear to perk up. Then one night the first hard, killing frost will come down all at once, devastatingly — the tiger frost. The cat-and-mouse play will be over, and the cat will have won again. In the morning the garden will look like an explosion in a bat colony: blasted, blackened plants, knocked down, lying everywhere. How could a place so vividly full of life as a garden have been reduced overnight to such a ruin? The squash vines will be black, lank, and somehow greasy looking, their leaves like collapsed umbrellas. The tomatoes will be in a like condition, and all the fight will have gone out of the cucumbers. You might as well pull them up, cut them off, and drag them away. Take up the stakes and poles, roll up the climbing fences. If you're going to turn over the earth this fall, you'd best get to it. In another couple of weeks the garden will be hard underfoot, the frost having gone into the ground.

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	• Weather ↓
1	Fr.	<b>St. Remigius</b> • Oct. always has 19 fine days	{ 9.4 Helter- 10.0
2	Sa.	<b>Succoth</b> • ♀ inf. ♂ • ♂♂ Antares	• Full Harvest ○
3	C	<b>18<sup>th</sup> S. af. P.</b> • ☾ on Eq.	• skelter,
4	M.	<b>St. Francis of Assisi</b> • Dense fog at Battle of Germantown, 1777	head
5	Tu.	116°, Sentinel, • Robert Goddard b. 1882	{ 10.3 10.8 for
6	W.	<b>St. Faith</b> • Grantland Rice broadcast first World Series, 1921	• shelter.
7	Th.	Hurricane Daisy • Edgar Allan Poe d. 1849	{ 9.9 10.8
8	Fr.	⊕ at peri. • You can't hold a man down without staying down with him.	{ 9.6 10.5 moon
9	Sa.	⊕ at ♀ • runs high • Aimee Semple McPherson b. 1890	wanes.
10	C	<b>19<sup>th</sup> S. af. P.</b> • Tides	{ 8.9 10.0 • Indian
11	M.	<b>Columbus Day</b> • Eleanor Roosevelt b. 1884	summer's
12	Tu.	Columbus landed on San Salvador Island, Bahamas, 1492	• Tides { 9.1 10.0 • a
13	W.	<i>Joy and Temperance and Repose slam the door on the doctor's nose.</i>	• hummer.
14	Th.	Pilot Chuck Yeager broke sound barrier at 670 m.p.h., Edwards A.F.B., 1947	<i>Need a</i>
15	Fr.	♂♀ ⊕ • on Eq. • Spy Mata Hari executed, 1917	• blanket,
16	Sa.	<b>St. Gallus</b> • New • Cuban missile crisis began, 1962	{ 10.5 10.4 and
17	C	<b>20<sup>th</sup> S. af. P.</b> • ♀ Gr. Elong. W. 18°	• quilts
18	M.	<b>St. Luke</b> • ♂ ♀ ⊕ • ♂ ♀ ⊕	• to
19	Tu.	♂ ♂ ⊕ • "Star-Spangled Banner" sung for 1st time, 1814	{ 9.9 10.4 flank it.
20	W.	♂ ⊕ ⊕ • Astronomer Harlow Shapley d. 1972	{ 9.5 10.1 • Flurries
21	Th.	♂ ♂ ⊕ • Occult. Ψ by ⊕	• Tides { 9.0 9.7 and
22	Fr.	⊕ at ♀ • 88°, New York City, 1979	{ 8.6 9.3 • other
23	Sa.	Swallows leave San Juan, Capistrano, Calif. • at apo. • runs low	• gurry.
24	C	<b>21<sup>st</sup> S. af. P.</b> • Chipmunks hibernate	• Warm
25	M.	<b>St. Crispin</b> • ♂ ♂ Ψ • Tides	{ 7.9 8.5 spell,
26	Tu.	<i>In war the heroes always outnumber the soldiers ten to one.</i>	• Tides { 7.9 8.6 we tell.
27	W.	Jascha Heifetz made debut, Carnegie Hall, 1917	{ 8.2 8.8 • Leaves
28	Th.	<b>Sts. Simon and Jude</b> • ♂ ♀ Spica	• fly by
29	Fr.	Tornado killed 29, Berryville, Ark., 1942 • John Keats b. 1795	{ 9.2 9.5 in the
30	Sa.	⊕ on Eq. • Muhammad Ali KO'd George Foreman, 1974	{ 9.8 9.8 breeze.
31	C	<b>22<sup>nd</sup> S. af. P.</b> • Halloween	Daylight Saving Time ends.

Venus is in superior conjunction on the 3rd, but is invisible as its orbit carries it directly behind the sun. There it is its farthest from us at 160 million miles. On that same day it is in conjunction with the moon. The moon occults Mars just at sunset on the 19th. The Milky Way now runs from east to west, arching toward the north. Directly overhead lie Pegasus and Cassiopeia; the summer triangle hovers low in the west. Low in the east are Orion, Taurus, and the Pleiades. The constellation Orion, brilliantly alit, includes bright stars Betelgeuse and Rigel. Orion was a mighty hunter who chased maidens as happily as game, but he was killed by Scorpio's sting. Darkness falls early in November — there is only a bit more than nine hours of daylight by Thanksgiving. The sun's path is now far to the south of the celestial equator. Watch for two full moons this month, the one on the 1st and a "blue moon" on the 30th.

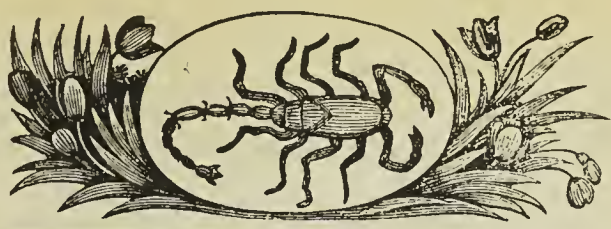
ASTRONOMICAL CALCULATIONS

- Full Moon 1st day, 7th hour 58 min.
- ☾ Last Quarter 8th day, 1st hour 39 min.
- New Moon 15th day, 10th hour 11 min.
- ☽ First Quarter 23rd day, 15th hour 6 min.
- Full Moon 30th day, 19th hour 22 min.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS — PAGES 70-74

Day of Year	Day of Month	Day of Week	☀ Rises h. m.	☀ Key	☀ Sets h. m.	☀ Key	Length of Days h. m.	Sun Fast m.	Full Sea Boston A.M. P.M.	☾ Rises h. m.	☾ Key	☾ Sets h. m.	☾ Key	Declination of sun °	☾ Place	☾ Age
305	1	M.	6 17	D	4 38	B	10 21	31	10 <sup>1</sup> / <sub>2</sub> 11	5 <sup>P</sup> <sub>M</sub> 09	B	6 <sup>A</sup> <sub>M</sub> 06	E	14s.28	CET	16
306	2	Tu.	6 19	D	4 37	B	10 18	31	11 <sup>3</sup> / <sub>4</sub> 11 <sup>3</sup> / <sub>4</sub>	5 44	B	7 20	E	14 47	ARI	17
307	3	W.	6 20	D	4 35	B	10 15	31	— 12 <sup>1</sup> / <sub>4</sub>	6 26	B	8 34	E	15 06	TAU	18
308	4	Th.	6 21	D	4 34	B	10 13	31	12 <sup>3</sup> / <sub>4</sub> 1	7 15	B	9 47	E	15 25	TAU	19
309	5	Fr.	6 22	D	4 33	B	10 11	31	1 <sup>1</sup> / <sub>2</sub> 1 <sup>3</sup> / <sub>4</sub>	8 14	B	10 54	E	15 43	GEM	20
310	6	Sa.	6 24	D	4 32	A	10 08	31	2 <sup>1</sup> / <sub>2</sub> 2 <sup>3</sup> / <sub>4</sub>	9 20	B	11 <sup>A</sup> <sub>M</sub> 53	E	16 01	GEM	21
311	7	<b>C</b>	6 25	D	4 31	A	10 06	31	3 <sup>1</sup> / <sub>2</sub> 3 <sup>3</sup> / <sub>4</sub>	10 29	B	12 <sup>P</sup> <sub>M</sub> 43	E	16 19	CAN	22
312	8	M.	6 26	D	4 30	A	10 04	31	4 <sup>1</sup> / <sub>2</sub> 4 <sup>3</sup> / <sub>4</sub>	11 <sup>P</sup> <sub>M</sub> 40	B	1 24	E	16 37	CAN	23
313	9	Tu.	6 27	D	4 28	A	10 01	31	5 <sup>1</sup> / <sub>2</sub> 6	— —	—	1 58	D	16 54	LEO	24
314	10	W.	6 29	D	4 27	B	9 58	31	6 <sup>1</sup> / <sub>2</sub> 7	12 <sup>A</sup> <sub>M</sub> 51	C	2 28	D	17 11	LEO	25
315	11	Th.	6 30	D	4 26	B	9 56	31	7 <sup>1</sup> / <sub>2</sub> 8	1 59	C	2 56	D	17 28	VIR	26
316	12	Fr.	6 31	D	4 25	B	9 54	31	8 <sup>1</sup> / <sub>2</sub> 9	3 06	D	3 21	C	17 44	VIR	27
317	13	Sa.	6 32	D	4 24	B	9 52	31	9 <sup>1</sup> / <sub>4</sub> 9 <sup>3</sup> / <sub>4</sub>	4 11	D	3 46	C	18 00	VIR	28
318	14	<b>C</b>	6 34	D	4 23	A	9 49	31	10 10 <sup>1</sup> / <sub>2</sub>	5 17	E	4 14	B	18 16	VIR	29
319	15	M.	6 35	D	4 23	A	9 48	30	10 <sup>3</sup> / <sub>4</sub> 11 <sup>1</sup> / <sub>4</sub>	6 21	E	4 43	B	18 31	LIB	0
320	16	Tu.	6 36	D	4 22	A	9 46	30	11 <sup>1</sup> / <sub>2</sub> —	7 23	E	5 16	B	18 46	LIB	1
321	17	W.	6 37	D	4 21	A	9 44	30	12 12	8 24	E	5 54	B	19 01	OPH	2
322	18	Th.	6 38	D	4 20	A	9 42	30	12 <sup>1</sup> / <sub>2</sub> 12 <sup>3</sup> / <sub>4</sub>	9 22	E	6 37	A	19 15	SAG	3
323	19	Fr.	6 40	D	4 19	A	9 39	30	1 1 <sup>1</sup> / <sub>2</sub>	10 14	E	7 25	A	19 29	SAG	4
324	20	Sa.	6 41	D	4 19	A	9 38	29	2 2 <sup>1</sup> / <sub>4</sub>	11 01	E	8 18	B	19 43	SAG	5
325	21	<b>C</b>	6 42	D	4 18	A	9 36	29	2 <sup>3</sup> / <sub>4</sub> 3	11 <sup>A</sup> <sub>M</sub> 42	E	9 15	B	19 57	CAP	6
326	22	M.	6 43	D	4 17	A	9 34	29	3 <sup>1</sup> / <sub>2</sub> 3 <sup>3</sup> / <sub>4</sub>	12 <sup>P</sup> <sub>M</sub> 18	E	10 15	B	20 10	CAP	7
327	23	Tu.	6 45	D	4 17	A	9 32	29	4 <sup>1</sup> / <sub>2</sub> 4 <sup>3</sup> / <sub>4</sub>	12 49	D	11 <sup>P</sup> <sub>M</sub> 17	B	20 23	CAP	8
328	24	W.	6 46	D	4 16	A	9 30	28	5 <sup>1</sup> / <sub>4</sub> 5 <sup>1</sup> / <sub>2</sub>	1 17	D	— —	—	20 34	AQU	9
329	25	Th.	6 47	D	4 15	A	9 28	28	6 <sup>1</sup> / <sub>4</sub> 6 <sup>1</sup> / <sub>2</sub>	1 43	D	12 <sup>A</sup> <sub>M</sub> 20	C	20 46	AQU	10
330	26	Fr.	6 48	E	4 15	A	9 27	28	7 7 <sup>1</sup> / <sub>4</sub>	2 09	D	1 24	D	20 58	PSC	11
331	27	Sa.	6 49	E	4 14	A	9 25	27	7 <sup>3</sup> / <sub>4</sub> 8 <sup>1</sup> / <sub>4</sub>	2 36	C	2 31	D	21 09	CET	12
332	28	<b>C</b>	6 50	E	4 14	A	9 24	27	8 <sup>1</sup> / <sub>2</sub> 9	3 04	B	3 41	E	21 19	PSC	13
333	29	M.	6 51	E	4 14	A	9 23	27	9 <sup>1</sup> / <sub>4</sub> 9 <sup>3</sup> / <sub>4</sub>	3 37	B	4 54	E	21 30	ARI	14
334	30	Tu.	6 52	E	4 13	A	9 21	26	10 <sup>1</sup> / <sub>4</sub> 10 <sup>3</sup> / <sub>4</sub>	4 <sup>P</sup> <sub>M</sub> 16	B	6 <sup>A</sup> <sub>M</sub> 09	E	21s.40	TAU	15





From gold to gray our milk sweet day  
 Of Indian summer fades too soon;  
 But tenderly above the sea  
 Hangs, white and calm, the hunter's moon.  
 — John Greenleaf Whittier

**Farmer's Calendar**

Around the houses people are preparing for winter. They are gathering their forces and seeing to their defenses. As you drive along the roads and watch the houses being made ready according to their owners' differing ideas and situations, you get the impression of a military operation from the days when war was waged by laying siege to fortified villages. The walls and gates had to be made strong, the approaches to them had to be cleared, armaments and supplies had to be laid in, water sources secured, watches organized. The defenders gave much work and ingenuity to the problem of keeping the opposition out and keeping the inhabitants safe within. Something like the same end is in view now, late in the fall, when the houses are girded and made tight against winter.

Going about the neighborhood observing everyone's preparations for winter is not, so far as I know, a seasonal tradition as well established as, say, making the same circuit in June to look at everyone's flower gardens. I prefer it, though. I would rather see what Mr. A. has fixed up to keep the ice from caving in the roof of his shed this winter than I would what Mr. B.'s poppies are doing. Another thing I like to see around this time of year is how people and their houses have reversed the normal seasonal progression of the rest of nature. Our fall is like nature's spring. At the same time that nature is stripping down, contracting, and shutting up, our houses seem to expand and flower forth with foundation banking, snow fences, storm windows, vestibules, wood-piles, and the little wooden pyramids householders place over their planted shrubs.

D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather
1	M.	All Saints • ♂ ♀ ♀ • Full Beaver • {10.9 10.3	Mop
2	Tu.	All Souls • Election Day • Tides {11.2 10.3	up
3	W.	♀ sup. ♂ • A curdly sky Will not leave the earth long dry. • those	
4	Th.	at Great Vt. flood killed 24, 1927 • {10.2 11.4	raindrops.
5	Fr.	Guy Fawkes' Plot • ☾ at ♀ • Tides {9.9 11.1	Climb
6	Sa.	is never forgot. runs 98 m.p.h. winds, Block • {9.6 10.8	a peak
7	C	23 <sup>rd</sup> S. af. P. • F.D.R. won fourth term, 1944 • this	
8	M.	Thunder in November means a fertile year to come. • Tides {9.1 10.0	cool
9	Tu.	Margaret Sanger formed American Birth Control League, 1921 • {9.1 9.7	week.
10	W.	Silence is not always a sign of wisdom, But babbling is ever a folly. • No hoax,	
11	Th.	St. Martin • Veterans Day • Tides {9.6 9.6	wear
12	Fr.	on Elizabeth Cady Stanton b. 1815 • {9.9 9.7	rain cloaks.
13	Sa.	Sadie Hawkins • ♂ ♀ ☾ • ♂ ♀ ☾ • Sleet	
14	C	24 <sup>th</sup> S. af. P. • Frederick Jackson Turner b. 1861 • will	
15	M.	New • Felix Frankfurter b. 1882 • {10.4 9.4	freeze
16	Tu.	If ice in November will bear a duck, Nothing comes after but sleet and muck. • {10.3 -	your feet.
17	W.	Hernando de Soto arrived at site of Mobile, Ala., 1539	
18	Th.	Occult. ♀ ☾ • ☾ at ♀ • George Gallup b. 1901 • Treat	
19	Fr.	♀ sup. ♂ • Occult. ♂ by ☾ • organized, 1874 • this	
20	Sa.	at Peregrine White born aboard Mayflower, 1620 • {8.5 9.3	respice
21	C	25 <sup>th</sup> S. af. P. • Tides {8.3 9.0	with
22	M.	St. Cecilia • Prune grape-vines now. • {8.1 8.8	delight.
23	Tu.	St. Clement • 56" snow, Randolph, N.H., 1943 • {8.0 8.6	Need
24	W.	For Age and Want save while you may; No morning sun lasts a whole day. • a sleigh	
25	Th.	Thanksgiving Day • 57" snow, Pickens, West Virginia, 1950 • this	
26	Fr.	on 1st streetcar railway in U.S., Eq. New York City, 1832. Fare 12½¢. • holiday.	
27	Sa.	♂ ☾ • Liberty Bell welcomed Washington to Philadelphia, 1781 • Clear,	
28	C	Advent • Coconut Grove nightclub fire, Boston, 1942 • means	
29	M.	Louisa May Alcott b. 1832 • Space chimp Enos orbited Earth twice, 1961 • winter's	
30	Tu.	St. Andrew • Full Hunting • Mark Twain b. 1835 • near.	

The man who is a pessimist before 48 knows too much;  
 The man who is an optimist after 48 knows too little.



1982

## DECEMBER, THE TWELFTH MONTH

The winter solstice comes on December 21st at 11:39 P.M., marking the shortest day of the year. The new moon on the 15th means the Geminid meteor shower on the 13th is easily seen. Europe and Russia see the moon's eclipse of the sun on the 15th; the United States sees the eclipse of the moon on the 30th. The total lunar eclipse occurs between 5:58 and 6:59 A.M. in the western sky. During December Mars is low in the west at sunset, Jupiter and Saturn high in the east at dawn. Orion, the most spectacular of the constellations, rides high in the east, the Pleiades straight above, and Cygnus, the swan, low in the west. Observers with a telescope might be able to pick out our neighbor galaxy, the Andromeda Nebula. It lies overhead between Cassiopeia and Pegasus. After the year's shortest day, by the sun, on the 25th, the balance slowly begins to favor daylight.

## ASTRONOMICAL CALCULATIONS

☾ Last Quarter	7th day,	10th hour	54 min.
● New Moon	15th day,	4th hour	19 min.
☽ First Quarter	23rd day,	9th hour	18 min.
○ Full Moon	30th day,	6th hour	34 min.

FOR POINTS OUTSIDE BOSTON SEE KEY LETTER CORRECTIONS—PAGES 70-74

Day of Year	Day of Month	Day of Week	☼ Rises h. m.	Key	☽ Sets h. m.	Key	Length of Days h. m.	Sun Past m.	Full Sea Boston A.M. P.M.	☽ Rises h. m.	Key	☽ Sets h. m.	Key	Declination of sun °	☽ Place	☽ Age
335	1	W.	6 54	E	4 13	A	9 19	26	11 11½	5 <sup>P</sup> <sub>M</sub> 03	B	7 <sup>A</sup> <sub>M</sub> 25	E	21s.49	TAU	16
336	2	Th.	6 55	E	4 13	A	9 18	26	11¾	—	A	8 38	E	21 58	TAU	17
337	3	Fr.	6 56	E	4 12	A	9 16	25	12½	12½	B	9 43	E	22 07	GEM	18
338	4	Sa.	6 57	E	4 12	A	9 15	25	1¼	1¼	B	10 39	E	22 15	CAN	19
339	5	<b>C</b>	6 58	E	4 12	A	9 14	24	2¼	2¼	B	11 <sup>A</sup> <sub>M</sub> 24	E	22 23	CAN	20
340	6	M.	6 59	E	4 12	A	9 13	24	3¼	3¼	C	12 <sup>P</sup> <sub>M</sub> 01	D	22 30	LEO	21
341	7	Tu.	7 00	E	4 12	A	9 12	24	4¼	4¼	C	12 33	D	22 37	LEO	22
342	8	W.	7 01	E	4 12	A	9 11	23	5¼	5¼	—	1 01	D	22 43	VIR	23
343	9	Th.	7 01	E	4 12	A	9 11	23	6¼	6¼	D	1 26	C	22 50	VIR	24
344	10	Fr.	7 02	E	4 12	A	9 10	22	7¼	7¼	D	1 51	C	22 55	VIR	25
345	11	Sa.	7 03	E	4 12	A	9 09	22	8	8¼	E	2 17	B	23 00	VIR	26
346	12	<b>C</b>	7 04	E	4 12	A	9 08	21	9	9¼	E	2 46	B	23 05	LIB	27
347	13	M.	7 05	E	4 12	A	9 07	21	9¾	10¼	E	3 16	B	23 09	LIB	28
348	14	Tu.	7 06	E	4 12	A	9 06	20	10¼	11	E	3 52	B	23 13	OPH	29
349	15	W.	7 06	E	4 12	A	9 06	20	11 11½	7 14	E	4 33	B	23 16	OPH	0
350	16	Th.	7 07	E	4 13	A	9 06	19	11¾	—	E	5 19	B	23 19	SAG	1
351	17	Fr.	7 08	E	4 13	A	9 05	19	12¼	12¼	E	6 11	A	23 21	SAG	2
352	18	Sa.	7 08	E	4 13	A	9 05	18	1	1	E	7 07	B	23 23	SAG	3
353	19	<b>C</b>	7 09	E	4 14	A	9 05	18	1½	1¾	E	8 05	B	23 24	CAP	4
354	20	M.	7 10	E	4 15	A	9 05	17	2¼	2½	E	9 06	B	23 25	CAP	5
355	21	Tu.	7 10	E	4 15	A	9 05	17	3	3¼	D	10 07	C	23 26	AQU	6
356	22	W.	7 11	E	4 16	A	9 05	17	3¾	4	D	11 <sup>P</sup> <sub>M</sub> 10	C	23 26	AQU	7
357	23	Th.	7 11	E	4 16	A	9 05	16	4¼	4¾	D	—	—	23 26	PSC	8
358	24	Fr.	7 11	E	4 16	A	9 05	16	5¼	5¾	C	12 <sup>A</sup> <sub>M</sub> 13	D	23 25	CET	9
359	25	Sa.	7 12	E	4 17	A	9 05	15	6¼	6¾	C	1 19	D	23 23	PSC	10
360	26	<b>C</b>	7 12	E	4 18	A	9 06	15	7¼	7½	B	2 28	E	23 21	CET	11
361	27	M.	7 13	E	4 19	A	9 06	14	8	8¼	B	3 40	E	23 19	ARI	12
362	28	Tu.	7 13	E	4 19	A	9 06	14	8¾	9¼	B	4 55	E	23 16	TAU	13
363	29	W.	7 13	E	4 20	A	9 07	13	9¾	10¼	B	6 10	E	23 13	TAU	14
364	30	Th.	7 13	E	4 20	A	9 07	13	10¼	11¼	B	7 21	E	23 09	GEM	15
365	31	Fr.	7 13	E	4 21	A	9 08	12	11½	—	B	8 <sup>A</sup> <sub>M</sub> 23	E	23s.05	GEM	16



Now winter nights enlarge  
The number of their hours,  
And clouds their storms discharge  
Upon the airy towers.

— Thomas Campion

**Farmer's Calendar**

In years when snow comes late, December furnishes a fifth season not a part of other years. I have read some writers in New England who call this interval "locking time." It is a distinctive time, having its own weather, colors, and themes, as much as the commoner, longer seasons have. A bare December's weather is hard cold, its colors gray and green, and its theme is solitude. Every bird, animal, and insect that is going to migrate, hibernate, or die off is gone, and the population of the land is reduced. Even the people have gone, many of them, and it may seem that nobody is left to keep company with except the deer and chickadees.

The leaves are gone. They no longer show their fall colors, even lying on the ground. In the woods the color in this season comes only from the trunks and branches of the hardwood trees, which are every shade of gray, and from the conifers, which are a dark green nothing like the green of spring. I have forgotten the birches, whose trunks are white and lie on the dark hillsides like silver threads on a woolen blanket.

A bare December is a cold season. It has none of the fading heat of autumn. The skies are seldom clear and blue as they are in the real autumn. It's a winter sky, gray and full of changing clouds. The earth is as hard and cold as an iron spike. The back roads are full of dust because the ground is frozen and therefore dry. It's curious to see a cloud of dust following a car in December, but this dust isn't like summer dust. This dust is cold. Every so often the sky will fill with snow, but the snow will stop soon and leave the ground bare again. And then one day the snow won't stop.

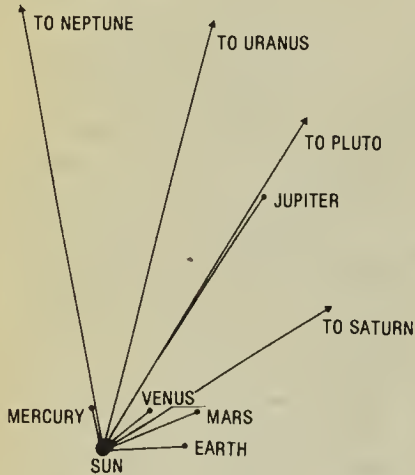
D.M.	D.W.	Dates, Feasts, Fasts, Aspects, Tide Heights	Weather ↓
1	W.	<i>The thinner the ice, the more anxious is everyone to see whether it will bear.</i>	{11.6 10.2
2	Th.	Model A introduced by Ford, 1927	<i>Balmy</i>
3	Fr.	Beggar's Opera opened in New York City, 1750	<i>and mild</i>
4	Sa.	Lillian Russell Chicago police raided b. 1861	{10.1 11.7
5	C	2 <sup>nd</sup> S. Advent	<i>turns to bleak</i>
6	M.	St. Nicholas Americans took 1st legal drink in 13 years, 1933	{9.6 10.4
7	Tu.	Teach your child to hold his tongue; he'll learn fast enough to speak.	<i>and wild.</i>
8	W.	Concept. of V.M.	{9.4 9.5
9	Th.	61° Boston, Mass., at 1:00 a.m., 1980	<i>Get out</i>
10	Fr.	Woodrow Wilson received Nobel Peace Prize, 1920	{9.6 9.0
11	Sa.	27° San Francisco, Cal., 1932	<i>snow fences</i>
12	C	3 <sup>rd</sup> S. Advent	{9.9 8.9
13	M.	St. Lucy	<i>the blast</i>
14	Tu.	Gen. James H. Doolittle b. 1896	<i>commences.</i>
15	W.	Ember Day • New	<i>Fire up</i>
16	Th.	Boston Tea Party, 1773	<i>the</i>
17	Fr.	Ember Day • at apo.	{8.7 8.8
18	Sa.	Ember Day • ☽Ψ☉	<i>stove, please,</i>
19	C	4 <sup>th</sup> S. Advent	{8.5 9.4
20	M.	Halcyon days of calm seas.	<i>then cut down</i>
21	Tu.	St. Thomas Pilgrims landed, Plymouth Rock, 1620	<i>your</i>
22	W.	A bachelor gets tangled up with a lot of women in order to avoid getting tied up to one.	<i>Christmas</i>
23	Th.	Cornelius McGillicuddy (Connie Mack) b. 1862	<i>trees.</i>
24	Fr.	If windy on Christmas Day, trees will bear much fruit.	{8.8 8.6
25	Sa.	Christmas Sir Isaac Newton b. 1642	<i>No more</i>
26	C	1 <sup>st</sup> S. af. Christmas	<i>St. Stephen</i>
27	M.	St. John Showboat opened on Broadway, 1927	{10.2 9.2
28	Tu.	Holy Innocents' Day Woodrow Wilson b. 1856	<i>to tell —</i>
29	W.	Battle of Wounded Knee, S.D., 1890	{11.3 9.8
30	Th.	Full Cold Eclipse 7 a.m. • ♀E. 20°	<i>a snowy</i>
31	Fr.	St. Sylvester With bounteous cheer, Conclude the year.	<i>farewell!</i>



## THE GREAT PLANET LINEUP OF 1982

by George Greenstein

Let's not get too alarmed, despite all the predictions of earthquakes, floods, wars, and other disasters resulting from the fact that on March 10, 1982, all nine planets will come as close to lying on a straight line as they ever will. The last time eight planets lined up was in 1803, the year Ohio was granted statehood and a patent was awarded for "corsets of improved construction."



□ THE YEAR 1982 WILL BE AN unusual one astronomically speaking, for on March 10 all nine planets of the solar system will come as close to lying on a straight line as they ever will. For the past several years now this special configuration has been steadily developing as the outermost planets — Jupiter, Saturn, Uranus, Neptune, and Pluto — have gradually moved into position, and during the winter and spring of 1982 the inner planets will join the pattern.

This planetary alignment is an exceedingly rare event and none of us will live to see it repeated. It has not occurred for five full centuries, and will not recur for another five. If tiny Pluto is excluded from the reckoning, then such alignments recur more often but still quite rarely: it last occurred in 1803, 179 years ago, and it is not due again until A.D. 2161.

March 10 is not the only date to keep in mind. In fact all of 1982 will

be of interest to planet-watchers, because at different times throughout the year various planets will closely approach each other. During the first half of 1982 Mars, Jupiter, and Saturn will be nearly together, rising and setting within a few hours of each other. In the fall Mars will move out of this pattern but Venus will join it. These planets, of course, are among the brightest objects in the sky and they should make a lovely sight.

It is wrong, however, to call this pattern a lineup, for at no time will the planets ever lie directly on a straight line. On March 10 the four brightest planets — Venus, Mars, Jupiter, and Saturn — will be a full 50 degrees of arc away from the line joining the Earth to the Sun. If we include all nine planets it turns out that they will be spread out over nearly 100 degrees of arc. But as we said, it's as close to a lineup as they can come.

This planetary alignment, though far from perfect, is attracting great attention throughout the world. It is of particular interest, of course, to astrologers, and it has served as the basis of numerous astrological predictions. The year 1982 is forecast as a year of disasters: of earthquakes and volcanoes, of storms and floods, of wars and bad luck.

Is there any scientific reason for concern? In their recent book *The Jupiter Effect*, scientists John Gribbin and Stephen Plagemann have argued that through their gravitational in-



fluences the planets of the solar system might be able to trigger devastating earthquakes. We are all familiar with the steady rise and fall of the tides, and we know that they are caused by gravity from the Moon and the Sun. In a similar way each planet of the solar system exerts its force of gravity on us. We are all swaying back and forth, microscopically and imperceptibly urged by the Sun, the Moon, and the worlds of the solar system in which we live.

I believe that even during the coming planetary alignment this combined gravitational attraction is too weak to have a direct influence upon the Earth, and it will not be able to trigger serious earthquakes. In the first place, since the planetary configuration will never be one in which the planets perfectly align, their gravitational influences will never act precisely together. And in the second place, the planets of the solar system are simply too far away from us to have any appreciable effect. The forces they exert upon us are less than one ten-thousandth of the forces from the Sun and Moon.

In *The Jupiter Effect* Gribbin and Plagemann are actually suggesting something different and far more complicated: they propose that the planets might possibly be able to influence the *sunspots*, and these spots in turn might influence the rotation of the Earth and the occurrence of earthquakes. Most scientists, however, are not convinced by their theories.

Furthermore, the actual facts of history do not reveal any of the disasters that either these scientists or the astrologers predict. After all, the coming lineup is nothing new — it has occurred over and over again throughout history. The last time such a planetary alignment occurred was in the year 1803, and that year was hardly a time of unusual disasters. The *London Times* lists only two minor earthquakes in Jamaica throughout that year — and it does not report a single

flood or volcano. As for storms, perhaps the worst reported are a “severe thunderstorm over Gibraltar” and a “storm and hurricane at Canterbury.” The year 1803 did witness a terrible fire in Bombay in which 1,000 homes were destroyed, but given the normal course of events this can hardly be regarded as an unnatural disaster. As for wars, the year 1803 saw the Second Maratha War of the British against the Sindhia of Gwalior, and the resumption of hostilities between England and France. On the other hand, it also saw the cessation of hostilities between France and Russia as well as between France and Turkey. In the United States perhaps the biggest items in the news that year were the granting of statehood to Ohio and the Louisiana Purchase. And as far as daily life is concerned we can take note of two patents awarded in that year: one went to R. Wilson “for an apparatus for stopping an ungovernable horse,” and another to James Gayleard “for corsets of an improved construction.”

Actually the lineup has made possible a wonderful and marvelous triumph — the Voyager missions to the outer reaches of the solar system. These missions would not have been possible in an earlier age, for their success has rested upon just this lucky and unusual alignment of the planets. This is because we are not capable of building rocket engines sufficiently powerful to send a spacecraft to the outer planets. Instead we have been forced to rely on each planet to urge Voyager on to its next destination. In 1979 Jupiter swung Voyager on to Saturn, and gave it a boost in the right direction; two years later it was Saturn that in turn directed Voyager on to Uranus. Had these planets not been so happily aligned none of this would have been possible, and we would have been deprived of the glimpses Voyager has provided us of these beautiful and spectacular worlds. ■ ■

★ **THE SIX-DAY DISAPPEARANCE OF  
THE PRESIDENT  
OF THE  
UNITED STATES** ★

**It happened just ninety  
years ago. For almost a week,  
the entire nation lost  
President Grover Cleveland.  
Here's what happened ...**

**by H. N. Ferguson** ★

□ **THE PORTLY, CIGAR-CHEWING** Grover Cleveland had been reelected in 1892, the only president to leave the White House and return for a second term four years later.

Immediately after taking office he had to cope with a grave financial crisis. The nation's troubles stemmed from the bitter battle of bimetallism then being waged — a fight between men who believed, like Cleveland, in staying on the gold standard, and those, like Vice-President Adlai E. Stevenson, who were in favor of permitting an unlimited amount of silver to be coined. On June 30, as Congress recessed, the President called for a special session on August 7, hoping to save the nation from a complete collapse.

Just a few days earlier, on June 18, Cleveland had asked Dr. Robert M. O'Reilly, the White House physician,

to have a look at a "rough place" in the roof of his mouth. O'Reilly saw an angrily inflamed area about the size of a quarter. A tissue sample was immediately sent to the country's top pathologist, Dr. William H. Welch at Johns Hopkins. When the word came from Dr. Welch it was, not surprisingly, "malignant."

Cleveland's instant reaction was to maintain complete secrecy. The already shaken nation must not know. Arrangements were made for surgery on July 1 to remove the malignancy, under conditions as cleverly contrived as they were critical.

The President took the train to New York with Dr. Joseph D. Bryant, a close friend, and, unnoticed in the dusk, went from the station to the Battery in a common carriage. Lying offshore was Commodore Elias G. Benedict's yacht *Oneida*. The Presi-

dent boarded her unseen and unsuspected.

Shortly before noon the following day he was strapped into a straight-back chair that was lashed to the mast. Just before the surgical procedure began, a tense Dr. Bryant told the skipper of the yacht, "If you hit a rock, hit hard, and go straight to the bottom."

Dr. Ferdinand Hasbrouck, a young dentist with knowledge of the new anesthetic, "laughing gas," had to extract two bicuspids to make room for the surgeon's work. Dr. Bryant went to work with his white-hot electric knife. Working with desperate speed, for fear the President might die under the anesthetic, he completed the surgery in 31 minutes, packed the wound, and had the President settled in bed.

The patient improved rapidly, and on July 5 the *Oneida* tied up at the wharf of his summer home, "Gray Gables," on Buzzards Bay in Massachusetts. Shaky but unaided, the President made a cautious descent down the gangplank and into the arms of the anxiously waiting Mrs. Cleveland.

The press, who had been waiting for six days with no word as to the President's strange disappearance, received a simple explanation — the President had merely been away a few days receiving treatment for two ulcerated teeth.

Later Cleveland was fitted with a partial denture that filled out his facial contours. The large cavity in the roof of his mouth was closed with a rubber plug. Miraculously, his speech was not impaired.

On August 7 the President met with Congress for a showdown fight. His message could be summed up in these words: "The government had no right to injure the people by financial experiments opposed to the policy and practice of other civilized states." The battle was finally won. On August 28 the House voted 239 to 108 in Cleveland's favor.

Cleveland lived another 15 years after his ordeal, dying in 1908 not of cancer, but of a gastrointestinal ailment complicated by heart and kidney disease. He died without ever revealing the real reason for his six-day disappearance. His last words were: "I have tried so hard to do right." ■ ■

## WIND/BAROMETER TABLE

Barometer (Reduced to Sea Level)	Wind Direction	Character of Weather Indicated
30.00 to 30.20, and steady	westerly	Fair, with slight changes in temperature, for one to two days.
30.00 to 30.20, and rising rapidly	westerly	Fair, followed within two days by warmer and rain.
30.00 to 30.20, and falling rapidly	south to east	Warmer, and rain within 24 hours.
30.20, or above, and falling rapidly	south to east	Warmer, and rain within 36 hours.
30.20, or above, and falling rapidly	west to north	Cold and clear, quickly followed by warmer and rain.
30.20, or above, and steady	variable	No early change.
30.00, or below, and falling slowly	south to east	Rain within 18 hours that will continue a day or two.
30.00, or below, and falling rapidly	southeast to northeast	Rain, with high wind, followed within two days by clearing, colder.
30.00, or below, and rising	south to west	Clearing and colder within 12 hours.
29.80, or below, and falling rapidly	southeast to northeast	Severe storm of wind and rain imminent. In winter, snow or cold wave within 24 hours.
29.80, or below, and falling rapidly	east to north	Severe northeast gales and heavy rain or snow, followed in winter by cold wave.
29.80, or below, and rising rapidly	going to west	Clearing and colder.



## TIME CORRECTION TABLES

The times of sunrise, sunset, moonrise, moonset, and the rising and setting of the planets are given for Boston only on pages 38-64 and 32-33. Use the Key Letter shown there and this table to find the number of minutes that should be added to or subtracted from Boston time to give the correct time for your city. The answer will not be as precise as that for Boston, but will be within approximately 5 minutes. If your city is not listed, find the city closest to you in both latitude and longitude and use those figures. Canadian cities appear at the end of the list. For a more complete explanation see page 26.

**Time Zone Code:** -1—Atlantic Std.; 0—Eastern Std.; 1—Central Std.; 2—Mountain Std.; 3—Pacific Std.; 4—Alaska-Hawaii Std.; 5—Bering Std.

City	North Latitude	West Longitude	Time Zone Code	Key Letters				
				A min.	B min.	C min.	D min.	E min.
Aberdeen, SD	45 28	98 29	1	+38	+46	+50	+54	+62
Akron, OH	41 5	81 31	0	+46	+43	+42	+40	+37
Albany, NY	42 39	73 45	0	+10	+10	+11	+11	+12
Albert Lea, MN	43 39	93 22	1	+25	+28	+29	+31	+34
Albuquerque, NM	35 5	106 39	2	+43	+30	+22	+15	+ 1
Alexandria, LA	31 18	92 27	1	+56	+36	+26	+14	- 5
Allentown- Bethlehem, PA	40 36	75 28	0	+23	+19	+17	+15	+11
Amarillo, TX	35 12	101 50	1	+84	+70	+63	+56	+42
Ardmore, OK	34 10	97 8	1	+67	+53	+44	+36	+21
Asheville, NC	35 36	82 33	0	+66	+53	+46	+39	+26
Atlanta, GA	33 45	84 24	0	+78	+62	+53	+44	+29
Atlantic City, NJ	39 22	74 26	0	+24	+17	+13	+10	+ 3
Augusta, GA	33 28	81 58	0	+69	+52	+44	+35	+17
Augusta, ME	44 19	69 46	0	-12	- 7	- 5	- 3	+ 2
Austin, TX	30 16	97 45	1	+79	+58	+47	+35	+14
Bakersfield, CA	35 23	119 1	3	+32	+19	+12	+ 4	- 8
Baltimore, MD	39 17	76 37	0	+32	+26	+22	+19	+12
Bangor, ME	44 48	68 46	0	-18	-12	- 6	- 6	0
Barstow, CA	34 54	117 1	3	+25	+12	+ 4	- 4	-18
Baton Rouge, LA	30 27	91 11	1	+53	+32	+20	+ 9	-12
Beaumont, TX	30 5	94 6	1	+65	+44	+32	+20	- 1
Bellingham, WA	48 45	122 29	3	+ 4	+19	+26	+32	+48
Bemidji, MN	47 28	94 53	1	+15	+29	+35	+42	+56
Berlin, NH	44 28	71 11	0	- 8	- 3	0	+ 2	+ 8
Billings, MT	45 47	108 30	2	+16	+25	+29	+33	+43
Biloxi, MS	30 24	88 53	1	+44	+23	+12	0	-20
Binghamton, NY	42 6	75 55	0	+20	+20	+19	+19	+18
Birmingham, AL	33 31	86 49	1	+28	+12	+ 3	- 6	-22
Bismarck, ND	46 48	100 47	1	+42	+53	+59	+64	+77
Boise, ID	43 37	116 12	2	+56	+59	+61	+62	+65
Brattleboro, VT	42 51	72 34	0	+ 4	+ 5	+ 6	+ 7	+ 8
Bridgeport, CT	41 11	73 11	0	+13	+10	+ 9	+ 7	+ 4
Brockton, MA	42 5	71 1	0	+ 1	0	0	- 1	- 1
Buffalo, NY	42 53	78 52	0	+26	+29	+31	+33	+37
Burlington, VT	44 29	73 13	0	+ 1	+ 6	+ 9	+11	+17
Butte, MT	46 1	112 32	2	+32	+41	+46	+50	+60
Cairo, IL	37 0	89 11	1	+30	+18	+12	+ 7	- 5
Camden, NJ	39 57	75 7	0	+24	+19	+16	+13	+ 8
Canton, OH	40 48	81 23	0	+47	+43	+41	+39	+36
Cape May, NJ	38 56	74 56	0	+27	+19	+15	+12	+ 4
Carson City-Reno, NV	39 10	119 46	3	+25	+18	+15	+11	+ 5
Casper, WY	42 51	106 19	2	+20	+21	+22	+22	+24
Chadron, NE	42 50	103 0	2	+66	+67	+68	+68	+70
Charleston, SC	32 47	79 56	0	+62	+45	+35	+26	+ 9
Charleston, WV	38 21	81 38	0	+54	+46	+42	+38	+30
Charlotte, NC	35 14	80 51	0	+60	+46	+39	+32	+18
Charlottesville, VA	38 2	78 30	0	+43	+34	+30	+25	+16
Chattanooga, TN	35 3	85 19	0	+78	+65	+57	+49	+36
Cheboygan, MI	45 39	84 29	0	+41	+50	+54	+57	+66
Cheyenne, WY	41 8	104 49	2	+17	+14	+13	+11	+ 9

City	North Latitude		West Longitude		Time Zone Code	Key Letters				
	A	B	C	D		E	min.	min.	min.	min.
Chicago-Oak Park, IL.....	41	52	87	38	1	+ 7	+ 6	+ 5	+ 5	+ 4
Cincinnati-Hamilton, OH ..	39	6	84	31	0	+64	+57	+54	+50	+43
Cleveland-Lakewood, OH ..	41	30	81	42	0	+46	+43	+42	+42	+40
Columbia, SC.....	34	0	81	2	0	+64	+48	+40	+31	+16
Corpus Christi, TX.....	27	48	97	24	1	+83	+59	+45	+31	+ 7
Craig, CO.....	40	31	107	33	2	+32	+28	+26	+24	+19
Dallas-Fort Worth, TX.....	32	47	96	48	1	+72	+55	+45	+35	+18
Danville, IL.....	40	8	87	37	1	+13	+ 8	+ 5	+ 3	- 2
Danville, VA.....	36	36	79	23	0	+49	+38	+32	+26	+15
Davenport, IA.....	41	32	90	35	1	+21	+19	+18	+17	+15
Decatur, AL.....	34	36	86	59	1	+26	+12	+ 4	- 4	-19
Decatur, IL.....	39	51	88	57	1	+20	+14	+12	+ 9	+ 3
Denver-Boulder, CO.....	40	0	104	59	2	+25	+19	+16	+13	+ 8
Des Moines, IA.....	41	35	93	37	1	+33	+31	+30	+29	+27
Detroit-Dearborn, MI.....	42	20	83	3	0	+48	+48	+48	+48	+48
Dubuque, IA.....	42	30	90	41	1	+18	+18	+18	+19	+19
Duluth, MN.....	46	47	92	6	1	+ 7	+19	+24	+30	+42
Durham, NC.....	36	0	78	55	0	+50	+38	+31	+25	+13
Eastport, ME.....	44	54	67	0	0	-26	-19	-16	-13	- 7
Eau Claire, WI.....	44	49	91	30	1	+13	+19	+22	+25	+31
El Paso, TX.....	31	45	106	29	2	+51	+32	+22	+11	- 8
Elko, NV.....	40	50	115	46	3	+ 4	+ 1	- 1	- 3	- 7
Ellsworth, ME.....	44	33	68	25	0	-19	-13	- 6	- 3	- 2
Erie, PA.....	42	7	80	5	0	+37	+36	+36	+36	+35
Eugene, OR.....	44	3	123	6	3	+22	+26	+28	+30	+34
Fall River-New Bedford, MA	41	42	71	9	0	+ 3	+ 1	0	0	- 2
Fargo, ND.....	46	53	96	47	1	+25	+37	+43	+49	+61
Flagstaff, AZ.....	35	12	111	39	2	+62	+50	+42	+35	+22
Flint, MI.....	43	1	83	41	0	+48	+50	+51	+51	+53
Fort Scott, KS.....	37	50	94	42	1	+49	+39	+34	+30	+20
Fort Smith, AR.....	35	23	94	25	1	+54	+41	+33	+26	+13
Fort Wayne, IN.....	41	4	85	9	0	+61	+58	+56	+55	+52
Fresno, CA.....	36	44	119	47	3	+33	+21	+15	+ 9	- 3
Gallup, NM.....	35	32	108	45	2	+50	+38	+31	+24	+11
Galveston, TX.....	29	18	94	48	1	+70	+48	+35	+22	0
Gary, IN.....	41	36	87	20	1	+ 7	+ 6	+ 5	+ 4	+ 2
Glasgow, MT.....	48	12	106	38	2	0	+15	+22	+30	+46
Grand Forks, ND.....	47	55	97	3	1	+22	+37	+44	+51	+67
Grand Island, NE.....	40	55	98	21	1	+54	+51	+49	+48	+44
Grand Junction, CO.....	39	4	108	33	2	+41	+33	+30	+26	+19
Great Falls, MT.....	47	30	111	17	2	+21	+34	+41	+47	+61
Green Bay, WI.....	44	31	88	0	1	0	+ 5	+ 8	+10	+16
Greensboro, NC.....	36	4	79	47	0	+53	+41	+35	+28	+16
Hagerstown, MD.....	39	39	77	43	0	+36	+30	+27	+24	+17
Harrisburg, PA.....	40	16	76	53	0	+30	+26	+23	+21	+16
Hartford-New Britain, CT ..	41	46	72	41	0	+ 9	+ 7	+ 7	+ 6	+ 5
Helena, MT.....	46	36	112	2	2	+27	+39	+44	+49	+61
Houston, TX.....	29	45	95	22	1	+71	+49	+37	+25	+ 3
Indianapolis, IN.....	39	46	86	10	0	+69	+63	+60	+57	+52
Ironwood, MI.....	46	27	90	9	1	0	+11	+16	+21	+32
Jackson, MI.....	42	15	84	24	0	+54	+53	+53	+53	+53
Jackson, MS.....	32	18	90	11	1	+44	+26	+16	+ 6	-11
Jacksonville, FL.....	30	20	81	40	0	+75	+54	+42	+30	-10
Jefferson City, MO.....	38	34	92	10	1	+37	+29	+25	+20	+12
Joplin, MO.....	37	6	94	31	1	+51	+39	+34	+28	+17
Kalamazoo, MI.....	42	17	85	35	0	+58	+58	+58	+58	+58
Kanab, UT.....	37	3	112	32	2	+63	+52	+46	+40	+29
Keene, NH.....	42	56	72	17	0	+ 2	+ 4	+ 5	+ 6	+ 7
Knoxville, TN.....	35	58	83	55	0	+70	+58	+51	+45	+33
LaCrosse, WI.....	43	48	91	15	1	-15	-19	+21	+22	+26
Lake Charles, LA.....	30	14	93	13	1	+61	+40	+28	+17	- 4
Lancaster, PA.....	40	2	76	18	0	+29	+24	+21	+18	+13
Lansing, MI.....	42	44	84	33	0	+53	+54	+54	+54	+55
Las Cruces, NM.....	32	19	106	47	2	+51	+34	+23	+12	- 5
Las Vegas, NV.....	36	10	115	9	3	+16	+ 3	- 4	-10	-24
Lawrence-Lowell, MA.....	42	42	71	10	0	- 1	0	+ 1	+ 1	+ 2
Lewiston, ID.....	46	25	117	1	3	-12	- 1	+ 4	+ 9	+20

City	North Latitude		West Longitude		Time Zone Code	Key Letters				
	°	'	°	'		A min.	B min.	C min.	D min.	E min.
Lexington-Frankfort, KY ..	38	3	84	30	0	+67	+59	+54	+50	+41
Liberal, KS .....	37	3	100	55	1	+77	+65	+60	+54	+42
Lincoln, NE .....	40	49	96	41	1	+48	+44	+43	+41	+37
Little Rock, AR .....	34	45	92	17	1	+47	+33	+25	+17	+ 3
Los Angeles incl. Pasadena and Santa Monica, CA...	34	3	118	14	3	+32	+17	+ 9	0	-14
Louisville, KY .....	38	15	85	46	0	+71	+63	+59	+54	+46
Macon, GA .....	32	50	83	38	0	+77	+62	+50	+39	+24
Madison, WI .....	43	4	89	23	1	+11	+12	+13	+14	+16
Manchester-Concord, NH..	42	59	71	28	0	- 1	+ 1	+ 2	+ 3	+ 4
Memphis, TN .....	35	9	90	3	1	+37	+23	+16	+ 8	- 5
Meridian, MS .....	32	22	88	42	1	+38	+20	+11	0	-17
Miami, FL .....	25	47	80	12	0	+79	+52	+37	+21	- 6
Miles City, MT .....	46	25	105	51	2	+ 3	+14	+19	+24	+35
Milwaukee, WI .....	43	2	87	54	1	+ 5	+ 7	+ 7	+ 8	+10
Minneapolis-St. Paul, MN..	44	59	93	16	1	+19	+26	+29	+32	+39
Minot, ND .....	48	14	101	18	1	+37	+54	+61	+68	+85
Moab, UT .....	38	35	109	33	2	+47	+38	+34	+30	+21
Mobile, AL .....	30	42	88	3	1	+39	+19	+ 8	- 4	-24
Monroe, LA .....	32	30	92	7	1	+51	+34	+24	+14	- 3
Montgomery, AL .....	32	23	86	19	1	+29	+11	+ 1	- 9	-26
Muncie, IN .....	40	12	85	23	0	+65	+60	+57	+55	+50
Murdo, SD .....	43	53	100	43	1	+53	+57	+59	+60	+65
Nashville, TN .....	36	10	86	47	1	+21	+ 9	+ 3	- 4	-15
New Haven, CT .....	41	18	72	56	0	+11	+ 9	+ 7	+ 6	+ 4
New London, CT .....	41	22	72	6	0	+ 8	+ 6	+ 4	+ 3	+ 1
New Orleans, LA .....	29	57	90	4	1	+49	+28	+16	+ 4	-17
New York, NY .....	40	45	74	0	0	+17	+13	+12	+10	+ 6
Newark-Irvington-East Orange, NJ .....	40	44	74	10	0	+18	+14	+12	+11	+ 7
Norfolk, VA .....	36	51	76	17	0	+37	+27	+21	+15	+ 5
North Platte, NE .....	41	8	100	46	1	+63	+60	+59	+57	+55
Norwalk-Stamford, CT .....	41	7	73	22	0	+14	+11	+10	+ 8	+ 5
Oakley, KS .....	39	8	100	51	1	+70	+63	+59	+58	+53
Ogden, UT .....	41	13	111	58	2	+48	+45	+44	+42	+40
Ogdensburg, NY .....	44	42	75	30	0	+ 8	+15	+18	+21	+27
Oklahoma City, OK .....	35	28	97	31	1	+66	+53	+46	+38	+26
Omaha, NE .....	41	16	95	56	1	+43	+41	+40	+38	+36
Ortonville, MN .....	45	19	96	27	1	+30	+38	+41	+45	+53
Oshkosh, WI .....	44	1	88	33	1	+ 2	+ 6	+ 8	+10	+15
Parkersburg, WV .....	39	16	81	34	0	+52	+45	+42	+38	+32
Paterson, NJ .....	40	55	74	10	0	+17	+14	+12	+11	+ 7
Pendleton, OR .....	45	40	118	47	3	- 2	+ 7	+11	+15	+24
Pensacola, FL .....	30	25	87	13	1	+ 7	+17	+ 5	- 7	-27
Peoria, IL .....	40	42	89	36	1	+20	+16	+14	+12	+ 7
Philadelphia-Chester, PA ..	39	57	75	9	0	+25	+20	+17	+14	+ 9
Phoenix, AZ .....	33	27	112	4	2	+69	+53	+44	+35	+19
Pierre, SD .....	44	22	100	21	1	+50	+55	+57	+59	+65
Pittsburgh-McKeesport, PA .....	40	26	80	0	0	+42	+38	+35	+33	+28
Pittsfield, MA .....	42	27	73	15	0	+ 8	+ 9	+ 9	+ 9	+ 9
Pocatello, ID .....	42	52	112	27	2	+44	+45	+45	+46	+47
Poplar Bluff, MO .....	36	46	90	24	1	+35	+23	+17	+11	- 1
Portland, ME .....	43	40	70	15	0	- 8	- 5	- 3	- 2	+ 2
Portland, OR .....	45	31	122	41	3	+14	+23	+26	+30	+39
Portsmouth, NH .....	43	5	70	45	0	- 4	- 2	- 1	0	+ 1
Presque Isle, ME .....	46	41	68	1	0	-29	-17	-13	- 7	+ 4
Providence, RI .....	41	50	71	25	0	+ 3	+ 3	+ 1	+ 1	0
Pueblo, CO .....	38	16	104	37	2	+28	+18	+14	+10	+ 1
Raleigh, NC .....	35	47	78	38	0	+50	+37	+30	+23	+11
Rapid City, SD .....	44	5	103	14	2	+62	+67	+69	+71	+75
Reading, PA .....	40	20	75	56	0	+26	+22	+19	+17	+12
Redding, CA .....	40	35	122	24	3	+31	+27	+25	+23	+19
Richmond, VA .....	37	32	77	26	0	+40	+31	+25	+20	+11
Roanoke, VA .....	37	16	79	57	0	+51	+41	+35	+30	+20
Roswell, NM .....	33	24	104	32	2	+39	+23	+14	+ 5	+11
Rutland, VT .....	43	37	72	58	0	+ 3	+ 6	+ 8	+ 9	+12



City	North Latitude	West Longitude	Time Zone Code	Key Letters				
				A min.	B min.	C min.	D min.	E min.
Sacramento, CA	38 35	121 30	3	+34	+26	+22	+18	+9
Salina, KS	38 50	97 37	1	+58	+50	+46	+42	+34
Salisbury, MD	38 22	75 36	0	+31	+22	+18	+14	+5
Salt Lake City, UT	40 45	111 53	2	+49	+45	+43	+41	+38
San Diego, CA	32 43	117 9	3	+31	+14	+4	-5	-23
San Francisco incl. Oakland and San Jose, CA	37 47	122 25	3	+40	+29	+25	+20	+9
Santa Fe, NM	35 41	105 56	2	+39	+26	+19	+12	0
Savannah, GA	32 5	81 6	0	+68	+59	+40	+30	+12
Scranton-Wilkes Barre, PA	41 25	75 40	0	+23	+20	+19	+18	+15
Seattle-Tacoma-Olympia, WA	47 37	122 20	3	+6	+20	+26	+32	+46
Sheridan, WY	44 48	106 58	2	+14	+20	+23	+26	+33
Shreveport, LA	32 31	93 45	1	+58	+41	+31	+21	+3
Sioux Falls, SD	43 33	96 44	1	+38	+41	+43	+44	+47
South Bend, IN	41 41	86 15	0	+63	+62	+61	+60	+58
Spartanburg, SC	34 56	81 57	0	+65	+51	+43	+36	+22
Spokane, WA	47 40	117 24	3	-16	-1	+5	+12	+27
Springfield, IL	39 48	89 39	1	+23	+17	+14	+12	+6
Springfield-Holyoke, MA	42 6	72 36	0	+7	+6	+6	+6	+5
Springfield, MO	37 13	93 18	1	+46	+34	+29	+23	+12
St. Johnsbury, VT	44 25	72 1	0	-4	+1	+4	+6	+12
St. Joseph, MO	39 46	94 50	1	+44	+38	+35	+32	+26
St. Louis, MO	38 37	90 12	1	+29	+21	+17	+12	+4
St. Petersburg, FL	27 46	82 39	0	+84	+60	+46	+32	+8
Syracuse, NY	43 3	76 9	0	+18	+20	+20	+21	+23
Tallahassee, FL	30 27	84 17	0	+85	+65	+53	+41	+21
Tampa, FL	27 57	82 27	0	+83	+59	+46	+32	+8
Terre Haute, IN	39 28	87 24	1	+15	+8	+5	+2	-5
Texarkana, AR	33 26	94 3	1	+57	+41	+32	+23	+7
Toledo, OH	41 39	83 33	0	+52	+51	+50	+49	+47
Topeka, KS	39 3	95 40	1	+49	+42	+38	+35	+27
Traverse City, MI	44 46	85 38	0	+49	+55	+58	+61	+67
Trenton, NJ	40 13	74 46	0	+21	+17	+15	+12	+7
Trinidad, CO	37 10	104 31	2	+31	+19	+14	+8	-3
Tucson, AZ	32 13	110 58	2	+68	+50	+40	+29	+11
Tulsa, OK	36 9	95 60	1	+58	+46	+40	+33	+21
Tupelo, MS	34 16	88 34	1	+34	+19	+10	-2	-13
Vernal, UT	40 27	109 32	2	+40	+36	+34	+32	+27
Walla Walla, WA	46 4	118 20	3	-5	+5	+9	+14	+24
Washington, DC	38 54	77 1	0	+35	+28	+24	+20	+12
Waterbury-Meriden, CT	41 33	73 3	0	+10	+8	+7	+6	+4
Waterloo, IA	42 30	92 20	1	+25	+25	+25	+25	+26
Wausau, WI	44 58	89 38	1	+5	+12	+15	+18	+25
West Palm Beach, FL	26 43	80 3	0	+76	+50	+36	+21	-5
Wichita, KS	37 42	97 20	1	+60	+50	+45	+40	+30
Williston, ND	48 9	103 37	1	+47	+63	+70	+78	+94
Wilmington, DE	39 45	75 33	0	+27	+21	+18	+15	+9
Wilmington, NC	34 14	77 55	0	+51	+36	+27	+19	+4
Winchester, VA	39 11	78 10	0	+38	+32	+28	+25	+19
Worcester, MA	42 16	71 48	0	+3	+3	+3	+3	+3
York, PA	39 58	76 47	0	+31	+25	+23	+20	+14
Youngstown, OH	41 6	80 39	0	+43	+40	+38	+37	+34
Yuma, AZ	32 43	114 37	2	+81	+64	+54	+44	+27
Anchorage, AK	61 10	149 59	4	-130	-86	-44	-2	+42
Cordova, AK	60 33	145 45	4	-86	-42	0	+42	+86
Fairbanks, AK	64 48	147 51	4	-89	-39	+6	+51	+101
Fort Randall, AK	55 10	162 47	4	+8	+43	+69	+95	+130
Fort Yukon, AK	66 34	145 16	4	*	-62	-2	+58	*
Juneau, AK	58 18	134 25	3	-63	-25	+15	+55	+93
Ketchikan, AK	55 21	131 39	3	-59	-24	+2	+28	+63
Kodiak, AK	57 47	152 24	4	-108	-69	-34	+1	+40
McGrath, AK	62 58	155 36	4	-51	-13	+39	+85	+129
Nome, AK	64 30	165 25	5	-137	-87	-42	+3	+53
Hilo, HI	19 44	155 5	4	+36	+3	-24	-51	-84

City	North Latitude		West Longitude		Time Zone Code	Key Letters				
	°	'	°	'		A min.	B min.	C min.	D min.	E min.
Honolulu, HI	21	18	157	52	4	+47	+14	-13	-40	-73
Lanai City, HI	20	50	156	55	4	+44	+11	-16	-43	-76
Lihue, HI	21	59	159	23	4	+54	+21	-6	-33	-66
<b>CANADA</b>										
Calgary, Alb.	51	05	114	05	2	+18	+35	+51	+68	+84
Edmonton, Alb.	53	34	113	25	2	+5	+26	+48	+69	+90
Halifax, N.S.	44	38	63	35	-1	+21	+25	+30	+34	+38
Montreal, Que.	45	28	73	39	0	-2	+4	+10	+15	+21
Ottawa, Ont.	45	25	75	43	0	+7	+13	+19	+24	+30
St. John, N.S.	45	16	66	03	-1	+28	+34	+39	+45	+50
Saskatoon, Sas.	52	10	106	40	2	-16	+3	+21	+40	+58
Sydney, N.S.	46	10	60	10	-1	+1	+8	+16	+23	+30
Thunder Bay, Ont.	48	27	89	12	0	+49	+61	+72	+84	+95
Toronto, Ont.	43	39	79	23	0	+29	+31	+33	+36	+38
Vancouver, B.C.	49	13	123	06	3	+1	+14	+27	+40	+53
Winnipeg, Man.	49	53	97	10	1	+15	+29	+44	+58	+72



## KILLING FROSTS and GROWING SEASONS

Courtesy of National Climatic Center

City	Growing Season (Days)	Last Frost Spring	First Frost Fall	City	Growing Season (Days)	Last Frost Spring	First Frost Fall
Montgomery, AL	279	Feb. 27	Dec. 3	St. Louis, MO	220	Apr. 2	Nov. 8
Little Rock, AR	244	Mar. 16	Nov. 15	Helena, MT	134	May 12	Sept. 23
Phoenix, AZ	317	Jan. 27	Dec. 11	Omaha, NE	189	Apr. 14	Oct. 20
Tucson, AZ	261	Mar. 6	Nov. 23	Reno, NV	141	May 14	Oct. 2
Eureka, CA	335	Jan. 24	Dec. 25	Concord, NH	142	May 11	Sept. 30
Los Angeles, CA	*	*	*	Trenton, NJ	211	Apr. 8	Nov. 5
Sacramento, CA	321	Jan. 24	Dec. 11	Albuquerque, NM	196	Apr. 16	Oct. 29
San Diego, CA	*	*	*	Albany, NY	169	Apr. 27	Oct. 13
San Francisco, CA	*	*	*	Raleigh, NC	237	Mar. 24	Nov. 16
Denver, CO	165	May 2	Oct. 14	Bismarck, ND	136	May 11	Sept. 24
Hartford, CT	180	Apr. 22	Oct. 19	Cincinnati, OH	192	Apr. 15	Oct. 25
Washington, D.C.	200	Apr. 10	Oct. 28	Toledo, OH	184	Apr. 24	Oct. 25
Miami, FL	*	*	*	Oklahoma City, OK	223	Mar. 28	Nov. 7
Macon, GA	252	Mar. 12	Nov. 19	Medford, OR	178	Apr. 25	Oct. 20
Pocatello, ID	145	May 8	Sept. 30	Portland, OR	279	Feb. 25	Dec. 1
Chicago, IL	192	Apr. 19	Oct. 28	Harrisburg, PA	201	Apr. 10	Oct. 28
Evansville, IN	216	Apr. 2	Nov. 4	Scranton, PA	174	Apr. 24	Oct. 14
Fort Wayne, IN	179	Apr. 24	Oct. 20	Columbia, SC	252	Mar. 14	Nov. 21
Des Moines, IA	183	Apr. 20	Oct. 19	Huron, SD	149	May 4	Sept. 30
Wichita, KS	210	Apr. 5	Nov. 1	Chattanooga, TN	229	Mar. 26	Nov. 10
Shreveport, LA	272	Mar. 1	Nov. 27	Del Rio, TX	300	Feb. 12	Dec. 9
New Orleans, LA	302	Feb. 13	Dec. 12	Midland, TX	218	Apr. 3	Nov. 6
Portland, ME	169	Apr. 29	Oct. 15	Salt Lake City, UT	202	Apr. 12	Nov. 1
Boston, MA	192	Apr. 16	Oct. 25	Burlington, VT	148	May 8	Oct. 3
Alpena, MI	156	May 6	Oct. 9	Richmond, VA	220	Apr. 2	Nov. 8
Detroit, MI	181	Apr. 25	Oct. 23	Spokane, WA	175	Apr. 20	Oct. 12
Marquette, MI	156	May 14	Oct. 17	Parkersburg, WV	189	Apr. 16	Oct. 21
Duluth, MN	125	May 22	Sept. 24	Green Bay, WI	161	May 6	Oct. 13
Minneapolis, MN	166	Apr. 30	Oct. 13	Madison, WI	177	Apr. 26	Oct. 19
Jackson, MS	248	Mar. 10	Nov. 13	Lander, WY	128	May 15	Sept. 20
Columbia, MO	198	Apr. 9	Oct. 24				

\*Frosts do not occur every year.

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# CUT THE TOUGHEST TOENAILS...QUICKLY, EASILY!

only  
**\$3<sup>99</sup>**

- Surgical-sharp cutting edges trim toughest toenails

- L-o-n-g shank for extra leverage

- Easy-to-handle, 4" long

- Shaped, narrow blades get into sensitive spots without irritating. Even under ingrown toenails for quick removal.

- Use for pedicure, manicure, other household cutting

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P.O. Box 4305, New Windsor, NY 12550



DORSAY MARKETING, Dept. TC1200,  
137 Walsh Ave., P.O. Box 4305, New Windsor, NY 12550

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Enclosed is \$\_\_\_\_\_ (N.Y. residents please add sales tax)

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Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

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Social Security provides \$255.00 for burial—far short of the amount needed to pay today's funeral expenses. In a survey reported by the Wall Street Journal, the average funeral in the United States was found to cost \$1600.00. Make up the difference between what Social Security pays and what your loved ones will have to pay with Senior Citizens Whole Life Insurance.

### NO PHYSICAL EXAM REQUIRED

Folks 55 to 80 can now apply for Whole Life Insurance—up to \$6,000—to help defray today's high cost of final expenses. No physical. Two simple health questions determine insurability.

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Available to residents of all states except CT, ME, MT, NJ, NY, NH, and VT. Residents of FL, MN, GA, IL, PA, and MI will be sent special forms and/or advertising required by their states.

# BURIAL INSURANCE

UP TO **\$6,000** AT AGE 80!

**GUARANTEE RESERVE LIFE**  
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Mr.

Mrs.

Ms. \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State/Zip \_\_\_\_\_

Mo., Day, Year of Birth \_\_\_\_\_



## TIDE CORRECTIONS

Many factors affect the time and height of the tides: the coastal configuration, the time of the moon's southing (crossing the meridian) at the place, and the phase of the moon. This table of tidal corrections is a sufficiently accurate guide to the times and heights of the high water at the places shown. (Low tides occur approximately 6 hours before and after high tides.) No figures are shown for most places on the Gulf of Mexico, since the method used in compiling this table does not apply there. For such places and elsewhere where precise accuracy is required, recourse should be made to the Tide Tables published annually by the Distribution Div. C44, National Ocean Survey, Dept. of Commerce, Riverdale, MD 20840.

To obtain the time and height of high water at any place, apply the time difference below to the daily times of high water at Boston (Commonwealth Pier) as they appear on left-hand pages 38-64, and the height difference to the daily heights at Boston given on right-hand pages 39-65. Where the value in the "height difference" column is marked by an \*, height at Boston should be multiplied by this ratio.

	<i>Time Difference Hr. Min.</i>	<i>Height Difference Feet</i>		<i>Time Difference Hr. Min.</i>	<i>Height Difference Feet</i>
<b>MAINE</b>					
Bar Harbor .....	-0 34	+0.9	Plymouth .....	+0 05	0.0
Belfast .....	-0 20	+0.4	Provincetown .....	+0 14	-0.4
Boothbay Harbor .....	-0 18	-0.8	Revere Beach .....	-0 01	-0.3
Chebeague Island .....	-0 16	-0.6	Rockport .....	-0 08	-1.0
Eastport .....	-0 28	+8.4	Salem .....	0 00	-0.5
Kennebunkport .....	+0 04	-1.0	Scituate .....	-0 05	-0.7
Machias .....	-0 28	+2.8	Wareham .....	-3 09	-5.3
Monhegan Island .....	-0 25	-0.8	Wellfleet .....	+0 12	+0.5
Old Orchard .....	0 00	-0.8	West Falmouth .....	-3 10	-5.4
Portland .....	-0 12	-0.6	Westport Harbor .....	-3 22	-6.4
Rockland .....	-0 28	+0.1	Woods Hole		
Stonington .....	-0 30	+0.1	Little Harbor .....	-2 50	*0.2
York .....	-0 09	-1.0	Oceanographic		
			Inst. ....	-3 07	*0.2
<b>NEW HAMPSHIRE</b>					
Hampton .....	+0 02	-1.3	<b>RHODE ISLAND</b>		
Portsmouth .....	+0 11	-1.5	Bristol .....	-3 24	-5.3
Rye Beach .....	-0 09	-0.9	Sakonnet .....	-3 44	-5.6
<b>MASSACHUSETTS</b>					
Annisquam .....	-0 02	-1.1	Narragansett Pier .....	-3 42	-6.2
Beverly Farms .....	0 00	-0.5	Newport .....	-3 34	-5.9
Boston .....	0 00	0.0	Pt. Judith .....	-3 41	-6.3
Cape Cod Canal			Providence .....	-3 20	-4.8
East Entrance .....	-0 01	-0.8	Watch Hill .....	-2 50	-6.8
West Entrance .....	-2 16	-5.9	<b>CONNECTICUT</b>		
Chatham			Bridgeport .....	+0 01	-2.6
Outer Coast .....	+0 30	-2.8	Madison .....	-0 22	-2.3
Inside .....	+1 54	*0.4	New Haven .....	-0 11	-3.2
Cohasset .....	+0 02	-0.7	New London .....	-1 54	-6.7
Cotuit Highlands .....	+1 15	*0.3	Norwalk .....	+0 01	-2.2
Dennisport .....	+1 01	*0.4	Old Lyme .....	-0 30	-6.2
Duxbury .....	+0 02	-0.3	(Highway Bridge)		
(Gurnet Pt.)			Stamford .....	+0 01	-2.2
Fall River .....	-3 03	-5.0	Stonington .....	-2 27	-6.6
Gloucester .....	-0 03	-0.8	<b>NEW YORK</b>		
Hingham .....	+0 07	0.0	Coney Island .....	-3 33	-4.9
Hull .....	+0 03	-0.2	Fire Island Lt. ....	-2 43	*0.1
Hyannis Port .....	+1 01	*0.3	Long Beach .....	-3 11	-5.7
Magnolia .....	-0 02	-0.7	Montauk Harbor .....	-2 19	-7.4
(Manchester)			New York City .....	-2 43	-5.0
Marblehead .....	-0 02	-0.4	(Battery)		
Marion .....	-3 22	-5.4	Oyster Bay .....	+0 04	-1.8
Monument Beach .....	-3 08	-5.4	Port Chester .....	-0 09	-2.2
Nahant .....	-0 01	-0.5	Port Washington .....	-0 01	-2.1
Nantasket .....	+0 04	-0.1	Sag Harbor .....	-0 55	-6.8
Nantucket .....	-0 56	*0.3	Southampton .....	-4 20	*0.2
Nauset Beach .....	+0 30	*0.6	(Shinnecock Inlet)		
New Bedford .....	-3 24	-5.7	Willetts Point .....	0 00	-2.3
Newburyport .....	+0 19	-1.8	<b>NEW JERSEY</b>		
Oak Bluffs .....	+0 30	*0.2	Asbury Park .....	-4 04	-5.3
Onset .....	-2 16	-5.9	Atlantic City .....	-3 56	-5.5
(R.R. Bridge)			Bay Head (Sea Girt) .	-4 04	-5.3

	<i>Time</i>	<i>Height</i>		<i>Time</i>	<i>Height</i>
Beach Haven .....	-1 43	*0.24	Key West .....	+11 24	-9.1
Cape May .....	-3 28	-5.3	Miami Harbor		
Ocean City .....	-3 06	-5.9	Entrance .....	-3 18	-7.0
Sandy Hook .....	-3 30	-5.0	St. Augustine .....	-2 55	-4.9
Seaside Park .....	-4 03	-5.4	St. Petersburg .....	-9 53	-7.6
<b>PENNSYLVANIA</b>			Sarasota .....	-11 31	*0.22
Philadelphia .....	+2 40	-3.5	Suwannee River		
<b>DELAWARE</b>			Entrance .....	-9 01	-6.4
Cape Henlopen .....	-2 48	-5.3	<b>CALIFORNIA</b>		
Rehoboth Beach .....	-3 37	-5.7	Carmel .....	-0 22	*0.5
Wilmington .....	+1 56	-3.8	Catalina Island .....	-1 23	*0.5
<b>MARYLAND</b>			Crescent City .....	-2 05	-4.1
Annapolis .....	+6 23	-8.5	Eureka .....	+1 35	-3.4
Baltimore .....	+7 59	-8.3	Laguna Beach .....	-1 38	*0.5
Cambridge .....	+5 05	-7.8	Long Beach .....	-1 30	*0.5
Havre de Grace .....	+11 21	-7.7	Los Angeles .....	-1 33	-4.7
Point No Point .....	+2 28	-8.1	Mendocino .....	+0 03	-4.4
Prince Frederick .....	+4 25	-8.5	Monterey .....	-0 31	-4.9
(Plum Point)			San Diego .....	-1 41	-4.3
<b>VIRGINIA</b>			San Francisco .....	+0 45	-4.4
Cape Charles .....	-2 20	-7.0	Santa Barbara .....	-1 10	*0.5
Hampton Roads .....	-2 02	-6.9	Santa Cruz .....	-0 34	-4.9
Norfolk .....	-2 06	-6.6	Santa Rosa Is. ....	-0 03	-4.5
Virginia Beach .....	-4 00	-6.0	<b>OREGON</b>		
Yorktown .....	-2 13	-7.0	Astoria .....	+2 21	-1.5
<b>NORTH CAROLINA</b>			Empire-North Bend .	+1 48	-3.4
Cape Fear .....	-3 55	-5.0	Gold Beach .....	+1 45	-3.4
Cape Lookout .....	-4 28	-5.7	(Rogue R. Entrance)		
Currituck .....	-4 10	-5.8	Tillamook .....	+2 28	*0.6
Hatteras			<b>WASHINGTON</b>		
Ocean .....	-4 26	-6.0	Aberdeen .....	+2 09	-0.1
Inlet .....	-4 03	-7.4	Bellingham .....	-6 18	-1.4
Kitty Hawk .....	-4 14	-6.2	Cape Flaherty .....	+1 26	*0.8
<b>SOUTH CAROLINA</b>			Columbia River		
Charleston .....	-3 22	-4.3	Entrance (Ilwaco) .	+1 35	-2.2
Georgetown .....	-1 48	*0.36	Everett .....	-6 30	+1.1
Hilton Head .....	-3 22	-2.9	Long Beach .....	+1 07	*0.8
Myrtle Beach .....	-3 49	-4.4	Pacific Beach .....	+1 10	*0.9
St. Helena			Port Townsend .....	-7 04	-1.6
Harbor Entrance ..	-3 15	-3.4	Seattle .....	-6 21	+1.3
<b>GEORGIA</b>			South Bend .....	+2 08	-0.2
Jekyll Island .....	-3 46	-2.9	Tacoma .....	-6 14	+1.8
Saint Simon's Island .	-2 50	-2.9	<b>ALASKA</b>		
Savannah Beach			Anchorage .....	-4 58	+17.5
River Entrance ....	-3 14	-5.5	Juneau .....	+3 08	+6.1
Tybee Light' .....	-3 22	-2.7	Kodiak .....	+1 53	-1.7
<b>FLORIDA</b>			<b>CANADA</b>		
Apalachicola .....	-7 53	*0.18	Alberton, P.E.I. ....	-5 45**	-7.5
Cape Kennedy .....	-3 59	-6.0	Charlottetown, P.E.I.	-0 45**	-3.5
Clearwater .....	-9 01	-6.4	Halifax, N.S. ....	-3 23	-4.5
Daytona Beach .....	-3 28	-5.3	North Sydney, N.S. .	-3 15	-6.5
Everglades City .....	+16 12	-7.3	St. John, N.B. ....	+0 30	-8.0
Fort Lauderdale .....	-2 50	-7.2	St. John's, Nfld. ....	-4 00	-6.5
Fort Myers .....	-7 45	*0.12	Vancouver, B.C. ....	-5 25	+4.2
Fort Pierce Inlet ....	-3 32	-6.9	Yarmouth, N.S. ....	-0 40	+3.0
Jacksonville					
Railroad Bridge ...	-6 55	*0.10			

\*\*Varies widely; accurate only within 1½ hrs. Consult local tide tables for precise times and heights.

**Example:** The figures for Full Sea on the left-hand Calendar pages 38-64 are the times of high tide at Commonwealth Pier in Boston harbor. The heights of these tides are given on the right-hand pages 39-65. The heights are reckoned from Mean Low Water; each day has a set of figures — upper for the morning and lower for the evening. The conversion of the times of the tides at Boston to those of Coney Island, New York, is given as illustration.

Sample tide calculation	High Tide Boston (p. 42)	3:15 P.M.	Tide height Boston (p. 43)	9.4 ft.
January 1, 1982:	Correction for Coney Is.	-3:33 hrs.	Correction for Coney Is.	-4.9 ft.
		11:42 A.M.	Tide height Coney Is.	4.5 ft.



## OUTDOOR PLANTING TABLE, 1982

The best time to plant flowers and vegetables that bear crops above the ground is during the LIGHT of the moon; that is, between the day the moon is new to the day it is full. Flowering bulbs and vegetables that bear crops below ground should be planted during the DARK of the moon; that is, from the day after it is full to the day before it is new again. These moon days for 1982 are given in the "Moon Favorable" columns below. See pages 38-64 for the exact times and days of the new and full moons.

The three columns below give planting dates for the Weather Regions listed. (See Map p. 86). Plant one week later for every 500 feet above sea level. Consult page 74 for dates of killing frosts and length of growing season. Weather regions 5 and South 16 are practically frost free.

Above Ground Crops Marked(*)	Weather Regions 1, 6, 9, 10, North 13		Weather Regions 2, 3, 7, 11, South 13, 15		Weather Regions 4, 8, 12, 14, 16	
E means Early L means Late	Planting Dates	Moon Favorable	Planting Dates	Moon Favorable	Planting Dates	Moon Favorable
*Barley	5/15-6/21	5/23-6/6	3/15-4/7	3/26-4/7	2/15-3/7	2/24-3/7
*Beans (E)	5/7-6/21	5/23-6/6	4/15-30	4/24-30	3/15-4/7	3/26-4/7
(L)	6/15-7/15	6/22-7/6	7/1-21	7/1-6, 21	8/7-30	8/19-30
Beets (E)	5/1-15	5/8-15	3/15-4/3	3/15-25	2/7-28	2/9-23
(L)	7/15-8/15	7/15-20, 8/5-15	8/15-30	8/15-18	9/1-30	9/4-17
*Broccoli (E)	5/15-30	5/23-30	3/7-30	3/7-9, 3/26-30	2/15-3/15	2/24-3/9
(L)	6/15-7/7	6/22-7/6	8/1-20	8/1-4, 19-20	9/7-30	9/18-30
*Brussels Spr.	5/15-30	5/23-30	3/7-4/15	3/7-9, 3/26-4/8	2/11-3/20	2/24-3/9
*Cabbage Pl.	5/15-30	5/23-30	3/7-4/15	3/7-9, 3/26-4/8	2/11-3/20	2/24-3/9
Carrots (E)	5/15-30	5/15-22	3/7-31	3/10-25	2/15-3/7	2/15-23
(L)	6/15-7/21	6/15-21, 7/7-20	7/7-30	7/7-20	8/1-9/7	8/5-18, 9/4-7
*Cauliflower (E)	5/15-30	5/23-30	3/15-4/7	3/26-4/7	2/15-3/7	2/24-3/9
Pl. (L)	6/15-7/21	6/22-7/6, 7/21	7/1-8/7	7/1-6, 7/21-8/4	8/7-30	8/19-30
*Celery (E)	5/15-6/30	5/23-6/6	3/7-30	3/7-9, 3/26-30	2/15-28	2/24-28
(L)	7/15-8/15	6/22-7/6, 7/21	8/15-9/7	8/19-9/3	9/15-30	9/18-30
*Corn, Sw. (E)	5/10-6/15	5/23-6/6	4/1-15	4/1-8	3/15-30	3/26-30
(L)	6/15-30	6/22-30	7/7-21	7/21	8/7-30	8/19-30
*Cucumber	5/7-6/20	5/23-6/6	4/7-5/15	4/7-8, 4/24-5/7	3/7-4/15	3/7-9, 3/26-4/8
*Eggplant Pl.	6/1-30	6/1-6, 6/22-30	4/7-5/15	4/7-8, 4/24-5/7	3/7-4/15	3/7-9, 3/26-4/8
*Endive (E)	5/15-30	5/23-30	4/7-5/15	4/7-8, 4/24-5/7	2/15-3/20	2/24-3/9
(L)	6/7-30	6/22-30	7/15-8/15	7/21-8/4	8/15-9/7	8/19-9/3
*Flowers	5/7-6/21	5/23-6/6, 6/21	4/15-30	4/24-30	3/15-4/7	3/26-4/7
*Kale (E)	5/15-30	5/23-30	3/7-4/7	3/7-9, 3/26-4/8	2/11-3/20	2/24-3/9
(L)	7/1-8/7	7/1-6, 7/21-8/4	8/15-31	8/19-31	9/7-30	9/18-30
Leek Pl.	5/15-30	5/15-22	3/7-4/7	3/10-25	2/15-4/15	2/15-23, 3/10-25, 4/9-15
*Lettuce	5/15-6/30	5/23-6/6, 6/22-30	3/1-31	3/1-9, 3/26-31	2/15-3/7	2/24-3/7
*Muskmelon	5/15-6/30	5/23-6/6, 6/22-30	4/15-5/7	4/24-5/7	3/15-4/7	3/24-4/7
Onion Pl.	5/15-6/7	5/15-22, 6/7	3/1-31	3/10-25	2/1-28	2/9-23
*Parsley	5/15-30	5/23-30	3/1-31	3/1-9, 3/26-31	2/20-3/15	2/24-3/9
Parsnips	4/1-30	4/9-23	3/7-31	3/10-25	1/15-2/4	1/15-24
*Peas (E)	4/15-5/7	4/24-5/7	3/7-31	3/7-9, 3/26-31	1/15-2/7	1/25-2/7
(L)	7/15-30	7/19-30	8/7-31	8/29-31	9/15-30	9/18-30
*Pepper Pl.	5/15-6/30	5/23-6/6, 6/22-30	4/1-30	4/4-8	3/1-20	3/1-9
Potato	5/1-15	5/8-15	4/1-15	4/9-15	2/10-28	2/10-23
*Pumpkin	5/15-30	5/23-30	4/23-5/15	4/24-5/7	3/7-20	3/7-9
Radish (E)	4/15-30	4/15-23	3/7-31	3/10-25	1/21-3/1	1/21-24, 2/9-23
(L)	4/15-30	8/15-18	9/7-30	9/4-17	10/1-21	10/3-16
*Spinach (E)	5/15-30	5/23-30	3/15-4/20	3/26-4/8	2/7-3/15	2/7-8, 2/24-3/9
(L)	7/15-9/7	7/21-8/4, 8/19-9/3	8/1-9/15	8/1-4, 8/19-9/3	10/1-21	10/17-21
*Squash	5/15-6/15	5/23-6/6	4/15-30	4/24-30	3/15-4/15	3/26-4/8
*Swiss Chard	5/1-30	5/1-7, 5/23-30	3/15-4/15	3/26-4/8	2/7-3/15	2/7-8, 2/24-3/9
*Tomato Pl.	5/15-30	5/23-30	4/7-30	4/7-8, 4/24-30	3/7-20	3/7-9
Turnips (E)	4/7-30	4/9-23	3/15-30	3/15-25	1/20-2/15	1/20-24, 2/9-15
(L)	7/1-8/15	7/7-20, 8/5-15	8/1-20	8/5-18	9/1-10/15	9/4-17, 10/3-15
*Wheat, Winter	8/11-9/15	8/19-9/3	9/15-10/20	9/18-10/2	10/15-12/7	10/17-11/1, 11/16-30
Spring	4/7-30	4/7-8, -24-30	3/1-20	3/1-9	2/15-28	2/24-28



### Gardening by the Moon's Sign

The Outdoor Planting Table on the opposite page shows how the phases of the moon have long been used as a guide for planting crops. But in addition to the general rules concerning the light and dark of the moon — by which that table is prepared — there is another ancient set of guidelines involving the moon's place in the Zodiac. Gardeners who use the moon's sign follow these rules: 1) Plant when the moon is in a fruitful, feminine sign: Cancer, Scorpio, Pisces, Taurus or Capricorn. 2) Cultivate when the moon is in a barren, masculine sign: Aries, Leo, Virgo, Sagittarius, Gemini, Libra and Aquarius.

There are specific activities best performed when the moon is in a certain sign: **Aries:** cultivating, plowing, tilling. **Taurus:** potatoes, root crops, lettuce, cabbage. **Gemini:** weeding, cultivating, destroying growths. **Cancer:** best sign for all planting and irrigating. **Leo:** use only for killing weeds. **Virgo:** good for cultivation. **Libra:** planting flowers, seeding hay and livestock feed. **Scorpio:** very productive for all planting, especially vines. **Sagittarius:** cultivation, planting onions, seeding hay. **Capricorn:** potatoes, tubers, root crops. **Aquarius:** weeding, destroying pests. **Pisces:** highly productive, especially for root growing.

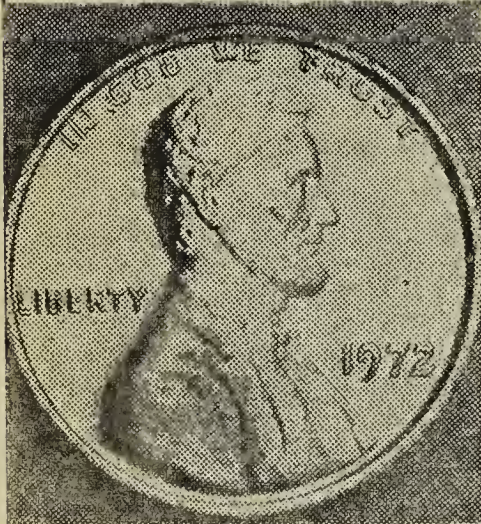
#### MOON'S PLACE IN THE ZODIAC

	Nov 81	Dec 81	Jan 82	Feb 82	Mar 82	Apr 82	May 82	June 82	July 82	Aug 82	Sept 82	Oct 82	Nov 82	Dec 82
1	SAG	CAP	PSC	TAU	TAU	CAN	LEO	LIB	SCO	SAG	AQU	PSC	TAU	GEM
2	CAP	AQU	PSC	TAU	TAU	CAN	VIR	LIB	SCO	CAP	AQU	PSC	TAU	GEM
3	CAP	AQU	ARI	GEM	GEM	LEO	VIR	SCO	SAG	CAP	PSC	ARI	TAU	CAN
4	CAP	PSC	ARI	GEM	GEM	LEO	VIR	SCO	SAG	AQU	PSC	ARI	GEM	CAN
5	AQU	PSC	TAU	CAN	CAN	VIR	LIB	SCO	SAG	AQU	PSC	TAU	GEM	LEO
6	AQU	ARI	TAU	CAN	CAN	VIR	LIB	SAG	CAP	AQU	ARI	TAU	CAN	LEO
7	PSC	ARI	GEM	LEO	LEO	VIR	SCO	SAG	CAP	PSC	ARI	GEM	CAN	VIR
8	PSC	ARI	GEM	LEO	LEO	LIB	SCO	CAP	AQU	PSC	TAU	GEM	LEO	VIR
9	ARI	TAU	CAN	LEO	VIR	LIB	SCO	CAP	AQU	ARI	TAU	CAN	LEO	LIB
10	ARI	TAU	CAN	VIR	VIR	SCO	SAG	CAP	AQU	ARI	GEM	CAN	VIR	LIB
11	TAU	GEM	LEO	VIR	LIB	SCO	SAG	AQU	PSC	ARI	GEM	LEO	VIR	LIB
12	TAU	GEM	LEO	LIB	LIB	SAG	CAP	AQU	PSC	TAU	CAN	LEO	LIB	SCO
13	GEM	CAN	VIR	LIB	LIB	SAG	CAP	PSC	ARI	TAU	CAN	LEO	LIB	SCO
14	GEM	CAN	VIR	SCO	SCO	SAG	CAP	PSC	ARI	GEM	LEO	VIR	SCO	SAG
15	CAN	LEO	LIB	SCO	SCO	CAP	AQU	PSC	TAU	GEM	LEO	VIR	SCO	SAG
16	CAN	LEO	LIB	SCO	SAG	CAP	AQU	ARI	TAU	CAN	VIR	LIB	SCO	CAP
17	LEO	VIR	LIB	SAG	SAG	AQU	PSC	ARI	GEM	CAN	VIR	LIB	SAG	CAP
18	LEO	VIR	SCO	SAG	CAP	AQU	PSC	TAU	GEM	LEO	LIB	SCO	SAG	CAP
19	VIR	LIB	SCO	CAP	CAP	AQU	ARI	TAU	CAN	LEO	LIB	SCO	CAP	AQU
20	VIR	LIB	SAG	CAP	CAP	PSC	ARI	GEM	CAN	VIR	LIB	SAG	CAP	AQU
21	VIR	SCO	SAG	CAP	AQU	PSC	ARI	GEM	LEO	VIR	SCO	SAG	CAP	AQU
22	LIB	SCO	SAG	AQU	AQU	ARI	TAU	CAN	LEO	LIB	SCO	SAG	AQU	PSC
23	LIB	SCO	CAP	AQU	PSC	ARI	TAU	CAN	VIR	LIB	SAG	CAP	AQU	PSC
24	SCO	SAG	CAP	PSC	PSC	TAU	GEM	LEO	VIR	SCO	SAG	CAP	PSC	ARI
25	SCO	SAG	AQU	PSC	PSC	TAU	GEM	LEO	VIR	SCO	SAG	AQU	PSC	ARI
26	SCO	SAG	AQU	ARI	ARI	GEM	CAN	VIR	LIB	SCO	CAP	AQU	PSC	TAU
27	SAG	CAP	AQU	ARI	ARI	GEM	CAN	VIR	LIB	SAG	CAP	AQU	ARI	TAU
28	SAG	CAP	PSC	TAU	TAU	CAN	LEO	LIB	SCO	SAG	AQU	PSC	ARI	GEM
29	CAP	AQU	PSC	—	TAU	CAN	LEO	LIB	SCO	CAP	AQU	PSC	TAU	GEM
30	CAP	AQU	ARI	—	GEM	LEO	VIR	LIB	SAG	CAP	AQU	ARI	TAU	CAN
31	—	PSC	ARI	—	GEM	—	VIR	—	SAG	CAP	—	ARI	—	CAN

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## HOW TO GROW YOUR OWN CHRISTMAS FLOWERS WITHOUT A GREENHOUSE

by Helen Tower Brunet

It's all a question of timing, pre-cooling, and/or cold-weather conditioning . . .



□ FOR DECORATING THE HOUSE OR for gifts to friends, flowering plants are as much a part of the Christmas season as cookies and plum pudding. With a little planning ahead, some of your favorite spring bulbs can be brought into bloom by Christmas, without a greenhouse.

One group is composed of plants that will bloom at Christmas without a special cooling period after purchase. In this group are paper-white narcissus, amaryllis, and lily of the valley. The amaryllis and lily of the valley must have been pre-cooled\* by the grower. The first table shows the requirements of these three.

Hardy spring bulbs such as certain

early crocus and early pre-cooled daffodils and tulips comprise the second group. They need a period of conditioning in cold storage in the fall after purchase. This cold storage can take place either in the refrigerator or, in zones where there is a hard frost by October 15, in an outdoor trench.

To make a trench for conditioning bulbs, select a site on the north side of the house or one that is shaded by evergreens or another building. The trench should be two feet deep and about a foot and a half wide. Line the trench with four inches of stone to ensure good drainage. Plant the bulbs in pots, and place the pots in the trench. Pour coarse sand or perlite



TABLE I — SCHEDULE FOR PAPER-WHITE NARCISSUS, AMARYLLIS,


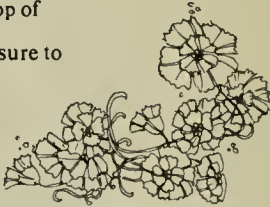

	WHEN ORDERING	HOW TO PLANT	WHEN TO PLANT
<i>Paper-white Narcissus</i>	Buy the bulbs locally or through catalogue. Hold in closed paper bag at room temperature until ready to plant. Select Paper-White Narcissus or Grand Soleil d'Or Narcissus, both from the south of France.	Plant in dishes 4 inches deep or more. Fill dish 3/4 with pebbles or small stones. Add water until it touches bottom of bulbs and check each day to see if additional water is needed. Bulbs should be set securely in stones with just their bases covered.	Start Nov. 15 for Christmas bloom.
<i>Amaryllis</i>	Buy only pre-cooled bulbs.	Plant in soil in pot slightly larger than bulb in quick-draining soil. Leave top of bulb exposed. Water thoroughly but make sure to keep top of bulb dry.	Nov. 1 or week before.
			
<i>Lily of the valley</i>	Order special pips which have been pre-cooled. Can be found locally in late November.	Plant either in pebbles and water like paper-white narcissus or in soil.	Start Dec. 7

TABLE II — FORCING SCHEDULE FOR EARLY

	VARIETIES	HOW TO PLANT	COLD STORAGE PERIOD (In trench or refrigerator)
<i>Tulips</i>	Buy only pre-cooled bulbs. These early varieties, if available pre-cooled, are good choices: Albino, Bartigon, Bellona, Golden Harvest, Fred Moore, William Pitt.	Plant 5-6 bulbs to a 6-inch pot. Place flat side against outside rim of pot, with one inch of soil underneath bulbs and tops barely covered. Water well.	Oct. 1-Nov. 15. Bulbs should have sprouted pale green leaves by Nov. 15; if not, give them another week.
<i>Hyacinth</i>	Buy only large, pre-cooled bulbs.	Plant in soil, one bulb to a 4-inch pot, or 3 to a 6-inch pot. Plant 1/2 inch below surface of soil. Water well.	Oct. 1-Dec. 1, or when leaf growth is about 6 inches tall.
			
<i>Daffodil</i>	Of the hardy, Dutch-grown daffodils, only pre-cooled bulbs may be forced as early as Christmas. King Alfred is the best.	Plant bulbs 1 inch apart and 1 inch below surface of soil.	Begin as early in fall as possible; definitely by Oct. 10. Bulbs are ready when there is an inch of top growth, perhaps by Dec. 1. If not, give another week.
<i>Crocus</i>	Very early spring flowering varieties, such as Vernus Vanguard.	Pot in soil; cluster closely with tips just showing.	Oct. 15-Dec. 10, providing leaves are 3 inches high.

## AND LILY OF THE VALLEY

HOW TO GROW	AFTER BLOOM
Place in sunny window or under lights. Add water as needed, more often as bulbs come into flower. Keep water level just below base of bulb. If flowers come too soon, hold back by placing in a cooler, dimmer location for a few days.	Discard.
Place in warm, dark place until growth starts. Water only if soil becomes completely dry during this period. When growth starts, move to strong light: sunny window or under lights. Water demand will increase as flower opens. Keep open flower out of direct sunlight.	Pinch off, or cut off dead flower. Grow as a house-plant. Feed once a month, starting in March. Place outside in summer and allow foliage to increase, feeding once a week. In September, move to frost-free place and allow plant to become dry, until leaves can be pulled off easily. When all growth has died back, bulb is "cured" and ready to start up again.
Place in cool, sunny window. Keep well watered.	May be planted in the garden when soil can be worked in the spring. Grow in good light until that time, and feed once a week after bloom.



## HARDY BULBS

INTERMEDIATE STAGE	AFTER BLOOM
Move to 60° location; start in dim light and gradually increase to full sun in window when leaves have turned green.	Discard
Move plants to warm, dark place until leaf growth is about 8 inches. Move gradually to light as leaf color darkens. Grow on cool, sunny windowsill. Remove from direct sun when flower opens. Keep well watered.	Discard
Move to dim light until shoots turn green, then gradually to full sun or under grow lights.	Discard
Keep watered and grow in good light. After flowers open, move from sun and keep cool.	Discard



over the pots until they are thoroughly covered. After the first frost cover the trench with a heavy mulch of hay, straw, or newspapers held in place with evergreen boughs.

Water is important to the development of bulbs, so water the bulbs well after planting, and check the pots in the trench periodically to make sure the soil is moist.

When you use the refrigerator for cooling bulbs, place well-watered pots in plastic bags on the lower shelves. Check each week to make sure they stay moist, especially in frost-free refrigerators, which tend to remove the moisture from the air.

Bulbs may be planted in any fast-draining soil — it need not be sterilized. If you use garden soil, mix it well with builder's sand. Plastic or clay pots may be used; they must have drainage holes in the bottom. During their pre-flowering period, bulbs need no fertilizer. They have stored up everything needed for flowering during the previous growing season.

\*\*\*

\* Pre-cooled bulbs are especially prepared for early forcing by the grower. For indoor forcing from late January on, pre-cooling is not necessary, although cold storage is required for the hardy spring bulbs. Read the catalogues carefully to make sure the bulbs have been put through the pre-cooling process, or, if buying locally, ask the dealer.

Bulb catalogues are usually free. They are available by mid-summer, and it is wise to order as soon as possible, specifying that you will be using the bulbs for very early forcing. Sources of bulbs: Breck's, 6523 N. Galena Road, Peoria, IL 61632; Jackson & Perkins Co., Rose Lane, Medford, OR 97501; deJager Bulbs, 188 Ashbury St., South Hamilton, MA 01982; and Van Bourgondien Bros., P.O. Box A, 245 Farmingdale Road, Babylon, NY 11702. ■ ■

## THE GIRL WHO STRUCK OUT BABE RUTH

Maybe the attractive teenager just had too many curves for him, but Ruth later swore it was a legitimate strikeout. So did Lou Gehrig — she struck him out, too!

by Robert W. Pelton

□ IT WAS ONLY AN EXHIBITION GAME, and there are those who still maintain it was a publicity stunt. But a little-known chapter in baseball history was written in Chattanooga, Tennessee, just before the start of the 1931 season, when the fabulous New York Yankees played the Chattanooga Lookouts, whose team included a 17-year-old pitcher, Virnie Beatrice "Jackie" Mitchell.

Jackie Mitchell was a left-handed fast-ball pitcher from Fall River, Massachusetts, whose lifetime ambition was to strike out the great Babe Ruth. Promoter Joe Engel, who owned the Lookouts, had signed her up just for that confrontation — and also because sending out a girl to face the Yankees would be a sure-fire way to fill his stadium.

The play worked, and a packed house was present when Jackie took the mound midway through the first inning with Babe Ruth coming to bat. Ruth was to hit 46 home runs that year and bat .373, but he tipped his cap to the pretty teenager when he

stepped into the batter's box. She responded by winding up and throwing the baseball as hard as she possibly could. Ruth took a mighty swing! The crowd went wild as he missed the ball by a foot.

The Babe stepped out of the batter's box and looked out at Jackie. He shook his head as if perplexed, moved back in, and carefully positioned himself for her next pitch. It was wide, as was the third pitch, and his bat never left his shoulder. Ruth requested a new ball from the umpire. Jackie wound up, the ball came blazing in over the plate, Ruth swung — and missed again. But on her final toss he never moved the bat off his shoulder as the umpire yelled, "Strike three — you're out!" Ruth merely walked back to the Yankee bench, shaking his head. The crowd loved every minute of it.

Next in the batting lineup was Lou Gehrig, and he looked as if he really meant business. He wasted no time at bat. Gehrig swung at Jackie's first three pitches, missed them all, and quietly walked back to the dugout to sit next to Ruth. Later both Ruth and Gehrig asserted the strikeouts were strictly on the level.

Joe Engel stood up in the Lookout dugout and motioned for Jackie to come in off the mound. The applause lasted for at least ten full minutes.

This escapade was essentially the beginning and the end of Jackie Mitchell's professional baseball career, although Joe Engel kept her around for a while to pitch in a number of other exhibition games for his Lookouts. She was always headlined as "The Girl Who Struck Out Babe Ruth."





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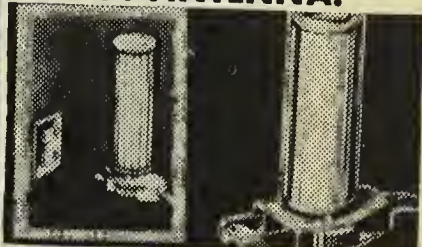
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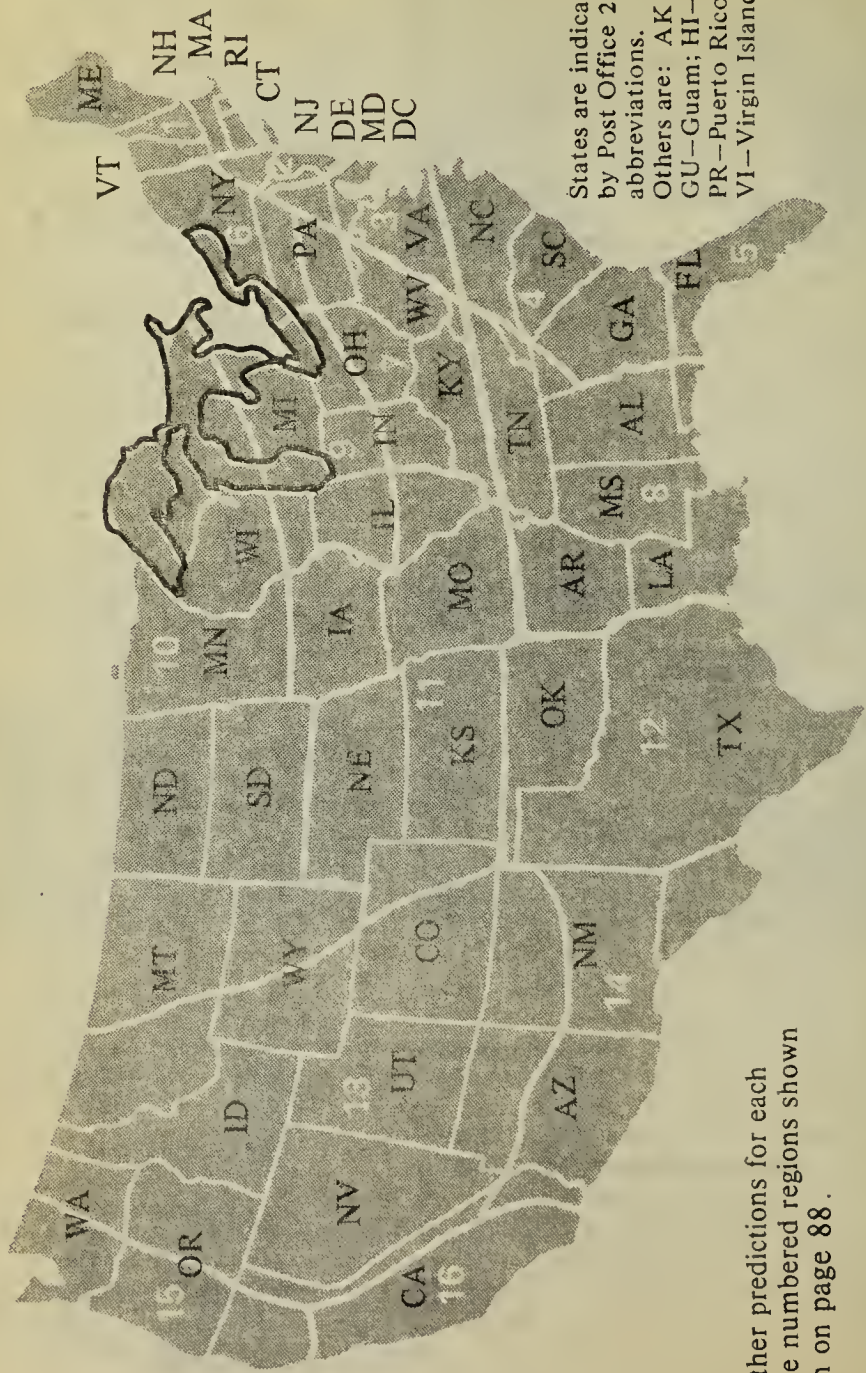
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States are indicated by Post Office 2-letter abbreviations.  
 Others are: AK - Alaska; GU - Guam; HI - Hawaii; PR - Puerto Rico; VI - Virgin Islands.

Weather predictions for each of the numbered regions shown begin on page 88.



## GENERAL WEATHER FORECAST 1981-1982

(For details see regional forecasts starting on page 88)

**November through March:** Winter east of the Rockies will be considerably variable, but overall milder than normal. Precipitation east of the Mississippi will generally be below average through January, but February and March will be wet. Snowfall is expected to be below normal in the southern half of the country and the East except for northern New England, which along with the northern Midwest and Ohio Valley will be snowier than usual. The Great Plains will generally be wet in November and January, but otherwise drier than normal. A major cold wave and snowstorm extending into the southern states is expected for late December into early January. After a thaw, January will be colder than normal, particularly in the Northeast, with above-normal snowfall. February will be mild and wet east of the Mississippi, with above-normal snowfall in northern sections. The Great Plains and south-central U.S. will experience colder-than-average temperatures and above-average snowfall. March will be mild over much of the country, but extremely variable. Northern sections will generally be snowier than usual, while precipitation will be below average west of the Mississippi. Flooding in many sections of the South may be expected.

The **Rockies and West** will be variable but overall milder and drier than normal through the winter, except for above-average snowfall in the north and in the Rockies. In November, expect mild weather in coastal areas, but colder than average inland. The Southwest will be quite dry until mid-December. Temperatures during December will be seasonable to cool while precipitation should be below normal in north-coastal sections and above normal inland. Mild temperatures and below-average precipitation will continue through January. Near-average snowfalls are expected in the higher mountain sections, and above-average amounts in the far northern mountains. February through mid-March will have temperatures below average, but greater-than-average precipitation inland.

**April through October:** Spring may be delayed by a cold and wet April in the eastern half of the country and heavier-than-usual snows in the northern third of the country, and most of the South will be drier than normal. The western Great Plains to the West Coast will have a warm, dry April and May. Several cold waves will cool the East during May. The mid-Atlantic region will have droughts in some sections, while south-Atlantic sections will be moderately wet. From the central Great Plains to the Appalachians May should be warmer and drier than average.

June and July will be warmer than average over much of the country. Frequent cool spells in the Northeast in both months, and in June in the Northwest and down the central West Coast will result in cooler-than-average mean temperatures. Rainfall will be unequally distributed, and droughts will develop in the western Great Plains, sections of the Northeast, and the central Atlantic. August will be cooler than normal through much of the central and southern U.S. and warmer than usual in the Northeast and Atlantic states, far North, and west of the Rockies. Rainfall will again be uneven, but generally lighter than average. September will be warm and dry with drought becoming widespread, except that the western third of the country will be wetter than normal. October will continue mild except for the Northeast, which will be cool.



# 1. NEW ENGLAND

For regional boundaries, see map p. 86.

**SUMMARY:** Winter will be average; individual months will have extremes of weather and temperature. Snowfall will be heavier than normal in the mountains, less than normal in the south. Nov. starts cold, turns warm and dry, alternately cold and warm, then very cold with a snowstorm. Dec. will be cloudy, light in snow, with a cloudy, green Christmas. Jan. should be cold and dry, with average snowfall, a warm second week, and a cold snap at month's end. Feb. will start with a nor'easter in central and northern sections, then be less severe and moist. In March, the north will be snowy, with a storm at mid-month. April will be wet, snowy in the north. Spring may be late, with frost warnings in May. June will start sunny and warm, become cool and wet. Clear dry air comes in July, with drought in southern and central regions. Aug. should be warm, showery the second week. Mild drought will persist in mid-Sept. and after the first week of Oct. Killing frosts will arrive by Oct. 20th.

**Nov. 1981:** Temp. 47° (2° above ave.); Precip. 3" (1.5" below ave.). 1-4 Cloudy, cold, rainy. 5-7 Clear & seasonable. 8-12 Very warm, sunny. 13-15 Light rain, cooler. 16-20 Mild, then cold, snow inland. 21-24 Heavy rain, mild. 25-27 Sunny & warm. 28-30 Cold wave, snowstorm, 10"-15".

**Dec. 1981:** Temp. 34° (1° above ave.; 4° above inland); Precip. 3.5" (1" below ave.; 1" above west). 1-3 Clearing, warming. 4-7 Cold, light snow north. 8-10 Heavy rain & mild. 11-16 Cloudy, mild, then rain. 17-21 Cloudy, turning cold. 22-27 Cloudy, cold, snow flurries. 28-31 Snow, seasonable.

**Jan. 1982:** Temp. 27° (2° below ave.); Precip. 1.5" (1.5" below ave.). 1-5 Cold, flurries. 6-9 Mild, then cold snap; snow north. 10-12 Heavy rain. 13-15 Light rain, mild. 16-18 Cold, snowstorm south. 19-25 Seasonal, then cold, snow south. 26-29 Snowstorm, cold. 30-31 Extremely cold.

**Feb. 1982:** Temp. 31° (0.5° above ave.); Precip. 3.5" (0.5" above ave.; 1" above north). 1-2 Partly cloudy, milder. 3-5 Nor'easter, heavy snow north. 6-8 Rain, snow mountains. 9-11 Cold, snow. 12-15 Rain, mild; snow mountains. 16-18 Sunny & warm. 19-21 Rain becoming snow. 22-26 Rain, warm. 27-28 Cold snap, flurries.

**Mar. 1982:** Temp. 35° (3.5° below ave.; 0.5° below south); Precip. 6" (2" above ave.; 0.5" above north). 1-5 Rain, warm. 6-8 Sunny, seasonable. 9-11 Rain, mild; snow mountains. 12-14 Cold, snow south. 15-17 Heavy snow, 10"-20", cold. 18-20 Freezing rain, snow mountains. 21-23 Sunny & cold. 24-28 Cold, snow north; then clearing & milder. 29-31 Rain, mild.

**April 1982:** Temp. 44° (4.5° below ave.); Precip. 5.5" (2" above ave.). 1-2 Cloudy & cold, rain south. 3-6 Rain, snow mountains, seasonable to cold. 7-9 Cloudy & cold, rain & snow north. 10-16 Rain, cold. 17-21 Sunny, mild, sprinkles; then cold. 22-24 Rain, mild. 25-28 Showers, warm. 29-30 Cool, showers.

**May 1982:** Temp. 57.5° (1° below ave.; 4° below coast); Precip. 1" (2.5" below ave.). 1-2 Cold, showers. 3-6 Sunny, cool. 7-9 Cloudy & cold, few showers. 10-15 Sunny & warm, few showers. 16-21 Cold, frost inland. 22-25 Clearing, warm south, showers north. 26-28 Rain, cold. 29-31 Clear & warm.

**June 1982:** Temp. 67° (1° below ave.; 2° above south); Precip. 3" (Ave.; 1.5" below north). 1-2 Rain, warm east. 3-5 Sunny & hot. 6-10 Cloudy & cool, showers. 11-13 Sunny & warm north, showers south. 14-17 Hot, thundershowers. 18-21 Rain, turning cool. 22-26 Clearing & warm; showers south. 27-30 Cool, rainy.

**July 1982:** Temp. 72° (1° below ave.); Precip. 1" (2" below ave.). 1-2 Clear & warm. 3-5 Rain, cooler. 6-10 Clear & hot. 11-15 Hot, showers. 16-18 Rain, cool. 19-23 Partly cloudy & cool; showers north. 24-28 Some clouds, cool, then warm, showers. 29-31 Warm, showers.

**Aug. 1982:** Temp. 74.5° (3° above ave.); Precip. 2" (1.5" below ave.). 1-4 Cloudy & mild, thundershowers. 5-8 Sunny & hot; then showers. 9-11 Sunny, hot. 12-16 Showers, clearing, hot. 17-21 Few showers, hot. 22-25 Turning mild, rain. 26-28 Clear & hot. 29-31 Warm; showers, locally heavy south.

**Sept. 1982:** Temp. 64.5° (Ave.; 1.5° above inland); Precip. 1.5" (1.5" below ave.). 1-4 Turning cool, rain south. 5-8 Sunny & warm, few showers. 9-11 Rain; clearing, mild. 12-15 Rain, locally heavy, cool. 16-21 Partly cloudy then clear, turning hot. 22-25 Seasonable; cool nights, few showers. 26-28 Clear & warm. 29-30 Rain, warm.

**Oct. 1982:** Temp. 54.5° (1° below ave.); Precip. 2" (1" below ave.). 1-5 Rain; very cool, then warm. 6-8 Cloudy & cold, rain south. 9-14 Warm, partly cloudy with few showers. 15-18 Partly cloudy, turning cold; showers then snow north. 19-23 Cold, snow north. 24-26 Warm, rain. 27-31 Clear & cold, then rain & cold.

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## 2. GREATER NEW YORK-NEW JERSEY

For regional boundaries, see map p. 86.

**SUMMARY:** *Periods of above and below normal temperatures are expected throughout the winter; the average should be mild. Snowfall should be light, despite several heavy storms. Nov. will be seasonable to warm, with two rainy periods; after Thanksgiving a cold wave will bring a snowstorm. Dec. will turn mild, and should be seasonable with little precipitation until a rainstorm at year's end. After a short cold spell, Jan. will be mild through mid-month, when a snowstorm will bring cold. Feb. through the first third of March will be mild and wet, with below normal snowfall and cold spells in early and late Feb. Mid-March and most of April will be cloudy, wet and cold, except for the last week of each. May through mid-June will have warm and cold spells, deficient rainfall. Rains will come just after mid-June and in the first week of July, but rainfall will be below normal through the summer and early fall except for a possible tropical storm in late Aug. First frosts are expected the third week of October.*

**Nov. 1981:** Temp 49° (1.5° above ave.); Precip. 3.5" (0.5" below ave.). 1-2 Showers, rain coast; mild. 3-6 Clearing, cool; then warming. 7-9 Partly cloudy, warm. 10-13 Light rain, warm. 14-16 Sunny & cool, then warm. 17-20 Sprinkles, colder. 21-24 Rain, mild. 25-26 Seasonable. 27-30 Heavy snowstorm, turning very cold.

**Dec. 1981:** Temp. 36° (0.5° above ave.); Precip. 2.5" (1" below ave.). 1-2 Snow ending, cold. 3-7 Sunny, cold. 8-11 Rain, mild. 12-16 Cloudy & mild; rain. 17-21 Partly cloudy, colder. 22-25 Freezing rain, snow mountains. 26-28 Cold, flurries. 29-31 Partly cloudy, cold; rain, warmer.

**Jan. 1982:** Temp. 32° (Ave.); Precip. 2" (1" below ave.). 1-2 Sunny & cold. 3-4 Sleet, snow mountains; cold. 5-8 Partly cloudy & mild. 9-10 Rain, warming. 11-15 Warm, few showers. 16-18 Rain, snow, heavy snow mountains. 19-21 Cloudy, cold. 22-26 Flurries, very cold. 27-31 Clear & seasonable; then snow & very cold.

**Feb. 1982:** Temp. 36° (3° above ave.); Precip. 5" (2" above ave.). 1-4 Sunny & cold, then rain or sleet. 5-8 Clearing & cold; then rain, milder. 9-13 Mild, showers. 14-18 Rain, then clearing & warm. 19-21 Rain changing to snow, very cold. 22-26 Warm, few showers. 27-28 Turning very cold, flurries.

**Mar. 1982:** Temp. 40° (0.5° below ave.); Precip. 6" (2" above ave.). 1-5 Rain, warm. 6-7 Cloudy & cold. 8-10 Rain, warming. 11-14 Sunny, cold, then mild. 15-17 Rain, snow mountains; cold. 18-20 Seasonable, then rain. 21-23 Partly cloudy & cold. 24-28 Clearing, turning warm; few showers south. 29-31 Rain, mild.

**April 1982:** Temp. 48° (3.5° below ave.); Precip. 5" (1.5" above ave.). 1-4 Cold, rain; then seasonable. 5-8 Rain; colder. 9-11 Sunny & cold; then heavy rain, cold. 12-15 Light rain; cold, then mild. 16-21 Cloudy, cold & rainy. 22-25 Rain, then cloudy & cool. 26-30 Clearing, turning very warm, then light rain.

**May 1982:** Temp. 61.5° (0.5° below ave.); Precip. 1" (2.5" below ave.). 1-3 Rain, cold. 4-7 Cloudy, cool, few showers. 8-12 Sunny, turning hot. 13-15 Showers, warm. 16-18 Light rain, cool. 19-23 Cloudy, cool; clearing & hot. 24-27 Rain, heavy west, turning cool. 28-31 Sunny & warm.

**June 1982:** Temp. 73° (1.5° above ave.); Precip. 2" (0.5" below ave.). 1-5 Cloudy & hot; showers. 6-8 Cloudier & cooler; rain. 9-11 Sunny & warm. 12-16 Hot & muggy; showers. 17-19 Heavy rain, cooler. 20-22 Sunny & warm, showers. 23-27 Showers, partly sunny, warm. 28-30 Cloudy & cool.

**July 1982:** Temp. 74° (3° below ave.); Precip. 2" (2" below ave.). 1-2 Sunny & pleasant. 3-5 Heavy rain, mild. 6-8 Clearing, warm. 9-12 Partly cloudy, showers. 13-15 Thundershowers, then clearing; hot. 16-18 Rain, locally heavy, cool. 19-25 Sunny, cool & pleasant. 26-28 Clearing, warm, showers. 29-31 Clear & warm; rain.

**Aug. 1982:** Temp. 77° (2.5° above ave.); Precip. 4" (0.5" below ave.). 1-3 Rain, cool. 4-6 Sunny, warm & humid. 7-10 Thundershowers, warm; then partial clearing. 11-13 Rain, warming. 14-16 Sunny & hot. 17-22 Sunny, hot, few showers. 23-24 Possible tropical storm with heavy rain. 25-27 Sunny, hot & humid. 28-31 Rain, then cloudy & warm.

**Sept. 1982:** Temp. 66.5° (1.5° below ave.); Precip. 1" (2" below ave.). 1-4 Cloudy & cool; rain. 5-8 Sunny & pleasant. 9-11 Rain, cool. 12-14 Sunny & warm, then rain. 15-17 Cloudy & cool, few showers. 18-21 Clear & hot. 22-25 Partly cloudy, cool; rain. 26-28 Clear & warm. 29-30 Showers, cool.

**Oct. 1982:** Temp. 57° (1° below ave.); Precip. 2.5" (0.5" below ave.). 1-3 Rain, then few showers, cool. 4-7 Heavy rain, turning cold. 8-10 Partial clearing & warming, sprinkles. 11-15 Clear & quite warm. 16-19 Partly cloudy, turning cold. 20-24 Clear & cold, frost inland. 25-26 Rain, mild. 27-31 Cold, then mild with light rain.





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### 3. MIDDLE ATLANTIC COASTAL

For regional boundaries, see map p. 86.

**SUMMARY:** *Temperatures should be milder than normal, Nov. and Jan. snowier than average. Nov. should see cold and warm, a snowstorm after Thanksgiving and cold into early Dec. Dec. should be mild the second week, precipitation below average. After a cold snap, Jan. will be mild until mid-month, then cold into early Feb., with heavy snows north and mountains, deficient snowfall in the south. After a storm the first week of Feb. temperatures will be mild then warm and cold through March, with about half the normal snowfall. Cold and rain in April will delay spring. Moderate drought will exist by June. Rain by early July will bring relief, but the north may have drought in July and Aug. Aug. will be warm. A coastal storm may bring rains and wind Aug. 23-24. Sept. and Oct. will see variable temperatures, first frosts October 19-22. Rain through Sept. will be sparse, coastal sections in Oct. wet.*

**Nov. 1981:** Temp. 51° (3° above ave.); Precip. 3" (Ave.). 1-2 Light rain, cool. 3-6 Clearing, warm days & cold nights. 7-12 Cloudy, warm; rain, showers. 13-16 Clear & cold, then very warm. 17-20 Showers, colder. 21-24 Rain, warm. 25-26 Clear & mild. 27-30 Heavy snowstorm; cold.

**Dec. 1981:** Temp. 38° (0.5° above ave.); Precip. 2.5" (0.5" below ave.). 1-2 Cold; snow north. 3-7 Clear & mild, then cloudy & cold. 8-10 Rain, mild. 11-15 Partly cloudy; then rain. 16-20 Clearing & mild, then cloudy & cool. 21-25 Light snow north & west, cold. 26-29 Rain, sleet & snow. 30-31 Rain, snow mountains.

**Jan. 1982:** Temp. 37° (1.5° above ave.); Precip. 1.5" (1" below ave.). 1-3 Cloudy & cold, flurries. 4-7 Clear & warm. 8-10 Rain, locally heavy, mild. 11-15 Clear & mild, then cloudy. 16-18 Cold rain, sleet & snow. 19-21 Scattered rain & snow. 22-26 Snowstorm north, quite cold. 27-31 Some sun, light rain & snow, then very cold.

**Feb. 1982:** Temp. 41.5° (4° above ave.); Precip. 5.5" (3" above ave.). 1-4 Cold; heavy rain; snow & sleet north & mountains. 5-8 Partial clearing, then rain, snow mountains. 9-11 Cold; rain & sleet. 12-15 Mild, rain. 16-18 Sunny & warm. 19-20 Cold wave, rain, snow north & mountains. 21-26 Warm, clear; then light rain. 27-28 Cold wave, light snow north.

**Mar. 1982:** Temp. 47° (2° above ave.); Precip. 4.5" (1" above ave.). 1-5 Rain, mild. 6-10 Partly cloudy; then rain, very warm. 11-14 Cloudy & cool; clear & warm. 15-18 Rain, cold; clear & warm. 19-20 Rain. 21-23 Cold, flurries. 24-26 Clear & warm; cloudy & cold. 27-31 Clear & hot, showers.

**April 1982:** Temp. 54° (2.5° below ave.); Precip. 4" (1" above ave.). 1-6 Rain, cool. 7-9 Cloudy & cool. 10-12 Cold & rainy. 13-16 Light rain, warm. 17-18 Partly cloudy & cold, frost inland. 19-23 Rain, cool. 24-26 Partly cloudy, mild, light rain. 27-29 Clear & hot. 30 Rain, cooler.

**May 1982:** Temp. 66° (0.5° below ave.); Precip. 1" (3" below ave.). 1-4 Rain, turning cold. 5-7 Cloudy & cool; rain. 8-12 Clear to partly cloudy, heat wave. 13-15 Rain, very warm. 16-18 Cold wave, rain. 19-23 Clearing, turning hot. 24-27 Showers, hot. 28-31 Partly cloudy, warm, showers south.

**June 1982:** Temp. 77° (2.5° above ave.); Precip. 4" (0.5" above ave.). 1-4 Hot, few scattered showers; then clearing. 5-7 Rain, heavy south; cool. 8-11 Sunny & warm. 12-15 Partly cloudy, few showers, hot. 16-18 Showers, warm. 19-21 Sunny & hot. 22-24 Rain, cooler. 25-27 Rain, heavy north. 28-30 Partly cloudy, cool.

**July 1982:** Temp. 75.5° (3° below ave.); Precip. 2" (2" below ave.). 1-4 Cloudy & mild, then rain. 5-7 Sunny, hot. 8-12 Rain, then showers & hot. 13-15 Partly cloudy, showers, cooler. 16-18 Rain, hot. 19-21 Clearing & cooler. 22-26 Cool, cloudy, rain south. 27-31 Sunny, showers south; then rain.

**Aug. 1982:** Temp. 79° (2° above ave.); Precip. 4" (1" below ave.). 1-3 Rain, warm. 4-8 Sunny & hot; then rain. 9-10 Partly cloudy, warm. 11-13 Rain, hot. 14-16 Clear & hot. 17-21 Rain, hot. 22-24 Tropical storm, cooler. 25-27 Sunny, hot. 28-31 Turning cooler, thundershowers.

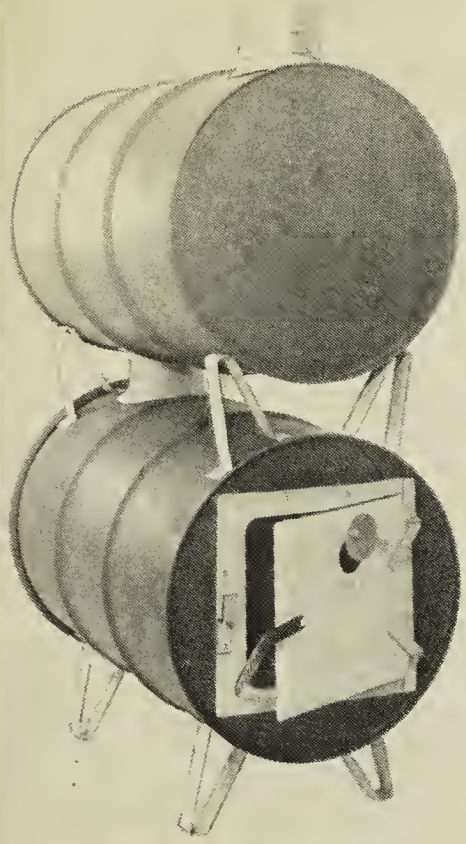
**Sept. 1982:** Temp. 70.5° (Ave.); Precip. 1.5" (1.5" below ave.). 1-2 Cloudy & cool; showers. 3-6 Partly cloudy, warm; few showers north. 7-9 Few showers. 10-13 Heat wave; clearing south. 14-17 Cloudy, cool, then showers. 18-21 Clear & warm. 22-25 Partly cloudy, mild, few showers. 26-30 Clear & warm; then showers north.

**Oct. 1982:** Temp. 59.5° (0.5° below ave.); Precip. 4" (1.5" above ave.). 1-4 Rain, cool, then warm. 5-7 Cloudy, cold & rainy. 8-14 Mostly clear, turning hot. 15-17 Cooler, rain. 18-22 Partly cloudy, cold, frost inland. 23-26 Turning warm & sunny, then showers. 27-30 Cloudy & cool; then rain.



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## 4. PIEDMONT & SOUTHEAST COASTAL

For regional boundaries, see map p. 86.

**SUMMARY:** Winter will be mild, with below-average snowfall in Piedmont and eastern sections, above normal precipitation in most areas. Nov. will start mild, then be warm and cool. A cold wave brings snow after Thanksgiving and into the first week of Dec., with frost to the coast. Rainfall will be greater than usual. Dec. temperatures and precipitation will be average. After a cold snap, Jan. will be mild and drier than normal through mid-month, then cooler with considerable snow in the west. Temperatures will vary through Feb. and March, with warm outweighing cold. Frequent rains should flood rivers during Feb. and early March. April and May should be drier than usual, except for heavy rains the first part of April and end of May. June will be above normal in temperature. July and Aug. will be warm, with frequent showers. Sept. will be warm, with below average rainfall. Oct. should be dry.

**Nov. 1981:** Temp. 56° (5° above ave.); Precip. 3" (0.5" above ave.). 1-2 Cloudy & mild; showers north. 3-8 Clear & warm, then cloudy. 9-12 Rain, warm. 13-17 Sunny, cold snap; then warm. 18-20 Partly cloudy, cool. 21-24 Showers, then heavy rain, very warm. 25-26 Seasonable. 27-30 Light rain, changing to snow, very cold.

**Dec. 1981:** Temp. 43° (0.5° above ave.); Precip. 3.5" (Ave.). 1-2 Very cold, hard frost, light snow. 3-5 Clearing, mild. 6-10 Cloudy & cold; then rain. 11-12 Sunny, cold. 13-14 Rain. 15-19 Clear & mild, turning cloudy. 20-22 Cloudy & cold. 23-25 Few showers, snow mountains, cold. 26-31 Rain, heavy snow mountains.

**Jan. 1982:** Temp. 44.5° (2.5° above ave.); Precip. 2.5" (1" below ave.). 1-3 Cold, light snow, hard frost. 4-8 Clear & mild. 9-11 Rain, mild. 12-15 Clear & mild. 16-18 Rain, turning cold, snow mountains. 19-22 Rain, cold. 23-27 Clearing & milder. 28-29 Rain, snow mountains. 30-31 Sunny, seasonable.

**Feb. 1982:** Temp. 49° (5° above ave.); Precip. 5.5" (1" above ave.). 1-3 Cold; then heavy rain & mild. 4-6 Partly cloudy, cold; then clearing & mild. 7-11 Rain, turning to snow mountains; cold. 12-15 Clearing, then rain, mild. 16-17 Seasonable. 18-20 Rain, mild. 21-23 Clearing, warm. 24-26 Rain. 27-28 Very cold, frost.

**Mar. 1982:** Temp. 55° (4.5° above ave.); Precip. 6" (1.5" above ave.). 1-4 Heavy rain, mild, rivers at flood stage. 5-7 Rain, cold, snow west. 8-10 Showers, mild. 11-14 Sunny, warm. 15-17 Rain, showers south, mild. 18-20 Partly cloudy, few showers. 21-24 Cold wave, frost inland. 25-30 Sunny & warm. 31 Rain west & Piedmont, cooler.

**Apr. 1982:** Temp. 61° (Ave.); Precip. 3.5" (Ave.). 1-6 Rain, mild. 7-9 Cloudy & cold. 10-12 Rain, turning cold. 13-14 Scattered frost, then very warm. 15-16 Showers, colder. 17-20 Sunny & cold, then warming. 21-23 Rain, cool. 24-28 Sunny & warm. 29-30 Rain, mild.

**May 1982:** Temp. 68° (1° below ave.); Precip. 4" (1" above ave.). 1-3 Rain, colder. 4-7 Clear & seasonable; then cold, rain Piedmont, snow mountains. 8-11 Clearing & warm. 12-14 Rain, mild. 15-16 Clear & warm. 17-19 Rain, cold. 20-23 Few showers; clearing & warming. 24-26 Rain. 27-31 Hot, turning seasonable, showers.

**June 1982:** Temp. 81° (5° above ave.); Precip. 3.5" (0.5" below ave.). 1-4 Few showers, hot. 5-8 Thundershowers, cooling. 9-13 Sunny & hot, then showers. 14-16 Showers, hot. 17-20 Thundershowers, warm. 21-23 Showers, hot. 24-26 Sunny & hot. 27-30 Partly cloudy, warm; showers east.

**July 1982:** Temp. 79.5° (1° above ave.); Precip. 8" (3.5" above ave.). 1-2 Showers, hot. 3-5 Thundershowers, hot. 6-9 Rain Piedmont & west, milder. 10-15 Thundershowers, warm. 16-18 Sunny, hot, showers east. 19-23 Clear, then hot. 24-26 Heavy rain, cool. 27-28 Sunny & hot. 29-31 Showers, locally heavy.

**Aug. 1982:** Temp. 79° (1.5° above ave.); Precip. 6" (2" above ave.). 1-4 Showers, hot. 5-8 Sunny & hot, then showers. 9-11 Showers, hot. 12-15 Sunny, hot & humid. 16-22 Rain, seasonable. 23-27 Partly cloudy, hot. 28-31 Showers, then heavy rain east, cooler.

**Sept. 1982:** Temp. 74° (2° above ave.); Precip. 2.5" (1" below ave.). 1-2 Showers, mild. 3-5 Sunny & hot; showers south. 6-9 Few showers, hot. 10-14 Clearing, very hot. 15-18 Partly cloudy, hot, then few showers. 19-21 Showers, turning very hot. 22-24 Rain east, showers west, mild. 25-28 Seasonable. 29-30 Showers, warm.

**Oct. 1982:** Temp. 67.5° (6° above ave.); Precip. 1" (2" below ave.). 1-3 Rain, then sunny & very hot. 4-6 Rain, cool. 7-9 Clearing & warming. 10-15 Clear & hot. 16-17 Light rain, warm. 18-20 Cold, frost inland. 21-24 Clear to partly cloudy, warming. 25-29 Sunny, warm. 30-31 Cloudy, very warm; showers.

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## 5. FLORIDA

For regional boundaries, see map p. 86.

**SUMMARY:** Winter will be warmer and drier than usual, with variability between sections. Nov. will start clear and cool, but temperatures will be above average, except for cold at the end. Dec. should be colder than usual. Jan., Feb., and March will see periods of temperatures above normal, with some cold snaps. Rainfall throughout the winter will be light and scattered, half the average. April and May should be wet, temperatures average. If a tropical storm comes about the third week of June, rainfall in the west will be greater than average; other sections will be deficient. July and Aug. will be cool. Rainfall in July should be heavy south to average north, while Aug. may see a tropical storm about the 15th to 20th cross southern Florida before striking the northwest. Sept. will be cool and dry; Oct. will be warm.

**Nov. 1981:** Temp. 67° (Ave.; 3° above north); Precip. 1" (1" below ave.). 1-4 Clear & cool. 5-7 Cloudy, mild. 8-11 Few showers, warm. 12-15 Showers; mild south, cool north. 16-18 Showers, warm. 19-22 Sunny & hot. 23-27 Showers & cool, then clear & warm. 28-30 Cold wave, hard frost north, light rain.

**Dec. 1981:** Temp. 56.5° (5° below ave.); Precip. 0.5" (2" below ave.; 0.5" above south). 1-3 Cold, frost to Lake Okechobee, clearing. 4-7 Clear & seasonable, then warm. 8-11 Partly cloudy, cool; showers north. 12-14 Sunny & cool, showers. 15-17 Clear & hot. 18-20 Showers, cool. 21-27 Clear, warm days & cold nights. 28-31 Showers, warm.

**Jan. 1982:** Temp. 60.5° (Ave.; 2° above north & south); Precip. 1" (1.5" below ave.). 1-4 Cloudy, showers north, cool; mild south. 5-8 Partial clearing, hot. 9-11 Showers, warm. 12-16 Sunny & hot north, cloudy & mild south. 17-19 Showers north; cool. 20-23 Sunny & mild; rain. 24-26 Clear & cold, frost north. 27-29 Seasonable, showers north. 30-31 Sunny & cool.

**Feb. 1982:** Temp. 65.5° (4° above ave.; 7° above north); Precip. 1.5" (1.5" below ave.). 1-3 Clear & cold, then rain & warm. 4-5 Sunny & seasonable. 6-13 Hot, varying rain & sun. 14-16 Partly cloudy & hot; showers north. 17-19 Warm, then hot & showers. 20-24 Sunny & very warm. 25-28 Few showers, cold, frost north.

**Mar. 1982:** Temp. 69° (3° above ave.; 5° above north); Precip. 1.5" (1.5" below ave.). 1-4 Sunny & hot central, cloudy south, rain north. 5-7 Showers north, cooler. 8-10 Clear & hot. 11-13 Few showers, sunny & warm. 14-18 Clear & hot, then showers & seasonable. 19-22 Sunny & warm; then cool. 23-25 Few showers, sunny, cool. 26-30 Clear & hot. 31 Rain north, showers south.

**April 1982:** Temp. 73° (1° above ave.); Precip. 3.5" (1" above ave.). 1-5 Partly cloudy, showers, warm. 6-10 Sunny & hot. 11-13 Rain, very cool. 14-16 Partial clear-

ing & warm. 17-20 Cloudy & cool, then clear & hot. 21-23 Rain, cool. 24-27 Seasonable, then showers central & south. 28-30 Heavy rain.

**May 1982:** Temp. 76° (1.5° below ave.); Precip. 6" (3" above ave., 0.5" above south). 1-3 Rain central & north, showers south, warm. 4-6 Clear & seasonable. 7-10 Partly cloudy & cooler. 11-14 Heavy rain, warm. 15-18 Sunny & warm. 19-23 Showers & mild, then seasonable. 24-25 Partly cloudy, showers south. 26-28 Clear & hot. 29-31 Rain, warm.

**June 1982:** Temp. 81° (Ave.; 3° above north); Precip. 10" (3" above ave.; 5" below south). 1-5 Showers, then rain, seasonable. 6-8 Sunny & warm central & north, partly cloudy & mild south. 9-12 Showers north, sunny south. 13-16 Sunny & hot; cloudy south. 17-20 Rain, tropical storm Gulf. 21-26 Partly cloudy, showers, hot north. 27-30 Showers north, hot.

**July 1982:** Temp. 81.5° (1° below ave.); Precip. 10" (1" above ave.; 4" above south). 1-7 Rain, hot. 8-12 Showers. 13-16 Rain, cooling. 17-21 Sunny & hot. 22-24 Partly cloudy, few showers. 25-28 Rain, hot. 29-31 Showers, seasonable.

**Aug. 1982:** Temp. 81.5° (1° below ave.); Precip. 8" (1" above ave.). 1-5 Hot, showers. 6-10 Rain, cool. 11-14 Sunny & warm, showers south. 15-19 Possible tropical storm. 20-23 Sunny, hot. 24-26 Showers, hot north. 27-31 Rain, turning cool.

**Sept. 1982:** Temp. 80° (1° below ave.); Precip. 4" (3" below ave.). 1-4 Showers, mild. 5-8 Warm; thundershowers. 9-12 Sunny, hot; showers south. 13-15 Few showers, very hot. 16-20 Mild, showers. 21-23 Clear & hot. 24-30 Thundershowers, mild; then warm.

**Oct. 1982:** Temp. 75.5° (0.5° above ave.); Precip. 3.5" (0.5" below ave.). 1-4 Showers, hot. 5-8 Milder. 9-13 Clear & warm. 14-17 Showers, warm. 18-21 Thundershowers south. 22-24 Rain, cool. 25-27 Clear & hot; showers south. 28-31 Sunny, hot.



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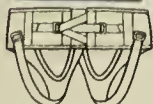


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## 6. UPSTATE N.Y.-TORONTO & MONTREAL

*For regional boundaries, see map p. 86.*

**SUMMARY:** *Winter will be milder and wetter than average, but variable. Late fall and early winter should be mild, with heavy early snows; late winter colder, wetter, and snowier than usual. Total snowfall will be less than average. Nov. should see cold with heavy snows after Thanksgiving into early Dec. Cold and warm spells will extend through Jan. and the first half of Feb., except for a thaw the second week of Jan. Precipitation should be frequent but light through Dec. and Jan., snowfall below average, heavier north and mountains. Feb. will be warm and wet, while March and April will have long stretches of cold. The cool will extend through the first week of May. Precipitation will be light from May through July; drought conditions may exist. Aug. will be sunny and warm. Sept. and Oct. will alternate between very warm and very cool. Sept. will be mostly dry; Oct. will be wet.*

**Nov. 1981:** Temp. 40.5° (1° above ave.; 3.5° above west); Precip. 2.5" (0.5" below ave.). 1-2 Light rain east, sunny west; mild. 3-8 Sunny & cold, then warm. 9-13 Rain, very warm. 14-16 Sunny, cold; then warming. 17-19 Rain west, sprinkles east, turning cold. 20-23 Rain; becoming warm. 24-26 Sunny & very warm. 27-30 Snowstorm, very cold.

**Dec. 1981:** Temp. 29° (3° above ave.); Precip. 3" (Ave.; 1" below west). 1-4 Cold then seasonable, snow. 5-7 Flurries, cold. 8-11 Rain, mild. 12-16 Rain, light west; mild. 17-19 Snow, colder. 20-22 Cloudy, light snow. 23-26 Cloudy, cold, then snow. 27-31 Snow, mild.

**Jan. 1982:** Temp. 21.5° (Ave.; 2° below north, 1° above west); Precip. 1" (1" below ave.). 1-4 Cold, flurries, then snow. 5-8 Sunny & mild, then cold, light snow. 9-10 Mild, rain east, snow mountains, 11-13 Partly cloudy & mild, thaw. 14-18 Cold wave, snow. 19-23 Seasonable, then very cold, light snow. 24-26 Clearing & milder. 27-29 Snow. 30-31 Very cold snap.

**Feb. 1982:** Temp. 24.5° (1° above ave.); Precip. 4" (2" above ave.). 1-2 Clear & cold. 3-4 Heavy snowstorm, cold. 5-8 Milder, snow & freezing rain. 9-11 Clearing & cold, then rain south, snow north. 12-15 Mild, then rain & snow. 16-18 Clear, turning very warm. 19-21 Rain, changing to snow & colder. 22-24 Very warm, rain. 25-28 Cold wave, snow.

**Mar. 1982:** Temp. 29.5° (4° below ave.; 1° below west); Precip. 3" (0.5" above ave.). 1-5 Mild, rain, heavy snow mountains & north. 6-8 Sunny & cold, then mild. 9-12 Rain, changing to snow & cold. 13-15 Cold wave, snow. 16-17 Heavy snowstorm, cold. 18-26 Cold, light snow. 27-28 Clear, mild. 29-31 Rain, mild.

**April 1982:** Temp. 42° (5° below ave.); Precip. 4" (1" above ave.). 1-2 Cloudy & cold, rain & sleet east. 3-5 Rain, seasonable. 6-8 Cold wave, snowstorm. 9-12 Some sun, cool, rain & snow mixed. 13-19 Cold, rain, snow mountains. 20-24 Partial clear-

ing, then light rain, cool. 25-28 Variable clouds & seasonable, then rain. 29-30 Clear & very warm.

**May 1982:** Temp. 59° (1° above ave.); Precip. 1" (2" below ave.). 1-2 Light rain, cool. 3-9 Cold, light frost, partly cloudy. 10-12 Clear & warm. 13-15 Rain, warm. 16-18 Cloudy & cold. 19-21 Sunny & pleasant. 22-24 Clear, hot, showers north. 25-28 Rain, cool. 29-31 Sunny & warm.

**June 1982:** Temp. 68° (0.5° above ave.). Precip. 2.5" (0.5" below ave.). 1-2 Rain, milder. 3-5 Sunny, warm, then light rain. 6-10 Warm, sunny, some light rain. 11-14 Hot, few showers. 15-21 Rain, cool. 22-25 Sunny & seasonable. 26-28 Rain, cool. 29-30 Cloudy & cool.

**July 1982:** Temp. 71.5° (0.5° below ave.); Precip. 2.5" (0.5" below ave.; 2" below west). 1-2 Clear & hot. 3-5 Rain, much cooler. 6-9 Clear, turning very warm; then cloudy. 10-15 Rain, seasonable. 16-18 Rain, cool. 19-21 Partly cloudy, cool; few showers north. 22-26 Clear & warm. 27-31 Clear & hot, then rain, heavy mountains.

**Aug. 1982:** Temp. 74° (4.5° above ave.); Precip. 3.5" (0.5" above ave.; 1.5" above west & north). 1-4 Rain, warm. 5-8 Showers west, then rain over region. 9-11 Clear & hot. 12-16 Cloudy, warm, rain north. 17-18 Rain, warm. 19-22 Sunny & hot. 23-25 Light rain, cooler. 26-31 Hot; then seasonable & rain.

**Sept. 1982:** Temp. 62.5° (0.5° above ave.). Precip. 4" (1.5" above ave.). 1-4 Sunny, warm; showers west. 5-7 Hot. 8-11 Rain, cloudy & cool. 12-15 Rain, cool. 16-20 Clearing & turning hot. 21-25 Cloudy & light rain, cool, frost. 26-28 Sunny & pleasantly warm. 29-30 Rain, cold snap.

**Oct. 1982:** Temp. 49.5° (2° below ave.; 1° above west); Precip. 4" (1.5" above ave.). 1-5 Alternately cold & warm, some rain. 6-10 Cloudy & cold, light rain. 11-12 Sunny, mild. 13-18 Rain, very warm; then cool. 19-24 Cold, frost, mostly sunny. 25-27 Rain, changing to snow. 28-29 Sunny, very cold. 30-31 Rain, mild.



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## 7. GREATER OHIO VALLEY

*For regional boundaries, see map p. 86.*

**SUMMARY:** *Winter should be milder than usual, wetter than normal in the west but drier in the east, and above normal snowfall except during Dec. and March. Nov. will be mild through Thanksgiving; snow and cold will close the month. Dec. will be mild and dry, with about half the normal snowfall, most between Christmas and New Year's Day. After a cold snap, a thaw will stay until mid-Jan., then cold and snow. Feb. will be wet and snowy, with storms. Warm spells will come in Feb. and March, with March snowfall below average. Rains in mid-March may cause flooding. Spring may be delayed by a cool, wet April and cold through mid-May; then May should be sunny and warm and relatively dry. June should be warm and rainy. July and Aug. should be average. Drought in some sections will be aggravated through Sept. and Oct. by warm, dry spells. The first killing frost is expected about Oct. 19-22.*

**Nov. 1981:** Temp. 47.5° (4° above ave.); Precip. 4" (1" above ave.; ave. east). 1-3 Sunny & cool. 4-7 Indian Summer. 8-10 Rain; clear & warm. 11-13 Rain, cold. 14-16 Clearing, warm. 17-18 Rain, cold. 19-21 Partly cloudy, seasonable. 22-24 Rain, milder. 25-26 Clear & mild. 27-30 Snowstorm, 10-15" north & east, cold.

**Dec. 1981:** Temp. 36° (2° above ave.); Precip. 1.5" (1.5" below ave.). 1-2 Light snow, cold. 3-5 Sunny & seasonable. 6-8 Rain, mild. 9-13 Rain, milder. 14-16 Sunny & mild, rain east. 17-19 Cloudy & cold. 20-21 Rain & sleet, cold. 22-25 Partly cloudy, seasonable. 26-31 Rain & snow, cold.

**Jan. 1982:** Temp. 36° (5° above ave.); Precip. 1.5" (1.5" below ave.; 1" above west). 1-3 Light snow, very cold. 4-7 Sunny, turning warm. 8-10 Rainy, mild. 11-14 Sunny & warm, then light rain. 15-16 Cloudy, turning cold. 17-18 Heavy snowstorm north, rain south. 19-21 Light snow. 22-24 Snow, cold. 25-27 Mild spell, clear. 28-31 Very cold, light snow.

**Feb. 1982:** Temp. 36° (2.5° above ave.; 4° above east); Precip. 5.5" (2.5" above ave.). 1-4 Heavy rain, changing to snow & sleet. 5-8 Mild, then cold, rain turning to heavy snow. 9-11 Sunny, mild; then heavy rain. 12-15 Clear & warm, then rain. 16-18 Sunny; cold, then warm. 19-22 Rain changing to light snow. 23-25 Warm, rain. 26-28 Cold wave, light snow.

**Mar. 1982:** Temp. 46° (4° above ave.); Precip. 6.5" (2.5" above ave.; 1" below east). 1-2 Snow, cold. 3-4 Mild, rain. 5-7 Clear, cold. 8-10 Rain, heavy south & west, mild. 11-14 Sunny, seasonable; mild. 15-19 Heavy rain, flooding; clearing. 20-22 Cold wave, light snow. 23-26 Seasonable. 27-29 Clear & warm. 30-31 Rain, cold.

**Apr. 1982:** Temp. 50° (4° below ave.); Precip. 8" (4" above ave.; ave. east). 1-4 Showers, cold. 5-8 Light rain; partial clearing, cold. 9-10 Heavy rain, cold. 11-13 Showers, cold. 14-15 Rain, mild. 16-18 Sunny, hard frost. 19-22 Heavy rain, turn-

ing cold. 23-25 Showers; rain, cold. 26-29 Clear & warm. 30 Light rain, mild.

**May 1982:** Temp. 65.5° (2.5° above ave.); Precip. 2.5" (1.5" below ave.). 1-3 Rain, cold. 4-7 Cold, frost north; rain east. 8-11 Clear & hot. 12-14 Rain, mild. 15-18 Partly sunny, cold; rain west. 19-23 Showers; clearing & warm. 24-26 Rain, warm. 27-29 Clear, hot. 30-31 Rain, cooling.

**June 1982:** Temp. 74.5 (2.5° above ave.; 3.5 above east); Precip. 5" (1" above ave.; 0.5" below east). 1-2 Rain, mild. 3-4 Sunny & warm. 5-7 Rain, mild. 8-11 Clear, turning hot. 12-14 Heavy rain, warm. 15-18 Showers, very cool. 19-21 Clearing & hot. 22-24 Heavy rain, cool. 25-27 Rain, warm. 28-31 Sunny, warm.

**July 1982:** Temp. 75.5° (Ave.); Precip. 3.5" (0.5" below ave.; 0.5" above east). 1-4 Sunny & warm; rain, cooler. 5-7 Partial clearing & warming. 8-13 Showers, hot. 14-16 Sunny, warm. 17-20 Cloudy, cool; showers west. 21-23 Showers north, cool. 24-27 Cloudy & cool. 28-31 Rain, warm.

**Aug. 1982:** Temp. 74.5° (Ave.; 3° above east); Precip. 2.5" (0.5" below ave.). 1-3 Rain, cool. 4-8 Seasonable, then showers. 9-11 Sunny & warm. 12-15 Showers, heavy north, then clearing & warm. 16-18 Rain, warm. 19-21 Partly cloudy & warm. 22-24 Showers, cooler. 25-27 Sprinkles, cool. 28-31 Sunny & seasonable.

**Sept. 1982:** Temp. 72° (4° above ave.); Precip. 0.5" (2.5" below ave.; 1" below east). 1-6 Clear & warm. 7-9 Showers, warm. 10-12 Clear, very hot. 13-15 Showers, cool. 16-20 Clear and hot. 21-25 Sunny & warm, sprinkles. 26-28 Clear, hot. 29-30 Partly cloudy, mild; showers east.

**Oct. 1982:** Temp. 61° (4° above ave.); Precip. 2.5" (0.5" above ave.). 1-2 Clear & warm. 3-5 Rain & very cool. 6-8 Cold; warm & clear. 9-12 Warm, showers north. 13-15 Light rain, cooler. 16-18 Variable clouds, cool. 19-22 Cold snap, hard frost. 23-26 Warm spell, sprinkles north. 27-31 Cloudy & cold; heavy rain & mild.

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## 8. DEEP SOUTH

For regional boundaries, see map p. 86.

**SUMMARY:** Winter should be mild, particularly the latter half, with less snow than usual but with hard frosts. Nov. will be warm except for a cold snap just before mid-month and cold at the end, with heavy snows and hard frosts. Warm and cold will alternate through mid-Dec. The rest of Dec. should be average in temperature, with below-normal precipitation. After a cold wave, Jan. will be warm with rains, then seasonable. Feb. and March will be variable, more warm than cold. Feb. will be wet, but little snow; March will have sunny, dry periods between downpours. Spring should be cool, rainfall irregularly distributed. June and July will be warm. June will be wet; July rainfall will be mostly afternoon thundershowers. Aug. will be near normal except for light rainfall that will continue in Sept., resulting in some drought. Sept. and Oct. will be warm. Most of Oct. will be dry.

**Nov. 1981:** Temp. 56.5° (1.5° above ave.; 3° above north); Precip. 2.5" (1.5" below ave.). 1-6 Sunny, turning mild. 7-10 Rain, clearing; mild. 11-12 Rain, turning cold. 13-14 Sunny, cold. 15-19 Clear & warm; cloudy, cold. 20-23 Rain, warm. 24-26 Warm days, cold nights. 27-28 Snow, sleet & rain; cold. 29-30 Cloudy, freeze.

**Dec. 1981:** Temp. 47.5° (1.5° below ave.; 1° above north); Precip. 3" (2" below ave.). 1-5 Cold nights, frost; warming. 6-8 Rain, mild. 9-11 Sunny, frost. 12-14 Rain, warm. 15-17 Clear & warm. 18-21 Showers, cold. 22-24 Partly sunny & seasonable. 25-31 Rain, mild; then cold.

**Jan. 1982:** Temp. 50.5° (3.5° above ave.; 5° above north); Precip. 5" (0.5" above ave.; 1.5" above north). 1-3 Cold, rain & snow. 4-7 Clearing, warm. 8-9 Rain, cool. 10-13 Warm, clear; cloudy. 14-15 Rain, warm. 16-19 Heavy rain, cold. 20-22 Rain, cold. 23-25 Clear & warm. 26-28 Rain, cold. 29-31 Partly cloudy, seasonable.

**Feb. 1982:** Temp. 54° (4° above ave.; 2.5° above north & east); Precip. 7" (2.5" above ave.; 6" above north). 1-3 Heavy rain, snow northwest. 4-7 Clear, then rain, snow; mild. 8-9 Cloudy & cold. 10-11 Rain, warm. 12-15 Sunny & warm, then rain, cold. 16-17 Clearing & warmer. 18-19 Heavy rain, mild. 20-24 Seasonable, then heavy rain, warm. 25-28 Cold wave, frost.

**Mar. 1982:** Temp. 61° (5° above ave.); Precip. 6" (0.5" above ave.; 1" below north; 4" above east). 1-4 Heavy rain, cold. 5-7 Cloudy & cold, showers. 8-10 Showers; hot. 11-13 Sunny, seasonable; then warm. 14-16 Showers, warm. 17-20 Partly cloudy, mild. 21-23 Cloudy, cold. 24-28 Sunny & warm. 29-31 Rain, cooler.

**Apr. 1982:** Temp. 62.5° (3° below ave.); Precip. 4" (0.5" below ave.; 1" below east, 3" above north). 1-3 Rain, cold. 4-7 Sunny & warm, rain northeast. 8-10 Rain, cold. 11-14 Cold, frost north then clear & warm. 15-16 Rain, cold. 17-19 Sunny & warm. 20-21 Heavy rain, cold. 22-25 Cold, showers. 26-30 Warm, sunny; then rain.

**May 1982:** Temp. 70.5° (2° below ave., 0.5° below north); Precip. 5" (0.5" above ave.). 1-3 Rain, cool. 4-10 Partly cloudy, mild. 11-13 Rain, warm. 14-17 Clear & warm, then rain, cool. 18-21 Cloudy & cool; clearing & warm. 22-26 Rain, cool, then seasonable. 27-28 Showers. 29-31 Rain, mild.

**June 1982:** Temp. 80.5° (1° above ave.); Precip. 5" (1.5" above ave.; ave. north). 1-4 Cloudy, cool, showers. 5-9 Rain, warm. 10-11 Partly cloudy, seasonable. 12-14 Showers, hot. 15-17 Showers, cooler. 18-20 Sunny, seasonable. 21-23 Rain, hot. 24-27 Sunny & hot south, showers north. 28-30 Showers, hot.

**July 1982:** Temp. 84° (2° above ave.; 0.5° above north); Precip. 1" (3" below ave.; 0.5" above north & east). 1-4 Partly cloudy, showers, mild. 5-7 Thundershowers, seasonable. 8-11 Sunny & hot. 12-14 Thundershowers, cooler. 15-19 Clear & hot, 100's south. 20-23 Showers, hot. 24-26 Showers. 27-31 Thundershowers, hot.

**Aug. 1982:** Temp. 81.5° (0.5° above ave.; 5° below north); Precip. 3" (0.5" below ave.; 1" below north). 1-3 Thundershowers, cool. 4-6 Sunny, hot. 7-11 Showers, mild; clear & hot. 12-14 Showers, hot. 15-18 Seasonable. 19-21 Showers. 22-24 Thundershowers, mild north. 25-31 Seasonable, showers north.

**Sept. 1982:** Temp. 79° (3° above ave.; 6° above north; Precip. 0.5" (2.5" below ave.). 1-4 Sunny & hot, showers central & northeast. 5-7 Sunny, hot. 8-10 Partly cloudy, hot; showers. 11-15 Clear & hot, then few showers. 16-18 Sunny, hot. 19-22 Showers, hot. 23-30 Clearing & seasonable, hot north, showers south.

**Oct. 1982:** Temp. 69° (3° above ave.; 5° above north); Precip. 1.5" (0.5" below ave.; 0.5" above north). 1-2 Sunny & hot. 3-5 Rain, cool. 6-9 Clear, warm. 10-12 Cloudy, warm, showers. 13-15 Showers, cooler. 16-20 Partly cloudy & cool. 21-28 Sunny, warm. 29-31 Showers, warm.



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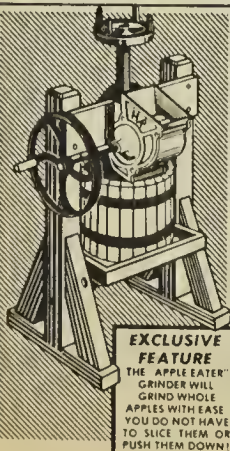
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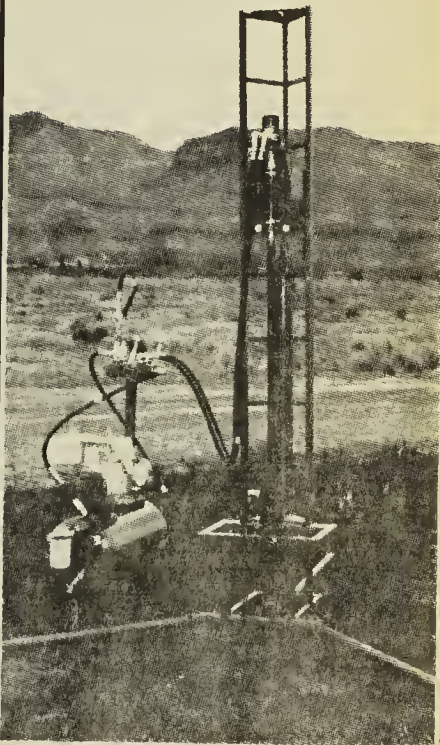
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## 9. CHICAGO & SOUTHERN GREAT LAKES

*For regional boundaries, see map p. 86.*

**SUMMARY:** *Winter should be mild, with less than usual precipitation the first half and greater the second, greater than normal snow. Nov. should be mild through Thanksgiving, sunnier and drier than usual. A cold wave, with snows near southern Lake Michigan, should close the month and go into Dec. Dec. should be mild, then average. Snowfall central and north should be above average. A thaw is expected until mid-Jan., then seasonable weather and a cold wave with ample snows. Feb. will be variable, wetter and snowier than usual. March will see a sunny, warm period the last week. April will be cool and wet, snowy in northern sections. May will be dry except west-central areas, and warm, despite cool spells. The first half of June will be warm and wet, temperatures average through July and Aug. Rainfall will be deficient; by late Sept. or early Oct. drought will exist. Sept. and half of Oct. will be warm.*

**Nov. 1981:** Temp. 43.5° (3.5° above ave.); Precip. 1" (1" below ave.). 1-4 Partly cloudy, cold. 5-7 Sunny, warm. 8-10 Rain west, mild. 11-12 Rain, colder. 13-15 Sunny & cold, frost; then mild. 16-18 Partly cloudy, mild. 19-21 Cloudy & cold, then milder. 22-23 Rain, seasonable. 24-26 Clear & mild. 27-30 Snowstorm, cold.

**Dec. 1981:** Temp. 30.5° (2° above ave.); Precip. 1.5" (1" below ave.). 1-2 Flurries, cold. 3-5 Partly cloudy, seasonable. 6-8 Rain, mild. 9-13 Rain, sleet & snow. 14-16 Cloudy, cold, mild nights. 17-21 Sunny & seasonable, then light snow east. 22-25 Cloudy, cold. 26-29 Light snow, seasonable. 30-31 Snowstorm east, cold.

**Jan. 1982:** Temp. 29° (5° above ave.; 2° above east); Precip. 1.5" (0.5" below ave.). 1-4 Cold, snow. 5-7 Clear, milder. 8-9 Rain, warm; snow north. 10-12 Sunny & mild. 13-16 Mild, rain; seasonable. 17-22 Cold, flurries. 23-26 Partial clearing & milder, flurries. 27-31 Snow, cold.

**Feb. 1982:** Temp. 28° (1° above ave.); Precip. 2.5" (1" above ave.; 3" above east). 1-3 Heavy snow & sleet & freezing rain, blizzard Chicago, cold. 4-6 Mild, snow north, rain south. 7-9 Cold. 10-14 Seasonable, rain & snow. 15-19 Clear & cold, then mild & partly cloudy. 20-22 Snow, cold; then mild. 23-25 Rain east, mild; snow & cold. 26-28 Cold, light snow.

**Mar. 1982:** Temp. 38.5° (1.5° above ave.; 1° below east); Precip. 3" (0.5" above ave.). 1-3 Cold, snow. 4-7 Rain, clearing & warming. 8-10 Mild; rain, snow north. 11-14 Cloudy & cold east; some sun, mild then cold west. 15-16 Rain south, snow north, ice central. 17-18 Sunny, seasonable. 19-22 Rain, snow, cold. 23-28 Sunny, cold; then very warm. 29-31 Rain, mild.

**Apr. 1982:** Temp. 45° (5° below ave.); Precip. 3.5" (Ave.; 1" above east). 1-5 Cold, rain & snow. 6-8 Partly sunny, cold. 9-12 Snow north, rain & snow south, cold. 13-16 Heavy rain, cold. 17-20 Clearing, then rain, cold. 21-26 Rain, milder. 27-29 Clear & warm. 30 Showers, warm.

**May 1982:** Temp. 60.5° (0.5° above ave.; 2° above east); Precip. 3.5" (Ave.; 2" below east). 1-3 Cloudy, turning cold; showers. 4-7 Cold, clear to partly cloudy, few showers east. 8-10 Clear & warm. 11-13 Rain, warm. 14-17 Partly cloudy, cool. 18-20 Light rain, seasonable. 21-23 Clearing & warming. 24-26 Rain, warm. 27-29 Clear & warm. 30-31 Rain, warm.

**June 1982:** Temp. 71° (0.5° above ave.; 2° above east); Precip. 5" (1" above ave.). 1-4 Rain, cool; warm. 5-7 Rain, warm. 8-10 Sunny, hot. 11-15 Rain, hot; then cool. 16-19 Showers, cool. 20-21 Clear & hot. 22-24 Showers, warm. 25-27 Rain. 28-30 Sunny & seasonable, then rain.

**July 1982:** Temp. 74.5° (Ave.; 1.5° above east); Precip. 2.5" (1.5" below ave.). 1-3 Rain, warm east. 4-7 Partly cloudy, warm. 8-12 Few showers, hot. 13-16 Sunny, cool; then hot. 17-19 Cloudy & cool. 20-22 Showers, cool. 23-26 Clearing & warming. 27-31 Showers, warm.

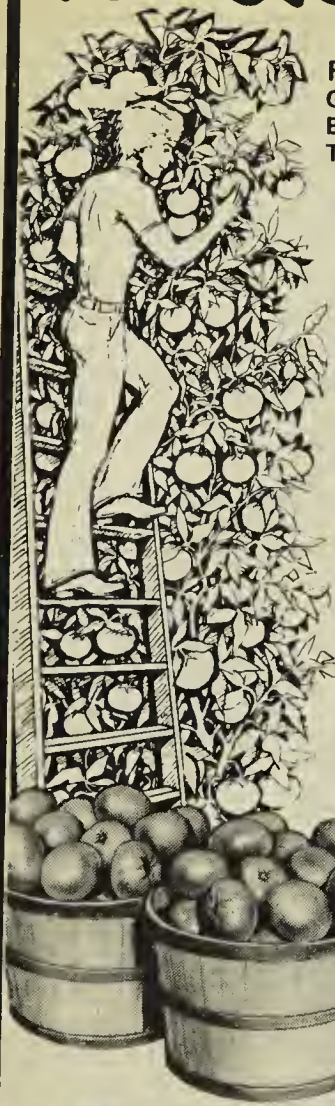
**Aug. 1982:** Temp. 72° (1.5° below ave.; 1.5° above east); Precip. 2" (1" below ave.). 1-2 Showers, cool. 3-5 Sunny & hot. 6-7 Showers, seasonable. 8-10 Sunny & warm. 11-13 Rain, cool. 14-17 Some clearing, then rain, warm. 18-22 Clear to cloudy, mild. 23-25 Rain, cool. 26-28 Rain. 29-31 Seasonable; cool & cloudy west.

**Sept. 1982:** Temp. 70° (4° above ave.; 3° above east); Precip. 0.5" (2.5" below ave.; ave. east). 1-3 Sprinkles, warm. 4-6 Sunny & hot east, partly cloudy west. 7-8 Rain east, cooler. 9-12 Cloudy & cool; clear & hot. 13-14 Cloudy & cool, showers north. 15-16 Rain, cool. 17-20 Clear, heat wave. 21-25 Cloudy & cool. 26-28 Sunny, warm; sprinkles north. 29-30 Showers, cool.

**Oct. 1982:** Temp. 56.5° (1° above ave.); Precip. 2" (0.5" below ave.). 1-3 Rain, cold; then warm. 4-6 Partly cloudy, mild. 7-11 Sunny, warm, few showers. 12-14 Rain, warm. 15-18 Turning cold, frost; then rain. 19-23 Sunny, cold; then warm. 24-28 Cloudy, showers, turning cold. 29-31 Rain, warm.



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# 10. NORTHERN GREAT PLAINS-GREAT LAKES

*For regional boundaries, see map p. 86.*

**SUMMARY:** *Winter will be warmer and drier than usual, with variable temperatures. Northern and eastern sections will have greater-than-average snowfall; southern and western sections less. Nov. will start mild and wet, then turn cold. Dec. will be warm, with more snow than usual north-central and east. Jan. will be milder, wetter and snowier than usual, except in the west. Feb. and most of March will see cold waves, with snowstorms. A warm end of March may result in flooding. Most of April should be cool and wet. May will be warm, wet in the east, dry in the west. Hot spells will continue into mid-June; rainfall will be above average except in the west. July will be warm, rainfall average. Aug. through mid-Sept. will be warm, have ample rains north and east, but be dry south and west. Oct. will be cool.*

**Nov. 1981:** Temp. 32.5° (0.5° above ave.); Precip. 1" (Ave.). 1-4 Clear & mild. 5-7 Rain central & west; sunny east. 8-12 Rain central & east, cold; snow west. 13-16 Mild, rain, heavy snow north. 17-19 Cold, snow east; sunny west. 20-23 Flurries north, then sunny & mild. 24-26 Heavy snow north, cold. 27-30 Cold, snow.

**Dec. 1981:** Temp. 22° (4° above ave., 8° above west); Precip. 0.5" (0.5" below ave.). 1-5 Clearing, mild; then cloudy, cold. 6-8 Rain & snow, mild. 9-11 Rain, snow north, mild. 12-17 Cloudy, light snow. 18-21 Sunny & mild; light snow north. 22-25 Cloudy & seasonable, flurries east; sunny & mild west. 26-28 Snow. 29-31 Snow, mixed with rain south, mild.

**Jan. 1982:** Temp. 17° (5° above ave.; 10° above north); Precip. 1" (0.5" above ave.). 1-4 Very cold, snow. 5-7 Mild, sunny to partly cloudy. 8-12 Snow north, rain south; then clearing, mild. 13-14 Rain, very mild. 15-21 Flurries, seasonable. 22-25 Cloudy & cold, then snow & mild. 26-27 Cloudy, colder. 28-31 Light snow, mild then cold east; mild, flurries west.

**Feb. 1982:** Temp. 10° (6° below ave.); Precip. 1" (Ave.). 1-3 Mild, sunny west, snow east. 4-6 Snowstorm, cold. 7-9 Cold, then clearing & mild. 10-14 Blizzard & severe cold west, heavy snow central & east. 15-17 Chinook, sunny & mild. 18-20 Light snow, cold. 21-22 Sunny, mild, chinook. 23-28 Severe cold, light snow.

**Mar. 1982:** Temp. 28.5° (0.5° above ave.; 5° above west); Precip. 0.5" (1" below ave.). 1-2 Clear; cold east, mild west. 3-5 Partly sunny & cold; snow south-central. 6-10 Clear, mild; then snow, cold. 11-16 Seasonable west; light snow. 17-19 Snowstorm, turning cold. 20-22 Very cold, cloudy then clearing. 23-27 Clear & warm. 28-31 Few sprinkles, turning cold.

**April 1982:** Temp. 42° (2.5° below ave.; 2° above west); Precip. 2" (Ave.; 1.5" below west). 1-5 Sunny, cold; then warming, sprinkles. 6-8 Partly cloudy, mild; showers west. 9-12 Snowstorm, cold. 13-16 Cold, sprinkles. 17-20 Seasonable, then cold;

rain east. 21-23 Rain & snow. 24-26 Rain, warming. 27-30 Clear & warm, then rain.

**May 1982:** Temp. 63° (6° above ave.); Precip. 3.5" (Ave.). 1-5 Clear & warm; showers east. 6-7 Showers, milder. 8-12 Clear & hot, then rain, warm. 13-17 Partly cloudy, warm. 18-19 Clear & hot west; rain east, seasonable. 20-22 Sunny & warmer. 23-25 Warm, rain. 26-28 Seasonable east, rain west. 29-31 Rain, warm.

**June 1982:** Temp. 70° (3.5° above ave.); Precip. 5" (1" above ave.; 1" below west). 1-3 Clearing & warm. 4-7 Rain, hot; then mild. 8-10 Sunny & warm. 11-15 Rain, cool. 16-17 Cloudy & cool. 18-26 Rain, some sun; warm. 27-30 Sunny & hot, then showers.

**July 1982:** Temp. 74° (3° above ave.; 5° above west); Precip. 3" (0.5" below ave.). 1-3 Showers, warm. 4-6 Sunny & hot. 7-11 Thundershowers, hot. 12-15 Showers east, then clearing; clear & hot west. 16-19 Partly cloudy, seasonable, showers west. 20-22 Thundershowers, cool. 23-26 Clear & warm, then showers. 27-31 Hot, showers.

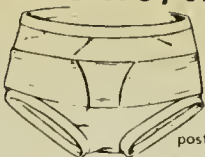
**Aug. 1982:** Temp. 70° (1° above ave.); Precip. 3.5" (0.5" above ave.; 1.5" below west). 1-4 Clearing, hot. 5-7 Rain, warm. 8-10 Clear & hot. 11-16 Rain, cool. 17-21 Clear, hot, some days + 100° west. 22-25 Rain, cooler. 26-28 Rain, cool. 29-31 Sunny & warm, few showers west.

**Sept. 1982:** Temp. 66° (7° above ave.; 9° above west); Precip. 2" (0.5" below ave.). 1-3 Warm, few showers. 4-6 Sunny, warm. 7-9 Thundershowers, then clearing. 10-12 Showers; warm then cooling. 13-16 Rain east, cool. 17-19 Heat wave, sunny. 20-25 Sunny, warm. 26-30 Seasonable, few showers, then frost.

**Oct. 1982:** Temp. 47.5° (1.5° below ave.; 0.5° above west); Precip. 1.5" (Ave.). 1-2 Rain; colder. 3-6 Cloudy & cold, frost; clear & warm. 7-9 Rain, cooler. 10-12 Clear & warm, cooling. 13-17 Rain, then snow. 18-21 Partly sunny, cold. 22-24 Clear & warm. 25-28 Sunny & warm west; mild east. 29-31 Rain, snow northeast, cold.

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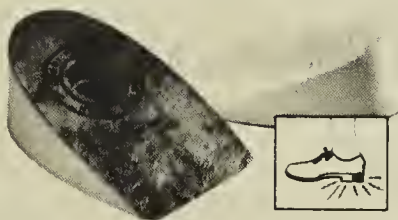
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# 11. CENTRAL GREAT PLAINS

*For regional boundaries, see map p. 86.*

**SUMMARY:** Winter will be milder and wetter than usual, with above-average snowfall, particularly late. Nov. will be warm, cold the second week and after Thanksgiving. Dec. will be mild to average, cold and possible blizzard at its close, drier and sunnier than usual. Jan. will be mild, snowfall heavier than usual after mid-month. After a mild start, Feb. will have cold and storms. After early cold and storm, March will be mild, with sun and warmth late. Spring will be delayed by a cold, wet April, but May will be warm with little rainfall. Warm, wet weather should come through June, with southwest sections dry. July will be hot and humid, western and southern sections very dry. Aug. should be moderate, with rains; drought from late Aug. through Sept. will see record-breaking heat. Oct. will be warm and dry.

**Nov. 1981:** Temp. 48° (3° above ave.; 1° above west); Precip. 4" (1.5" above ave.; 0.5" above west & north). 1-5 Sunny & warm. 6-9 Heavy rain, changing to snow. 10-12 Cold, rain & snow. 13-15 Clear & mild. 16-20 Light rain east, then sunny & mild. 21-22 Showers, mild. 23-25 Clear, mild. 26-30 Severe cold, snow.

**Dec. 1981:** Temp. 37° (2.5° above ave.; 4.5° above west); Precip. 2" (Ave.). 1-5 Clear, mild. 6-8 Rain south, snow north; mild. 9-12 Partly cloudy, mild, then rain & snow. 13-15 Cloudy & seasonable, rain west. 16-19 Sunny & mild. 20-25 Light rain, cold. 26-29 Snow north, rain south; warm. 30-31 Cold wave, blizzard north.

**Jan. 1982:** Temp. 39° (8° above ave.; 10° above north); Precip. 2" (Ave.). 1-4 Cold, cloudy. 5-7 Sunny & mild. 8-9 Rain, mild. 10-13 Sunny & warm, rain turning to snow. 14-16 Cloudy & cold. 17-22 Snow, turning colder. 23-26 Clearing, very mild. 27-28 Cold, snow. 29-31 Sunny & mild.

**Feb. 1982:** Temp. 35° (Ave.; 4° below west); Precip. 1" (Ave.; 3" above east). 1-4 Cloudy & mild, then rain & snow. 5-7 Mild, then cold, rain southeast. 8-11 Clearing, mild. 12-14 Cold, snowstorm east. 15-18 Sunny, mild. 19-22 Cold, snow; clearing & mild. 23-25 Severe cold, snowstorm. 26-28 Clear & cold, snow west.

**Mar. 1982:** Temp. 47.5° (4° above ave.); Precip. 4" (1" above ave.; 0.5" below north). 1-2 Seasonable north, cold south. 3-4 Snowstorm, cold. 5-7 Sunny & milder. 8-9 Rain, mild. 10-13 Sunny & cold, then cloudy & milder. 14-16 Rain; seasonable. 17-19 Sunny & mild, then cold. 20-21 Very cold, light snow. 22-27 Clear, heat wave. 28-31 Rain south, sunny north; cold.

**April 1982:** Temp. 52.5° (4° below ave.; 1° below north); Precip. 6" (2" above ave.; 1" below north & west). 1-2 Cold wave, rain south, snow north. 3-7 Clearing & mild; then showers. 8-10 Rain, changing to snow north, turning cold. 11-13 Sunny & mild. 14-15 Rain, turning cold. 16-18 Seasonable. 19-22 Rain, mixed with snow north, cold. 23-25 Rain, cold. 26-30 Clear

& very warm; then showers.  
**May 1982:** Temp. 68.5° (2.5° above ave.; 7° above north); Precip. 2.5" (1" below ave.; 2" below north). 1-5 Sunny & warm. 6-8 Light rain north. 9-12 Clear & hot; then rain, cooler. 13-14 Clear, hot. 15-17 Rain, cooler. 18-21 Clear & very hot. 22-26 Rain, warm. 27-31 Partly cloudy & very hot, then rain & warm.

**June 1982:** Temp. 76.5° (1.5° above ave.; 4° above north); Precip. 3.5" (1" below ave.; 3" above north). 1-4 Clearing, hot. 5-6 Rain, cooler. 7-10 Sunny & hot. 11-14 Showers, cooling. 15-17 Rain, cool. 18-22 Partly cloudy, hot. 23-26 Rain, warm. 27-30 Sunny, then showers.

**July 1982:** Temp. 81° (2.5° above ave.; 4° above north & west); Precip. 2" (1.5" below ave.; 3" below southwest). 1-4 Showers, hot. 5-7 Showers, cooler. 8-10 Partly sunny, hot; showers. 11-14 Sunny & hot, showers south. 15-19 Clear & hot. 20-22 Showers, cooler. 23-26 Variable clouds, seasonable. 27-30 Hot, showers.

**Aug. 1982:** Temp. 76° (1° below ave.); Precip. 8" (5" above ave.; 2" below north-west). 1-4 Few showers, then clearing & hot. 5-7 Rain, hot. 8-9 Sunny north, partly cloudy south. 10-12 Rain, cool. 13-16 Showers, hot. 17-19 Sunny & hot. 20-22 Rain, cooler. 23-26 Rain, mild. 27-31 Clearing & hot.

**Sept. 1982:** Temp. 77.5° (8° above ave.; 5° above east); Precip. 0.5" (3" below ave.). 1-4 Partly cloudy, warm. 5-7 Sunny & hot, sprinkles north. 8-12 Clear to partly cloudy, very hot. 13-15 Showers, warm. 16-19 Partly cloudy, very hot. 20-22 Sunny, warm; few showers. 23-28 Seasonable to hot, partly cloudy, few sprinkles. 29-30 Sunny, cooler; rain north.

**Oct. 1982:** Temp. 63° (4° above ave.; 1° above north); Precip. 1.5" (1" below ave.; 1" above northeast). 1-4 Clear & hot; then rain, very cool. 5-7 Clearing & warming. 8-11 Few showers, warm. 12-14 Rain, cooler. 15-21 Cloudy, cool; hard frost north. 22-28 Sunny, warm. 29-31 Rain, turning cold.



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## 12. TEXAS-OKLAHOMA

*For regional boundaries, see map p. 86.*

**SUMMARY:** *Winter will be mild, all months except Feb. at or above normal temperatures. Precipitation should be below average, although Jan. and Feb. will be wet. Snowfall should be less than normal. Nov. will have warm temperatures, cold at the end. Dry, mild conditions in Nov. may persist until about Christmas, particularly in the west. A cold wave and snowstorm, extending below Dallas, may come in early Jan., then warm temperatures. Rains should come in Jan. and Feb., but March should be dry. Feb. will be the coldest month, March mild. Cold in April will cause a late spring. May through July should be average in temperature, below-average in rainfall. The summer should see uneven rainfall, less than average. A dry Sept. may result in serious drought. Temperatures should be near or slightly below average in July and Aug., increase near the Gulf in Sept. Oct. will be warm.*

**Nov. 1981:** Temp. 56° (Ave.; 2° above north); Precip. 1" (1.5" below ave.; 0.5" below north). 1-6 Sunny & warm; showers northeast. 7-8 Rain, warm. 9-12 Cold wave, rain & snow. 13-16 Sunny, warm. 17-19 Partly cloudy, seasonable. 20-25 Clear & hot, then seasonable. 26-30 Freeze to Gulf, snow.

**Dec. 1981:** Temp. 49° (1° above ave.; 3° above north); Precip. 1" (1" below ave.). 1-3 Clearing, cold. 4-7 Cloudy, warm; showers east. 8-13 Sunny, cool. 14-16 Clear & hot, cloudy south. 17-20 Cloudy & cool, then warming. 21-23 Sunny, cold. 24-26 Rain. 27-28 Clearing & seasonable. 29-31 Cold wave, snow.

**Jan. 1982:** Temp. 49.5° (4° above ave.; 7° above north); Precip. 3" (1" above ave.; ave. north). 1-4 Cold, frost north; showers Gulf. 5-7 Clear, warm. 8-10 Cloudy & warm. 11-13 Rain, warm. 14-16 Cold, cloudy; rain. 17-20 Cloudy & cold. 21-24 Rain, cold. 25-27 Sunny & warm, then rain. 28-31 Partly cloudy, seasonable.

**Feb. 1982:** Temp. 47° (2.5° below ave.; 2° above Gulf); Precip. 3.5" (1" above ave.; ave. north & Gulf). 1-4 Rain, then clearing & warm. 5-7 Showers, snow north; colder. 8-10 Cold, light snow & rain. 11-14 Sunny, warm; then cold north. 15-20 Sunny, cold. 21-24 Rain. 25-28 Cold wave, freeze, then warming.

**Mar. 1982:** Temp. 59.5° (3.5° above ave.); Precip. 2" (1" below ave.). 1-3 Cold, rain & snow. 4-7 Partly cloudy, cold. 8-10 Turning warm, showers east. 11-13 Showers; seasonal then warm. 14-19 Sunny, warm. 20-23 Few showers, cool. 24-27 Partly cloudy, warm; few showers. 28-30 Rain, warm.

**Apr. 1982:** Temp. 64° (2° below ave.; 2° above west); Precip. 4" (1" below ave.; 2" below Gulf & north). 1-2 Seasonable south; rain north; cool. 3-8 Clear & warm, then cloudy. 9-11 Rain & snow; cold. 12-15 Clear & warm, then showers. 16-20 Cool, then rain. 21-23 Cloudy & cool. 24-30 Sunny & warm; then showers east.

**May 1982:** Temp. 74° (Ave.; 1° above Gulf & northwest); Precip. 3" (2" below ave.; 2" above northeast). 1-4 Showers; warm. 5-10 Few showers west; sunny east. 11-13 Rain; cooler. 14-17 Clear & hot, then showers, cool. 18-20 Sunny & seasonable. 21-23 Rain, mild. 24-28 Sunny & hot, showers northeast. 29-31 Rain.

**June 1982:** Temp. 80.5° (1° below ave.; 3° above west); Precip. 3" (0.5" below ave.; 2" below northwest). 1-5 Sunny & hot, few showers. 6-10 Rain east & Gulf, sunny west; cool. 11-15 Sunny & seasonable, showers northeast. 16-18 Seasonable; rain north. 19-21 Clear & hot; cloudy Gulf. 22-25 Showers, cooler. 26-28 Rain. 29-30 Sunny, hot.

**July 1982:** Temp. 86° (Ave.); Precip. 1.5" (0.5" below ave.; 3" above Gulf). 1-4 Showers. 5-7 Rain, hot. 8-13 Clearing, hot, 14-17 Rain, heavy Gulf; mild. 18-25 Partly cloudy & hot, showers north. 26-28 Seasonable; rain north. 29-31 Partly cloudy, hot.

**Aug. 1982:** Temp. 85° (1° below ave.); Precip. 1" (1.5" below ave.; 1" above northwest). 1-4 Showers, mild. 5-8 Showers, hot. 9-11 Seasonable. 12-14 Rain, mild. 15-18 Showers. 19-23 Sunny & hot, showers. 24-27 Showers, mild. 28-31 Showers.

**Sept. 1982:** Temp. 83° (5° above ave.; 8° above north, 2° above Gulf); Precip. 0.5" (3" below ave.). 1-6 Clear & hot. 7-10 Warm south, clear & very hot north. 11-13 Partly cloudy, hot. 14-17 Showers west & Gulf, hot & dry north. 18-23 Hot, few showers. 24-30 Sunny, seasonable; hot north.

**Oct. 1982:** Temp. 71° (3° above ave.; 4° above north); Precip. 2" (1" below ave.; 2.5" below Gulf). 1-2 Sunny & hot; cloudy south. 3-5 Cold wave, sunny; showers southeast. 6-11 Clear, hot; few showers northeast. 12-14 Rain, cool. 15-20 Partly cloudy, cool. 21-23 Clear, hot; seasonable Gulf. 24-28 Sunny & hot north, seasonable south. 29-31 Showers.



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## 13. ROCKY MOUNTAIN

*For regional boundaries, see map p. 86.*

**SUMMARY:** *The winter as a whole will be slightly milder than average, with considerable variation between the cold months of November and February and the mild ones of December and January. The northern half will be wetter than usual and the southern half drier. Snowfall at higher elevations will be greater than usual. November will experience a number of cold waves. The first weeks of both December and January will see mild weather and above-average monthly temperatures. Precipitation will generally be less than usual, except at higher elevations. February through early March is expected to be below average in temperature, and wetter and much snowier than usual. Sunny, warm and dry weather is expected the latter half of March, with some flooding. Spring will be warm and dry. June is expected to have several hot spells, with below-normal rainfall. Warm and cool spells are expected to alternate during July and the first half of August, after which warm temperatures should persist.*

**Nov. 1981:** Temp. 36° (3° below ave.); Precip. 2.5" (1.5" above ave.; 1" below south). 1-2 Clear & warm. 3-5 Rain, cold. 6-9 Rain, snow mountains, cold. 10-12 Partly cloudy, hard freeze, then seasonable. 13-15 Rain, then snow & cold. 16-20 Gradual warming & clearing; rain north. 21-24 Light rain, then clearing. 25-30 Cold wave, snow.

**Dec. 1981:** Temp. 34° (4° above ave.; 1° above north); Precip. 1.5" (Ave.). 1-4 Clearing, seasonable. 5-8 Rain, snow mountains, cold. 9-13 Warm, showers north. 14-18 Snow, cold. 19-22 Rain & snow, then partial clearing. 23-26 Rain & snow, seasonable. 27-31 Sunny & cold; then snowstorm north.

**Jan. 1982:** Temp. 34° (6° above ave. south); Precip. 0.5" (0.5" below ave.). 1-2 Snowstorm north; sunny south. 3-6 Sunny & mild; showers north. 7-10 Rain & snow, mild; sunny south. 11-13 Snow, cold. 14-16 Cloudy, cold. 17-22 Light snow. 23-27 Partial clearing & mild; then snow. 28-31 Clearing then rain north.

**Feb. 1982:** Temp. 28° (5.5° below ave.; 10° below south); Precip. 2.5" (1" above ave.). 1-4 Mild; rain & snow. 5-7 Cold, snow. 8-13 Snowstorm, very cold. 14-16 Snow, cold. 17-19 Cold, snow. 20-24 Cold, cloudy; then light snow. 25-27 Sunny & cold. 28 Light snow north, partly cloudy south.

**Mar. 1982:** Temp. 42° (2.5° above ave.); Precip. 1.5" (Ave.). 1-5 Light snow, cold. 6-9 Light snow, cold. 10-13 Sunny & seasonable; then light snow north. 14-17 Rain, snow mountains, then clearing south. 18-24 Sunny & warm; few showers north. 25-29 Partly cloudy & warm; rain south. 30-31 Cool, showers.

**Apr. 1982:** Temp. 53° (4° above ave.); Precip. 1" (1" below ave.). 1-2 Rain, cool. 3-5 Clearing & warm. 6-8 Showers, cooler. 9-12 Clear & warm. 13-16 Rain, north, clear & warm south. 17-19 Rain, snow mountains, cold. 20-26 Sunny & warm. 27-30 Cloudy & cool, showers; seasonable.

**May 1982:** Temp. 63° (5° above ave.; 2° above south); Precip. 1" (0.5" below ave.). 1-2 Sunny & warm, few showers. 3-5 Rain, then clearing, warm. 6-9 Sunny, warm; sprinkles. 10-14 Partly cloudy & warm. 15-19 Few showers south, sunny & warm north. 20-25 Showers, warm; then clearing. 26-28 Rain, cool. 29-31 Sunny, warm.

**June 1982:** Temp. 67° (1° above ave.; 1.5° below north); Precip. 1.5" (0.5" above ave., 0.5" below north & south). 1-2 Sunny & hot, showers northwest. 3-5 Rain, cool. 6-8 Clear & hot; rain north. 9-13 Rain; then clear & warm south. 14-18 Clearing & hot. 19-21 Rain, cool. 22-24 Rain, cool. 25-30 Sunny & warm; rain northeast.

**July 1982:** Temp. 80° (3° above ave.; 1.5° above north); Precip. 0" (0.5" below ave.; Ave. north & south). 1-5 Sunny & hot, then cloudy & cooler. 6-10 Sprinkles, cool. 11-13 Clear, hot, highs 100°. 14-18 Sunny, hot. 19-25 Seasonable, mostly sunny, 26-28 Clear, warm; showers south. 29-31 Cloudy & cool, showers.

**Aug. 1982:** Temp. 76° (1.5° above ave.); Precip. 0.5" (0.5" below ave.). 1-4 Rain, cool. 5-8 Sunny, hot; showers. 9-11 Rain south, cool. 12-15 Partly cloudy & cool, showers. 16-21 Clear & hot. 22-27 Variable clouds, warm; showers. 28-31 Few showers, warmer.

**Sept. 1982:** 67° (2° above ave.); Precip. 0.5" (Ave.; 1" above north, 2.5" above south). 1-3 Showers, warm. 4-7 Sunny & warm; rain northwest. 8-11 Rain, cool. 12-14 Clear & warm. 15-18 Rain, cool. 19-27 Mostly sunny & warm. 28-30 Cloudy, warm; rain, cool.

**Oct. 1982:** Temp. 53.5° (1° above ave.); Precip. 1.5" (0.5" above ave.; 1" below south). 1-4 Showers, then clearing. 5-8 Rain, cool. 9-13 Sunny & mild, then showers & cool. 14-18 Clear, warm. 19-24 Partly cloudy, seasonable. 25-28 Clear & warm; then rain. 29-31 Rain, cold, snow mountains.



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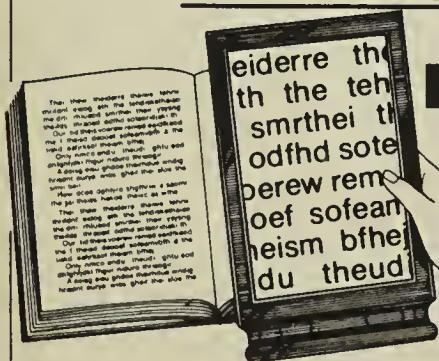
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## 14. SOUTHWEST DESERT

For regional boundaries, see map p. 86.

**SUMMARY:** *The winter as a whole is expected to be colder and drier than average, but with large variations from one month to the next. Subnormal temperatures will prevail for most of November. No measurable rainfall is expected and drought conditions may exist until mid-December. January should experience several mild periods. Western sections will again experience a relatively dry month. February and early March is expected to be quite cold. Rainfall is expected to be above average in central and western sections, while eastern sections will be slightly dry. Unseasonably warm and dry weather should dominate the latter half of March. April will be warm and dry, with two cool spells. May and June will have temperatures that average above normal. No measurable rainfall is expected after the first week of May. July may see two hot spells, but otherwise near-average values are expected. August will be cooler at first, then above normal in temperature. Southern sections, in particular, are expected to be quite dry. Rains of possibly torrential amounts might come to some western sections in September, but otherwise precipitation will be below average through October.*

**Nov. 1981:** Temp. 56.5° (3.5° below ave.; 2° below east); Precip. 0" (0.5" below ave.). 1-4 Clear & warm, then cloudy. 5-7 Few showers, cool. 8-11 Partly cloudy, mild; then cloudy, frost east. 12-17 Partly cloudy; then cold. 18-21 Sunny, seasonable. 22-26 Clear, warm. 27-30 Cold wave, sunny.

**Dec. 1981:** Temp. 56° (3.5° above ave.); Precip. 1" (0.2" above ave.). 1-4 Clear, warm. 5-8 Partly cloudy, cool. 9-13 Clear, warm. 14-16 Few sprinkles, cool. 17-20 Partial clearing, then showers, mild. 21-22 Cloudy, cool. 23-26 Rain, cooler. 27-31 Cloudy, seasonable.

**Jan. 1982:** Temp. 52.5° (1.5° above ave.); Precip. 0.2" (0.5" below ave.). 1-3 Sunny, cool. 4-7 Clear & mild. 8-9 Seasonable. 10-13 Rain, cold. 14-16 Sunny west, rain east. 17-19 Clear & cool. 20-22 Clear, frost nights. 23-26 Clear & warm, then rain & cool. 27-31 Warm west; cold east.

**Feb. 1982:** Temp. 49° (5° below ave.); Precip. 1" (0.5" above ave.). 1-4 Cloudy, cold west; sunny east. 5-6 Rain, cold, snow mountains. 7-9 Hard frost; then rain west. 10-13 Sunny & cold; showers west. 14-19 Clearing, frost. 20-22 Rain, snow mountains, cold. 23-25 Clearing, light frost. 26-28 Clear & warm.

**Mar. 1982:** Temp. 61.5° (2° above ave.); Precip. 0.2" (0.5" below ave.). 1-2 Seasonable. 3-6 Clear & cold. 7-10 Clearing & seasonable. 11-13 Clear & warm. 14-17 Few showers, then clear & warm. 18-23 Clear & hot. 24-27 Light rain, warm. 28-31 Partly cloudy & seasonable.

**Apr. 1982:** Temp. 70° (2° above ave.); Precip. 0.1" (0.3" below ave.). 1-2 Cloudy & cool. 3-5 Sunny & warm. 6-8 Cloudy & seasonable, showers west. 9-11 Partly cloudy, rain east. 12-17 Clear and warm. 18-20 Cloudy & cool. 21-26 Sunny, hot. 27-30 Few sprinkles, then sunny.

**May 1982:** Temp. 78° (2° above ave.; ave. south); Precip. 0.2" (Ave.). 1-3 Rain, warm. 4-6 Partly cloudy & hot. 7-10 Sunny & hot, few showers east. 11-13 Clear & hot. 14-16 Partly cloudy & hot. 17-19 Light rain, cool. 20-27 Sunny. 28-31 Partly cloudy & cool, then hot.

**June 1982:** Temp. 86° (1.5° above ave.); Precip. 0" (0.2" below ave.). 1-5 Clear & hot, showers east. 6-8 Clear & hot. 9-11 Partly cloudy, cool. 12-17 Clear and very hot. 18-21 Partly cloudy, hot. 22-25 Sunny, warm. 26-28 Sunny & hot. 29-30 Light rain, seasonable.

**July 1982:** Temp. 92.5° (1.5° above ave.); Precip. 0.7" (Ave.). 1-3 Sunny & hot; showers east. 4-7 Showers west, hot east. 8-11 Partly cloudy, cooler west, rain & hot east. 12-14 Very hot, variable clouds. 15-17 Clear & very hot. 18-20 Few showers, hot. 21-24 Seasonable, showers. 25-31 Showers, seasonable.

**Aug. 1982:** Temp. 89.5° (0.5° above ave.); Precip. 1" (0.5" below ave.). 1-4 Showers west, rain east, hot. 5-8 Showers, heavy west, cooler. 9-10 Showers, cool. 11-16 Few showers, hot. 17-20 Showers. 21-25 Few showers, becoming hot. 26-31 Hot, showers.

**Sept. 1982:** Temp. 83.5° (0.5° below ave.; 3° above east); Precip. 5" (4" above ave.; ave. east). 1-2 Showers west, sunny east; hot. 3-6 Clear & hot. 7-11 Showers & cool west, sunny & hot east. 12-14 Showers, seasonable. 15-17 Showers, cool. 18-22 Warming to normal. 23-27 Cloudy then clearing, hot. 28-30 Showers, cool.

**Oct. 1982:** Temp. 69.5° (2.5° below ave.); Precip. 0" (0.5" below ave.). 1-3 Partly cloudy & cool. 4-10 Clear & warm, then cloudy & mild. 11-13 Showers central & east, cloudy & cool west. 14-19 Clear & warm west, cloudy & cool east. 20-26 Clear, warmer. 27-28 Few showers, milder. 29-31 Showers, cool.



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## 15. PACIFIC NORTHWEST

For regional boundaries, see map p. 86.

**SUMMARY:** *The winter will be milder and drier than usual, but with greater than normal snowfall, despite a dry December and January. November will get progressively cooler until mid-month when a general freeze and heavy mountain snows are expected. The balance of the month should be more seasonable. December will start out mild and wet before turning colder and considerably drier than normal for most of the rest of the month. January will be mild, while precipitation will be frequent and occasionally heavy except in central and southern sections. February and two-thirds of March will be consistently colder, cloudier, and rainier than usual, with more snow than usual at higher elevations. All of April and the first three weeks of May are expected to be very dry, with frequent spells of warm weather. Thereafter, ample rains are anticipated through mid-July, with cloudier- and rainier-than-normal weather. A second warm and dry period of the year is expected to start the final week of July and last through most of August. Local shortages of water for irrigation and livestock are anticipated. Rain is expected at the end of August and the first half of September. Temperatures, too, should be considerably milder. October is expected to be rainier than usual.*

**Nov. 1981:** Temp. 45° (Ave.); Precip. 5" (0.5" below ave.; 3" below north). 1-4 Mild, rain. 5-8 Rain, seasonable. 9-10 Partial clearing, cold. 11-14 Rain, snow mountains. 15-16 Very cold, frost. 17-21 Rain, mild. 22-24 Showers, cold. 25-27 Frost, sunny. 28-30 Seasonable.

**Dec. 1981:** Temp. 43° (2° above ave.); Precip. 5" (1" below ave.; 3" below north). 1-2 Cloudy, cold. 3-11 Rain, mild. 12-13 Showers, mild. 14-20 Partly cloudy, cold. 21-23 Cloudy & cold. 24-26 Rain, snow. 27-29 Showers, mild. 30-31 Rain, snow mountains, cold.

**Jan. 1982:** Temp. 45° (7° above ave.); Precip. 4" (1.5" below ave.; ave. north). 1-6 Rain, mild. 7-9 Rain, mild. 10-13 Rain, cold. 14-16 Showers, mild. 17-20 Rain, mild. 21-23 Mild, rain. 24-26 Sunny, seasonable. 27-29 Rain. 30-31 Rain, milder.

**Feb. 1982:** Temp. 41° (1.5° below ave.); Precip. 6" (1.5" below ave.). 1-4 Rain, mild. 5-7 Showers, cold. 8-10 Rain, cold. 11-15 Cold, snow. 16-19 Rain, snow mountains. 20-23 Few showers, sunny. 24-26 Clear, cold. 27-28 Rain, seasonable.

**Mar. 1982:** Temp. 48° (2.5° above ave.); Precip. 2.5" (1" below ave.). 1-4 Rain, cool. 5-10 Rain, cool. 11-14 Rain, then clearing & cold. 15-17 Heavy rain, cold. 18-20 Rain, cold. 21-24 Partial clearing; warm. 25-28 Clear & warm. 29-31 Rain, turning cold.

**Apr. 1982:** Temp. 56° (5° above ave.); Precip. 0.5" (1.5" below ave.). 1-3 Clear & mild. 4-6 Showers, then clear & warm. 7-8 Rain north, cool. 9-11 Clearing, warm. 12-16 Rain, cool. 17-20 Clearing, turning hot. 21-24 Sunny, warm. 25-27 Light rain, cool. 28-30 Rain, cool.

**May 1982:** Temp. 61° (4° above ave.); Precip. 1" (1" below ave.). 1-2 Clear & warm. 3-7 Sunny, mild. 8-10 Cloudy & cool, few showers. 11-14 Partly cloudy, warmer. 15-19 Clear & hot. 20-23 Rain, cooler. 24-26 Rain, mild. 27-30 Showers. 31 Clear & warm.

**June 1982:** 61° (1° below ave.); Precip. 2" (0.5" above ave.). 1-3 Rain, cool. 4-6 Sunny & seasonable. 7-12 Rain, cool. 13-18 Sunny & warm. 19-23 Rain, cool. 24-26 Clearing & warming. 27-30 Cloudy & cool, then sunny & warm.

**July 1982:** Temp. 69° (2° above ave.); Precip. 1" (0.5" above ave.). 1-5 Sunny & warm, then cloudy. 6-10 Rain, cool. 11-13 Clear & warm. 14-18 Cloudy & seasonable. 19-20 Rain, cool. 21-23 Rain north. 24-31 Clear & hot.

**Aug. 1982:** Temp. 70.5° (4° above ave.); Precip. 0.5" (0.5" below ave.). 1-4 Sunny & hot, then few showers. 5-7 Clear & hot. 8-10 Cloudy, warm. 11-14 Clear & hot. 15-19 Partly cloudy, warm. 20-22 Sunny & warm. 23-26 Clear, warm. 27-29 Thunder-showers, cooling. 30-31 Partly cloudy, slightly warm.

**Sept. 1982:** Temp. 64.5° (2.5° above ave.; 1° above north); Precip. 1.5" (Ave.). 1-3 Rain, mild. 4-6 Rain, cool. 7-10 Sunny & mild, then showers. 11-14 Sunny, warm. 15-17 Rain, warm. 18-20 Partly cloudy, seasonable. 21-26 Sunny & warm. 27-30 Cloudy & cool, then clearing, warm.

**Oct. 1982:** Temp. 55.5° (2° above ave.); Precip. 2" (1.5" below ave.). 1-4 Partly cloudy, seasonable. 5-7 Showers, cool. 8-10 Rain, cool. 11-13 Showers, cool. 14-17 Sunny & warm. 18-20 Cloudy & seasonable. 21-24 Rain, warming. 27-29 Rain, cool. 30-31 Rain, seasonable.



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## 16. CALIFORNIA

*For regional boundaries, see map p. 86.*

**SUMMARY:** *The winter should be milder and drier than usual, with less than normal snowfall, but with late winter snowier than usual. November will start cool and wet. Coastal areas and southern sections will be mild and relatively dry. December will be mild, northern sections drier than usual, but wet in southern sections. Northern sections will be mild and dry through January; the south and the San Joaquin Valley will be wet. February should be cold and wet past mid-month. Cloudy, cool and wet weather is expected through much of March, with southern sections drier. Warm, dry weather is expected through April, May, and June except for central and northern coastal sections. Northern and inland sections should remain cool and seasonable to mid-September, southern California warm. The end of September should be hot. October should be cool the first half, warm the second.*

**Nov. 1981:** Temp. 56.5° (1° above ave.); Precip. 0.5" (1.5" below ave.). 1-5 Rain, cool. 6-8 Showers, cool. 9-12 Sunny & seasonable. 13-16 Cold, rain east, snow mountains. 17-20 Clearing & warming. 21-23 Clear, warm. 24-26 Sunny & seasonable. 27-30 Clear & warm.

**Dec. 1981:** Temp. 54° (4° above ave.); Precip. 2.5" (1.5" below ave.; 0.5" above south). 1-2 Clear & warm. 3-7 Rain north, cloudy south; seasonable. 8-11 Clear & hot south; cloudy & seasonable east. 12-17 Cloudy, cool. 18-21 Clearing & warm north, heavy rain south. 22-25 Rain, cool. 26-31 Sunny, warm.

**Jan. 1982:** Temp. 52° (4° above ave.); Precip. 3.5" (1" below ave.; ave. south). 1-6 Cooler north; clear & warm south. 7-10 Rain, cool. 11-15 Clearing & mild. 16-19 Sunny, warmer. 20-23 Cooler; cloudy, then clear & warm south. 24-26 Rain, heavy coast, cool. 27-30 Clearing & mild. 31 Rain.

**Feb. 1982:** Temp. 51° (Ave.; 2° below south); Precip. 2.5" (1" below ave.; 0.5" below east). 1-6 Rain, snow mountains; cool. 7-9 Rain, snow mountains, cold. 10-14 Rain, snow mountains; cold. 15-17 Showers, cold; clear & warm south. 18-21 Clearing & warming. 22-24 Partly cloudy & seasonable. 25-28 Sunny & mild, warm south.

**Mar. 1982:** Temp. 52.5° (0.5° below ave.); Precip. 2.5" (Ave.). 1-5 Sunny & seasonable; showers east. 6-9 Cloudy & cool. 10-14 Rain, cool, snow mountains. 15-17 Clearing & warming south. 18-22 Clear & warm. 23-26 Cloudy & cool. 27-29 Cloudy, cool. 30-31 Rain, cold.

**Apr. 1982:** Temp. 56° (1° above ave.; 4° above south); Precip. 0.5" (1" below ave.). 1-2 Cloudy & cold, seasonable south. 3-5 Clear & warm. 6-8 Rain, mild. 9-12 Clear & hot. 13-15 Partly cloudy & seasonable. 16-18 Light rain, cool. 19-22 Clearing & warming. 23-25 Cloudy & cool; sunny & hot south. 26-28 Showers, cool. 29-30 Partly cloudy, seasonable.

**May 1982:** Temp. 56.5° (1.5° below ave.; 2° above south); Precip. 0.5" (Ave.). 1-6 Cloudy & cool; sunny & warm south. 7-10 Clear & warm. 11-13 Sunny & seasonable. 14-18 Showers north, warm south. 19-21 Cloudy & cool. 22-24 Showers, cool inland. 25-27 Rain & cool; clearing & warm south. 28-31 Seasonable; clear & hot south.

**June 1982:** Temp. 59° (2.5° below ave.; 2° above south); Precip. 0" (Ave.). 1-2 Clear & warm. 3-6 Partly cloudy, cool. 7-10 Cloudy & cool; warm south. 11-16 Clear & seasonable, hot inland. 17-20 Cloudy & cool, then showers. 21-23 Cloudy, cool; clear & warm south. 24-26 Sunny & warm. 27-30 Cloudy & cool.

**July 1982:** Temp. 58.5° (4° below ave.; 2° above south); Precip. 0" (Ave.). 1-4 Cloudy & cool; very warm south. 5-9 Cloudy, warm south. 10-12 Sunny, warm. 13-17 Cloudy & cool; clear & hot south. 18-23 Sunny, warm. 24-26 Clear, hot. 27-31 Cloudy, cool; sunny & warm south.

**Aug. 1982:** Temp. 60.5° (2.5° below ave.; 3° above south & east); Precip. 0" (Ave.). 1-5 Cloudy, cool; sunny south. 6-8 Cloudy & cool. 9-15 Cloudy, cool; seasonable south. 16-20 Cloudy & cool; clear & hot south. 21-23 Clear, warm. 24-27 Cloudy, very cool; clear & warm south. 28-31 Cloudy & mild; clear & hot south.

**Sept. 1982:** Temp. 66° (2° above ave.; 8° above southwest); Precip. 1" (0.5" above ave.; 0.5" above south). 1-5 Clear & warm. 6-8 Cloudy, cool; seasonable south. 9-11 Sunny, warm. 12-14 Cloudy & cool, clear & hot south. 15-17 Showers, cool. 18-22 Clearing, turning hot. 23-25 Sunny & very hot. 26-27 Clear, very hot. 28-30 Rain, heavy south, cool.

**Oct. 1982:** Temp. 62° (1° above ave.; 4.5° above south); Precip. 0.5" (0.5" below ave.). 1-4 Cloudy & cool. 5-8 Rain; warm south. 9-11 Rain; cool. 12-17 Clear & hot. 18-20 Cloudy, cool; hot south. 21-23 Partly cloudy, warm. 24-27 Clear, hot. 28-31 Rain, cool; seasonable south.



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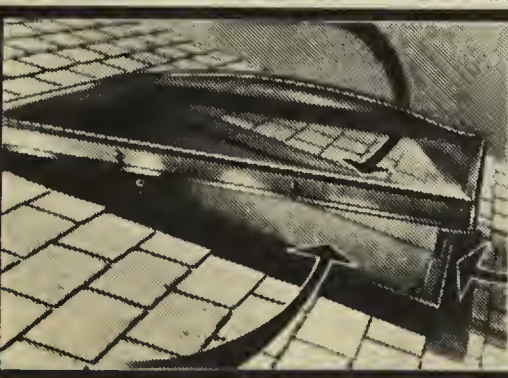
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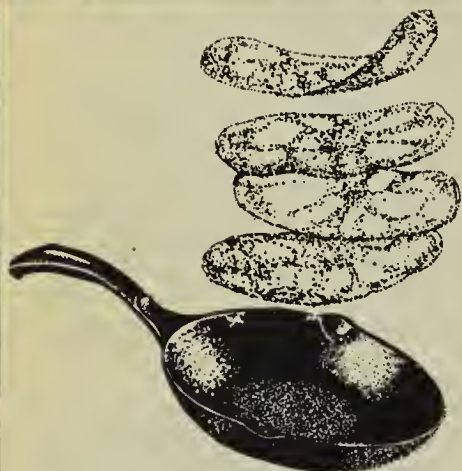
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## MORE PANCAKES, MOM — PLEASE?

by Beatrice H. Comas



□ DEPENDING UPON WHAT PART OF the world you hail from, those flat, round cakes so popular for breakfast, brunch, lunch, and dessert, may be called pancakes, hot cakes, buck-wheats, stacks, flannel cakes, flap-jacks, fritters, or griddle cakes. In Greece, where they originated, the Athenians made them of barley and water and Plato called them "griddle cakes" or "noble cakes." From the ancient Greek church derives the custom of eating pancakes on Mardi Gras (Shrove Tuesday).

In England since 1634, Shrove Tuesday (the day before Ash Wednesday, which ushers in the solemn season of Lent) has been called "Pancake Tuesday" or "Fat Tuesday" — fat because with 40 lean days ahead, it was a day of fun and feasting. The Shrovetide Pancake is described by a native son as follows: "There is a thing called wheaten flour, which the cookes do mingle

with water, eggs, spice and other tragical, magical enchantments, and they put little by little into a frying pan of boiling suet, where it makes a confused dismal hissing, until at last it is transformed into the form of a Pancake, which the ignorant people do devour very greedily."

In one of those "odd items from everywhere" I noted that March 25, 1982, will mark the 100th anniversary of the first public demonstration of pancake making; but 500 years before, the women of Olney, England, on Shrove Tuesday were testing their speed and coordination by running a pancake-flipping relay race. They tossed the large heavy pancakes in the air and tried to catch them on their griddles while running an S-shaped course. In England the "pancake bell" still rings at 11:00 A.M. on "Fat Tuesday."

Across the sea in America the ladies of Liberal, Kansas, which calls itself the "Pancake Hub of the Universe," compare their skills with their English female counterparts by running an International Pancake Race. Visitors are attracted by a six-foot cement stack of pancakes and a variety of pancake novelty shops.

It is said that in Holland both rich and poor relish their pancakes, so it is fitting that in New York, home of so many early Dutch settlers, each year a group of women hold a pancake-eating contest, the idea being to see who can down a giant-sized Dutch Apple Pancake the fastest. In 1981 the winner finished in 65 seconds!



Everyone loves pancakes but particularly the kids who can never finish them all. Anyway, here are some special pancake recipes (or griddlecakes or flapjacks or whatever) for this the 100th anniversary of the first pancake-making demonstration in America!

The "Fat Tuesday" custom is an old and pleasant one, worth preserving, but pancakes are a welcome change any time of year. Most pancakes can be prepared ahead for later use. Fold, roll, or stack them. Cover and refrigerate or freeze them to be reheated later in a toaster, oven, or microwave oven, or heated in sauce or butter in a skillet or chafing dish over medium heat.

Here are the recipes to prove that the eating of pancakes is universal. Their popularity never wanes, nor does the imagination of the cooks preparing them.

All continental pancakes are so much alike that one standard recipe will suffice. Different fillings provide the ethnic touches.

#### Continental Pancakes (Basic Recipe)

- 3 eggs, beaten
- 2 tablespoons sugar
- ½ teaspoon salt
- ½ cup flour
- 2 cups milk

Mix ingredients in order given to a thin batter. (Notice that there is no baking powder or shortening.) Fry in large, thin cakes on a well-buttered hot griddle until they are brown on both sides. Spread with any of the suggested fillings and roll. Serve hot as the main dish for brunch, lunch, or supper.

**Austrian Pancakes (Palatschinken):** Make a filling by mixing and spreading the following ingredients on hot continental pancakes: 1 tablespoon melted butter, 4 beaten egg yolks, 1 cup sour or sweet

cream, 1 cup cottage cheese, 2 tablespoons bread crumbs, 2 teaspoons sugar.

**Hungarian Pancakes:** Substitute cooked, mashed apricots or prunes for the cheese in the filling above, and add ½ cup ground, unblanched almonds.

**French Crepes au Lard** (Served at wakes, or on Halloween): Fry pieces of salt pork, and pour continental pancake batter over them, turning the whole to brown.

**Belgian Pancakes:** Spread continental pancakes with sweetened applesauce. Roll. Sprinkle with cinnamon and serve with syrup.

#### Fluffy Flannel Cakes

- 2 cups sifted flour
- 1 tablespoon baking powder
- ¾ teaspoon salt
- 1 tablespoon sugar
- 2 eggs, separated
- 1½ cups milk
- 2 tablespoons melted butter

Sift dry ingredients together. Beat egg yolks. Add milk and melted butter to yolks, and add gradually to dry ingredients, beating well to obtain a smooth mixture. Fold in the stiffly beaten egg whites. Drop from tip of spoon onto hot greased griddle and brown on both sides. Serve hot with maple or fruit pancake syrup. Makes 24 cakes.

#### Old Frontier Buckwheat Cakes

- ⅓ cup flour, cornmeal, or bread crumbs
- 2 cups scalded milk
- ⅔ teaspoon salt
- 1¼ cups buckwheat flour
- ¼ cake yeast
- ⅓ cup lukewarm water
- 2 tablespoons molasses or brown sugar
- ¼ teaspoon baking soda

Soak the flour, meal, or crumbs in the milk until it is cool. Add the salt and flour. Add the yeast softened in the water. Put in a covered bowl or pitcher and let rise all night. In the morning add the remaining ingredients and blend well. Drop from a spoon onto a hot greased griddle and cook until top is full of tiny bubbles and underside is brown before flipping. Makes 6 large cakes.

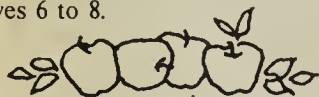
Note: Tradition demands that these cakes be made very thin and the full size of the griddle, making them about 8 inches in diameter. You may have to acquire a taste for these sour, yeasty cakes.

### Italian Strawberry Dessert Crepes

- 2 tablespoons butter
- 1½ cups sifted flour
- 2 eggs plus 2 extra egg yolks
- 2 cups milk
- 1 tablespoon granulated sugar
- pinch of salt
- ⅔ pound ricotta cheese
- ¼ cup granulated sugar
- 1 teaspoon vanilla extract
- 1 pint fresh strawberries, hulled and crushed
- confectioner's sugar

To make the dessert pancake, melt butter in top of a double boiler. Set over hot, not boiling water. In a bowl, prepare the batter by mixing the flour, eggs and egg yolks, milk, granulated sugar, and salt. Blend well. Heat a 6-inch skillet or crepe pan and brush it with melted butter. Pour in about 3 tablespoons of the batter and tilt the pan to spread batter over entire bottom. Cook on both sides. Stack crepes as they are cooked. Cover them with wax paper until they are to be filled.

To make filling, cream the ricotta with the granulated sugar and vanilla. Add strawberries and mix gently. Spoon some of the mixture down the center of each crepe and roll up the crepe. Sprinkle the rolled crepes with confectioner's sugar. Serves 6 to 8.



### German Apple Pancakes

- 1½ cups flour
- ⅓ cup sugar
- ¾ teaspoon salt
- 5 eggs
- 1 cup milk

- ¾ cup cream
- ¼ cup melted butter
- 5 apples, sliced, peeled

Sift together flour, sugar, and salt. Beat eggs with milk and cream. Add melted butter. Combine mixtures and beat until smooth. (If using a blender, put all the ingredients in and whirl until smooth.) Heat a 10-inch skillet, brush well with butter, and pour ¾ cup of the batter into the pan, tipping so it flows evenly over the bottom. When pancake is set, cover with a layer of thinly sliced peeled apples and dot with butter, using a pat for each pancake. Sprinkle each pancake with cinnamon and sugar, and bake in a 400°F oven for 3 minutes. Finish under the broiler. Fold pancakes so apples are inside. Brush top with butter, sprinkle with a little more cinnamon and sugar, and again, after all 6 pancakes are done, arrange on a fireproof platter and brown under the broiler.

Note: Instead of sliced apples, ½ cup chopped, peeled apple may be added to regular pancakes, and cooked on the griddle. Makes 6.

### Irish Potato Pancakes

- 1 cup mashed potato
- 2 cups flour
- 1 teaspoon salt
- 1 tablespoon baking powder
- 2 beaten eggs
- 1 cup milk
- 4 tablespoons light corn syrup
- 1 tablespoon nutmeg

Mix all ingredients. Beat well. Bake on a greased griddle until brown on both sides. (Do not expect these to be like American pancakes, but they have an excellent flavor.)

### Thin Vermont Maple Pancakes

- 1 cup sifted flour
- 1½ teaspoons baking powder
- ½ teaspoon salt
- 1 tablespoon maple syrup
- 1 egg, beaten
- 1 cup milk
- 3 tablespoons melted shortening

Sift flour, baking powder, and salt together. Combine maple syrup, egg, and milk. Add gradually to flour, mixing only until smooth. Add shortening. Bake on a hot greased griddle until brown on both sides. Makes 10 pancakes. ■ ■



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## THE CASE FOR A PET CRICKET



They're easy to manage, won't last very long, you'll love (or hate) their singing, they don't eat much . . . but beyond all that there really are some interesting aspects to owning one of these lovable little creatures.

*by Kathleen Kilgore*

□ I'VE NEVER MET ANOTHER AMERICAN family that keeps pet crickets, though they are still prized in Japan and probably China. My mother got the idea from a 1925 kindergarten teacher's textbook.

A field cricket is shiny black, with brown wings. There are no green crickets — Hollywood's Jiminy Cricket to the contrary. A fully grown male is a bit less than an inch long, and the female about 50 percent longer. They are easy to tell apart, and telling them apart is vital if you want one for a pet, because the female does not sing. At his rear, the male has two thin, pronglike sensory organs. The female has three prongs, the middle and longest one being her ovipositor, with which she injects eggs into the soil. A cricket is also shorter and stubbier than a grasshopper, and stays close to the ground. The cricket won't jump except in desperation.

In the fall, the female lays her eggs in the ground. They hatch in May or early June, producing thousands of tiny black crickets swarming in the tall grass. They moult rapidly, and by the time they are large enough to start singing in late July or early August, they have become not only bigger, but more cautious. The male selects a den to which he can retreat at a moment's notice — a tiny hole in the ground, a crack in a cement wall, a crevice under a piece of bark — and begins to sing.

Unlike the grasshopper, the cricket

doesn't sing by rubbing his legs together. He lifts his wing casings at a 45° angle and rubs them together — the insides are lined with tiny saw-tooth projections.

The cricket sings to attract a mate. But in captivity, he will also sing when you give him food (crickets can eat and sing at the same time). Some crickets become so tame they will sing when you blow gently on them — they seem to like the warmth. Like all insects, crickets are cold-blooded, and they sing faster or slower depending on the temperature.

From my own experiments, it seems that the cricket's song is territorial. One fall I recorded the cricket's song on tape. When the recording was played across the room, he showed no interest. But when I placed it near his cage, he went wild, clawing at the sides to get at his rival. After a few more tries, I determined his territory to be about two feet in diameter. In China, male crickets were made to fight like roosters by putting two at a time in a pottery jar. They will fight whether a female is present or not. And they fight fiercely, losing legs and antennae, often to the death.

So it's best not to keep two males in a cage. And don't take pity on your frustrated male and give him a female for company, unless you have kinky voyeuristic tastes. The female is much bigger, and in a cage the male has no chance to escape. After their amours, you'll probably find Madame



polishing off the remains of her lover.

I've experimented with several kinds of cages, jars, and fishbowls, and found that the best cricket house is a medium-sized pickle jar with holes punched in the lid. By far the worst home for a pet cricket is a cute sandalwood and bamboo cricket cage imported from Japan. The cricket squeezes himself between the bars, or failing that, simply chews through the bamboo.

After you get your cricket, you can add sand or clean soil and leaves to the bottom of his container. A piece of bark makes him feel more at home. If a pickle jar is out of place in your decorating scheme, you could put him into a fishbowl or terrarium bottle. But the top must be covered tightly with wire mesh, and even with that they can sometimes squeeze underneath the edge, or hurt themselves trying. You're safer with a ventilated screw top.

Now comes the hard part, the hunt. Crickets abound in fields and front lawns. But the minute you get within a few feet of a cricket, he shuts up and retreats into his hole. The best place to catch him is on your own turf. In the fall, crickets often come inside, attracted by the warmth. Anytime you hear one singing in a bathroom or a cellar, there is a potentially easy catch.

Once you have what you are pretty sure is a cricket in your hand, be careful. Their legs and antennae can break off, and they can bite like crazy. Your pickle jar is sitting on the shelf miles away, so the next best thing is a cotton handkerchief. Wrap him loosely so that he won't suffocate, and try to get him home as soon as possible.

The best place to transfer the cricket to his jar is the bathtub. After he becomes tame, you can put him safely in another jar while you clean the old one by tipping it up. He will slide down the glass. But a newly caught cricket will make desperate at-

tempts to escape. Close the drain and shower curtains — a glass-enclosed shower stall would be ideal.

Once he is safely in the jar, you will have to be careful about using insect sprays. They can kill him as well as harmful insects. He needs both food and water every day. For water, the most convenient dish is the lid of a plastic medicine jar. It can be put in with tweezers or a bacon turner, and filled by drawing water through a straw. The water dish should be cleaned and refilled every day. I had one cricket who used to sit in his water dish all day, but generally they just drink from it.

Crickets will eat almost anything, including your woolens, if they escape. They like cereals of all kinds: cornflakes, oats, granola. They are crazy about birdseed, especially sunflower seeds, and will also eat apple peelings, lettuce, raw carrot, and other raw vegetables. It's best to go easy on the food. They eat very little; any food should be removed every day, so the jar will not grow mold. I usually clean the jar and put in fresh dirt every two or three days.

Now we come to the sad part. A cricket's life span is very short. In fact, this is one pet children will not get tired of before it goes. Outdoors, the first frost kills the crickets, but even in a warm house with good care, they don't winter over. If you catch one in good condition in August or September, he should last until Thanksgiving. But I have never had one make it to Christmas.

Sometimes you will just find the cricket lifeless in the morning. Sometimes they seem to lose their balance and flop about — when that happens, I put them outdoors where I can't watch them. And occasionally, one night their song just gets fainter and fainter, like Tinkerbelle in *Peter Pan*, until it fades away by dawn. Then dump the jar out on the lawn, give it a good washing, and put it away for next fall. ■ ■

## THE ART OF SMOKING FISH

by Irwin Ross

It's easy if you adhere to the following directions. The results are absolutely scrumptious and even the Surgeon General would agree it's downright healthy ...



□ WHAT DO YOU DO WITH AN EXCESS CATCH OF FISH? The odds are you will either give them away or put them in the freezer. But what about a third choice? Why not venture into the art of smoking fish?

This method of preparing fish and eels has been used for centuries, and the finished product has been considered a delicacy that has brought a high price on the market. But enterprising people can prepare and enjoy their own smoked fish at a fraction of the retail cost.

Either game fish or the scavenger species may be smoked, but the most suitable types are those with an oily flesh — trout, salmon, cisco, whitefish, carp, and even lamprey eels when fresh.

There are two methods of smoking: the cold process requires a five-day period for completion; the hot process requires only two or three hours. If you use the cold process you will be able to keep the end product almost indefinitely; if you use the hot process you can keep the fish no longer than two weeks.

For the beginner, the hot method of smoking fish is probably more satisfactory, because it requires a minimum outlay of time and talent. As for the smoker, you can purchase one or try constructing one yourself. If you're a dyed-in-the-wool do-it-yourselfer, you can construct one with materials readily available.

Here is what you'll need for the project: (1) a new large metal garbage can with lid; (2) a piece of  $\frac{1}{2}$ " mesh metal screening large enough to fit into the top of the can; (3) two  $\frac{1}{4}$ " metal rods long enough to fit across the top of the can with a little extra length to spare; (4) one foot of  $\frac{1}{2}$ " electrical conduit; (5) a hot plate; (6) a cast-iron frying pan.

First, cut a hole 2" or 3" in diameter in the lid, and fasten on a closure flap with a rivet or bolt.

Next drill four  $\frac{1}{4}$ " holes about 5" below the top of the can to fit support rods into. Then cut the metal screening to fit into the can, laying it on top of the supporting rods.

Cut a  $\frac{1}{2}$ " hole near the bottom of the can and insert the electrical conduit. Through the conduit run the electrical cord for the hot plate.

Set the iron frying pan on top of the hot plate. Fill it with wood chips and you are ready to begin the smoking process.

The choice of wood depends upon your own personal preference for flavor. Any fruit tree provides a



lovely rich quality, particularly apple or cherry. Other selections may be hickory, beach, alder, willow, birch, maple, oak, or corn cobs. Coniferous trees should be avoided.

It is better to use green wood, because you want a slowly smoldering fire, not one that will burst into flames. Remember, you're smoking the fish, not baking it.

To prepare the fish clean them thoroughly and split them in half. If they are large fish they may be filleted. After cleaning, soak the pieces in a light brine, about 2 tablespoons of salt to a quart of water, for two or three hours. If you wish, you may also add several tablespoons of sugar to the brine and any spice that happens to stir your imagination. While some people may prefer the plain taste of smoke, a couple of cloves, a bay leaf, a clove of garlic, or a pinch of tarragon will add a subtle tang to the finished product.

Next, place the fish on the mesh, being careful that the pieces do not touch each other. Put the lid on the can, plug in the hot plate and let the smoke penetrate for two or three hours.

After this time has passed, test the flesh of the fish with a knife or fork. It should feel firm and should have a smoky flavor when tasted. Do not oversmoke or the flesh can become as hard as a rock.

When the smoking process is complete, the fish may be used immediately or stored in the refrigerator for a period of up to a week or two. During that time it may be eaten cold or can be reheated.

If you wish to earn a reputation as a gourmet cook, serve bite-size bits of your smoked fish to guests who drop in for cocktails. It's guaranteed to arouse their interest, stimulate the conversation, and enhance your fame as a host. ■ ■

## BEST FISHING DAYS, 1982 (and other fishing lore)

Probably the best fishing time is when the ocean tides are restless before their turn and in the first hour of ebbing. All fish in all waters — salt or fresh — feed most heavily then.

Best temperatures for fish species vary widely, of course, and are chiefly important if you are going to have your own fish pond. Best temperatures for brook trout are 45° to 65° F. Brown trout and rainbows are more tolerant of higher temperatures. Smallmouth black bass do best in cool water. Horned pout take what they find.

Most of us go fishing when we can get off, not because it is the best time. But there are best times:

- One hour before and one hour after high tide, and one hour before and one hour after low tide. (The times of high tides are given on pages 38-64 and corrected for your locality on pages 76-77. Inland, the times for high tides would correspond with the times the moon is due south. Low tides are halfway between high tides.)
- "The morning rise" — after sunup for a spell, and "the evening rise" — just

before sundown and the hour or so after. Still water or a ripple is better than a wind at both times.

- When there is a hatch of flies — caddis or mayflies, commonly. (The fisherman will have to match the hatching flies with *his* fly — or go fishless.)
- When the breeze is from a westerly quarter rather than north or east.
- When the barometer is steady or on the rise. (But, of course, even in a three-day driving northeaster the fish isn't going to just give up feeding. His hunger clock keeps right on working, and the smart fisherman will find something he wants.)
- When the moon is between new and full.

### MOON BETWEEN NEW & FULL

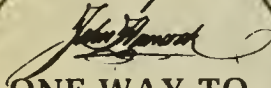
Jan. 24-Feb. 8	July 20-Aug. 4
Feb. 23-Mar. 9	Aug. 18-Sept. 3
Mar. 25-Apr. 8	Sept. 17-Oct. 2
Apr. 23-May 7	Oct. 16-Nov. 1
May 22-June 6	Nov. 15-30
June 21-July 6	Dec. 15-30

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by John M. Taylor



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acquire some that will  
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**Y**OU being appointed *Major of the first Regiment in the*  
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*in the year 1780*

By Virtue of the Power vested in me, I do by these Presents (reposing special Trust and Confidence in your Loyalty, Courage and good Conduct) Commission you accordingly.—You are therefore carefully and diligently to discharge the Duty of a *Major* in leading, ordering and exercising said *Regiment* in Arms, both inferior Officers and Soldiers; and to keep them in good Order and Discipline: And they are to obey you as their *Major* and you are yourself to obey the Orders and Instructions as your said superiour Officers.

*GIVEN* under my Hand, and the Seal of the said Commonwealth, the *Twenty*  
*Day of* *April* in the Year of our L.O.R.D. 178*1* and of the Independence  
 of the United States of AMERICA, the *fourteenth*

By his Excellency's Command.

□ AT AN AUCTION IN JANUARY 1981, A letter by Ronald Reagan sold for \$12,500. In the same sale, a military commission signed by Lincoln went for \$1,100, and a long letter by General Lafayette for \$700. Was the extraordinary interest in the Reagan letter a fluke? Not really, for to the collector of autograph letters and documents, a handwritten (as opposed to typed) letter, with good content, is the most desirable form of autograph. Such letters in this era of electronic communication are rarely encountered, and when one appears the collectors come out in force.

But \$12,500 — for Ronald Reagan? A routine, typed letter by President Reagan might sell for \$150 to \$200, but this letter was extraordinary. In it, Reagan defended his friendship with Frank Sinatra.

The term "autograph" is used by collectors to mean, generally, a letter or document; clipped signatures are the lowest form of autograph, and are

valuable only in instances of unusual rarity or demand. Although autograph collecting originated in Europe in about the 16th century, it did not catch on in this country until the decades immediately before the Civil War.

The first important collector of American autographs was probably the Reverend William Sprague, a Presbyterian clergyman who amassed a collection of some 90,000 items, including three complete sets of the signers of the Declaration of Independence. Sprague was fortunate as well as diligent; while a young man he served as tutor in the home of one of Washington's descendants, and there was invited to help himself from the Washington family papers! Somewhat surprisingly, Sprague did not hold his fellow collectors in high esteem. On one occasion he wrote, "I would advise you to have as little to do with an autograph collector as possible, for though there are some honorable



exceptions...I think they rank A No. 1 in point of meanness."

As time went on, autograph collecting developed a jargon of its own. For example, an ALS (Autograph Letter Signed) is a letter entirely in the hand of the person signing it, i.e., no typewriter. Other factors being equal, an ALS is the most prized form of autograph. By contrast, an LS is typed or written in the hand of a clerk, except for the signature. A DS is a signed document such as a commission, while an ADS can be almost any nonletter in Mr. X's hand — for instance, a legal writ or a check. Although collectors will sometimes have to settle for a clipped signature, such a memento tells little about the signer or the circumstances surrounding the affixing of his signature.

Unfortunately, the history of autographs includes a trail of emasculated documents, their signatures removed by overzealous collectors. An early draft of Washington's first inaugural, for instance, fell into the hands of Harvard historian Jared Sparks, an editor of Washington's letters, who was frequently asked for examples of the president's handwriting. Sparks obligingly cut the draft inaugural into scores of four- and five-line segments, and as a result historians still do not know what changes Washington saw fit to make in his speech.

Collectors of literary autographs have always shown particular interest in letters of the New England authors who sprang into prominence in the first half of the last century. At that time, the most renowned of these was probably the poet-essayist Emerson; the Sage of Concord carried on so extensive a correspondence that his autograph is today a very common one. Yet while a routine letter of Emerson's may be purchased for around \$200, souvenir verses from his poems are scarce, and a signed verse from the "Concord Hymn" is a prized autograph.

High on any list of American liter-

ary rarities are autographs of Herman Melville, the creator of *Moby Dick*, and Emily Dickinson, the "Belle of Amherst." Unlike Emerson, neither Melville nor Dickinson was a sought-after lecturer. In fact, neither of them achieved wide recognition during his or her lifetime. Hence, although unsigned poems in Emily Dickinson's distinctive hand are occasionally available, I cannot recall having seen her signature, and examples of Melville's are only slightly less rare.

Autographs of Henry David Thoreau are moderately rare, but invariably command high prices because of resurgent interest in Thoreau as a writer. Unsigned, single-page fragments from his writings have on occasion brought as much as \$1,500. Conversely, autographs of Oliver Wendell Holmes are inexpensive. A signed excerpt from one of his poems can sometimes be found for \$300.

Many collectors regard John Adams as the most interesting correspondent among the presidents. His frequent separations from his wife Abigail while he was engaged in public duties tended to make him irascible, and when irascible he wrote some of his more revealing letters.

The Civil War is the first of America's conflicts for which an ample supply of soldiers' letters exists. These letters represent a fascinating and relatively inexpensive collecting field, and on occasion can be of considerable historic interest. Not infrequently a soldier's letter will shed light on some little-known aspect of the war. I have the letter of one Yankee soldier, written in 1862, in which he comments on some economic warfare being practiced by General McClellan. "Those [Virginia] natives who are foolish enough to prefer Confederate money," he wrote, "have been supplied with an abundance of 'facsimile' notes... a lesson which makes them place more value on our notes."

As good autographs have disap-

peared into libraries and other institutions, prices for those still available have jumped. Yet autographs are not always a sure-fire investment. In 1927, a fine letter by the rarest signer of the Declaration of Independence, Button Gwinnett, sold at auction for \$51,000 — at that time the highest price ever paid for an autograph. Yet when the same letter was put up at auction 21 years later, it fetched only \$30,000.

There are other pitfalls. Forgers have sought to capitalize on the boom in autograph values, though the making of a good forgery is no easy task. The forger's first challenge, but only the first, is to imitate his subject's handwriting well enough to fool an expert. He then must "create" his autograph, employing the language of the time and using appropriate paper and ink. On occasion, forgeries have been detected by the rather simple expedient of noting that the watermark date on the paper was later than the life span of the person who "wrote" the letter.

Forgers are not the only problem. At an auction sale in 1976, two interesting letters were sold for \$900 each. The first, entirely in the hand of Jimmy Carter, was addressed to one Jimmy Carter Colbert. "I have just learned that your parents have given you my name," the future president wrote. "This is a great honor for me . . . I will do everything I can never to be a disgrace to you." The second letter was from Gerald Ford, while vice president. It was addressed to Gerald Ford Colbert — again that surname — and was another gracious acknowledgment of a child's having been named for a political leader. Ford's postscript to young Gerald included some good-natured advice. "Let me pass on to you a legacy which my Dad instilled in me," Ford wrote. "Work hard to make something of yourself, speak the truth, and never be late for dinner."

Two charming letters, yet both

Carter and Ford were victims of a hoax. There was no Jimmy Carter Colbert, nor any Gerald Ford Colbert. Both future presidents fell victim to a gimmick aimed at eliciting a personal letter from the recipient, one that might reflect the personality of the writer and be more valuable for so doing.

More insidious than forgeries are products of the Autopen, a machine signature device that has been employed by presidents, congressmen, and business executives. When John F. Kennedy became president, collectors at first had no difficulty in locating Kennedy letters with which to keep presidential sets "current." Only after Kennedy's death did it become known that most of his letters had been signed by machine, and since then authentic J.F.K. letters have been the most expensive of any 20th-century president. ■ ■

*The author will attempt to answer any questions concerning autographs sent c/o The Old Farmer's Almanac. For persons interested in purchasing or selling autographs, the following is a partial list of well-known dealers:*

*Robert F. Batchelder  
1 W. Butler Ave.  
Ambler, PA 19002*

*Goodspeed's Book Shop  
18 Beacon St.  
Boston, MA 02108*

*Doris Harris Autographs  
5410 Wilshire Blvd.  
Los Angeles, CA 90036*

*James Lowe Autographs Ltd.  
667 Madison Ave.  
New York, NY 10021*

*Earl Moore Associates, Inc.  
Box 243  
Wynnewood, PA 19096*

*The Rendells, Inc.  
154 Wells Ave.  
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A1-01-12

## GESTATION AND MATING TABLE

	Proper age for first mating	Period of fertility, in years	No. of females for one male	Period of gestation, in days	
				Range	Average
Ewe	90 lbs. or 1 yr.	6		142-154	147 151 <sup>a</sup>
Ram	12-14 mos., well matured	7	50-75 <sup>2</sup> 35-40 <sup>3</sup>		
Mare	3 yrs.	10-12		310-370	336
Stallion	3 yrs.	12-15	40-45 <sup>4</sup> Record 252 <sup>5</sup>		
Cow	15-18 mos. <sup>1</sup>	10-14		279-290 <sup>6</sup> 262-300 <sup>7</sup>	283
Bull	1 yr., well matured	10-12	50 <sup>4</sup> Thousands <sup>8</sup>		
Sow	5-6 mos. or 250 lbs.	6		110-120	115
Boar	250-300 lbs.	6	50 <sup>2</sup> 35-40 <sup>3</sup>		
Doe goat	10 mos. or 85-90 lbs.	6		145-155	150
Buck goat	Well matured	5	30		
Bitch	16-18 mos.	8		58-67	63
Dog	12-16 mos.	8			
She cat	12 mos.	6		60-68	63
Doe rabbit	6 mos.	5-6		30-32	31
Buck rabbit	6 mos.	5-6	30		

<sup>1</sup>Holstein & Beef: 750 lbs. Jersey: 500 lbs. <sup>2</sup>Handmated. <sup>3</sup>Pasture. <sup>4</sup>Natural. <sup>5</sup>Artificial. <sup>6</sup>Beef; 8-10 days shorter for Angus. <sup>7</sup>Dairy. <sup>8</sup>For fine wool breeds.

### BIRD AND POULTRY INCUBATION PERIODS, IN DAYS

Chicken . . . 21	Goose . . . 30-34	Guinea . . . 26-28
Turkey . . . 28	Swan . . . . . 42	Canary . . 14-15
Duck . . . 26-32	Pheasant 22-24	Parakeet 18-20

### GESTATION PERIODS, WILD ANIMALS, IN DAYS

Black bear . . . . . 210	Seal . . . . . 330
Hippo . . . . . 225-250	Squirrel, gray . . . 44
Moose . . . . . 240-250	Whale, sperm . . . 480
Otter . . . . . 270-300	Wolf . . . . . 60-63
Reindeer . . . 210-240	

### LONGEVITY IN CERTAIN ANIMALS IN YEARS

Ass . . . . . 24	Cow . . . . . 18	Lion . . . . . 15-29
Bat . . . . . 6	Deer . . . . . 17	Monkey . . . . . 7
Bear, Black . . . 19	Dog . . . . . 16	Moose . . . . . 8
Bear, Grizzly . . 31	Elephant . . . . . 47	Pig . . . . . 14
Bear, Polar . . . 31	Fox . . . . . 8	Rabbit . . . . . 5
Beaver . . . . . 13	Goat . . . . . 9	Sheep . . . . . 13
Buffalo . . . . . 20	Gorilla . . . . . 25	Squirrel . . . . . 8
Cat (domestic) 15	Guinea Pig . . . . 4	Whale . . . . . 37
Chimpanzee . . . 30	Horse . . . . . 27	Wolf . . . . . 12
Chipmunk . . . . 7		

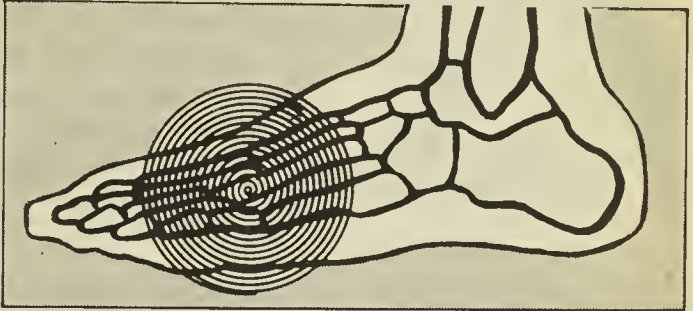
## REPRODUCTIVE CYCLE IN FARM ANIMALS

	Recurr if not bred	Estrual cycle incl. heat period (days)		In heat for		Usual time of ovulation
	Days	Ave.	Range	Ave.	Range	
Mare	21	21	10-37	5-6 days	2-11 days	24-48 hours before end of estrus
Sow	21	21	18-24	2-3 days	1-5 days	30-36 hours after start of estrus
Ewe	16½	16½	14-19	30 hours	24-32 hours	12-24 hours before end of estrus
Goat	21	21	18-24	2-3 days	1-4 days	Near end of estrus
Cow	21	21	18-24	18 hours	10-24 hours	10-12 hours after end of estrus
Bitch	pseudo-pregnancy	24		7 days	5-9 days	1-3 days after first acceptance
Cat	pseudo-pregnancy		15-21	3-4 days if mated	9-10 days in absence of male	24-56 hours after coitus



# My Feet Were Killing Me... Until I Found Relief in Germany!

It was the European trip I had always dreamed about. I had the time and money to go where I wanted—see what I wanted. But I soon learned that time and money don't mean much when your feet hurt too much to walk. After a few days of sightseeing my feet were killing me.



Oh, I tried to keep going. In Paris I limped through Notre Dame and along the Champs-Élysées. And I went up in the Eiffel Tower although I can't honestly say I remember the view. My feet were so tired and sore my whole body ached. While everybody else was having a great time, I was in my hotel room. I didn't even feel like sitting in a sidewalk cafe.

The whole trip was like that until I got to Hamburg, Germany. There, by accident, I happened to hear about an *exciting breakthrough for anyone who suffers from sore, aching feet and legs.*

This wonderful invention was a custom-made foot support called Flexible Featherspring. When I got a pair and slipped them into my shoes *my pain disappeared almost instantly.* The flexible shock absorbing support they gave my feet was like cradling them on a cushion of air. I could walk, stand even run. The relief was truly a miracle.

And just one pair was all I needed. I learned that women also can wear them—even with sandals and open backed shoes. They're completely invisible.

Imagine how dumbfounded I was to discover that these miraculous devices were sold only in Europe. Right then I determined that I would share the miracle I discovered in Germany with my own countrymen.

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*"My husband felt a great relief and no more pain. They are truly an answer to our prayers. Only wish that he had heard of them twenty years ago."* Mrs. F. S./Metairie, Louisiana

*"I have checked your corporation with (A Consumer Protection Agency), and—received an excellent report."* H.S.H./Louisville, Kentucky

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## CURES FOR THE COMMON COLD

There are plenty of them — from standing on one's head under water to wearing a bag of onions — but none seems to be the ultimate answer for which the eventual discoverer will likely receive the Nobel Prize. Here, however, are some old, some new, and some zany ones to try . . . *by Tim Clark*

□ *CASE HISTORY:* THE PATIENT, A vigorous man in his late sixties, went out riding on December 12, 1799, a day of cold rain, sleet, and strong winds. Arriving at home late for dinner, he sat down to eat before changing his clothes. The next day he complained of a sore throat, and stayed indoors for the morning. In the afternoon, he went out to mark some trees to be cut down. That same evening he was hoarse, but refused suggestions to take medicine. "You know I never take anything for a cold," he said. "Let it go as it came."

At about 3 A.M. the patient awakened his wife to complain of chills. He was having trouble speaking and breathing. Near dawn, he was offered a mixture of molasses, vinegar, and butter, but was unable to swallow it.

A doctor was summoned, who took one pint of blood from the patient. The patient then soaked his feet in hot water, and had a piece of flannel soaked in salve wrapped around his neck. Hot compresses and mustard packs were also applied, along with various gargles and inhalations. More blood was taken. On December 14, the patient died.

What killed George Washington? Was it pneumonia or a strep infection, as some historians believe? Or was it, as others have suggested, the

most ordinary of diseases, the common cold, aided by "remedies" such as bleeding?

Washington himself believed he had a cold, and the remedies he and his doctor applied were considered the normal treatment for a cold in those days. They may sound quaint, but after nearly 200 years modern science is not much closer to a cure for the common cold, also known as coryza, or nasal catarrh.

The cold has bedeviled mankind throughout history, and the effects of the illness are recorded in ancient literature. A 15th-century writer, for example, described the plight of one Swanus, a pilgrim who on the road to Jerusalem "dyled by the way of colde that he had taken of goynge barefote."

The very word "cold" refers to the commonly believed cause of the illness — becoming chilled by exposure to cold, or overexertion followed by rapid cooling off, or even "goynge barefote." But one of the few things that scientists can say with any certainty about the common cold is that it is *not* a result of such chilling. Volunteers have spent many hours attesting to this fact by standing in drafty hallways wearing wet clothing. They were chilly and uncomfortable, but they caught no more colds than



other volunteers kept warm and dry. During World War I, military doctors noticed that men who had to sleep in wet trenches during the winter had fewer colds than those who lived in comfortable barracks behind the lines. Eskimo communities were free of colds until they were visited by ships from warmer climates.

One reason for the common connection between the illness and feelings of chill may be that sufferers often feel a greater sensitivity to temperature changes during the early stages of a cold. So when you start shivering and think, "I'd better put on a sweater or I'll catch cold," you may already have it.

Most colds seem to occur between September and May, with an abrupt increase between September and mid-October, but researchers think that has more to do with the fact that people are indoors a lot during the winter months, where they are more likely to be exposed to people with colds, and where warmer, drier air tends to dry out the protective mucus that lines the nasal passages, allowing the viruses that actually cause colds to take hold.

There are more than 100 different viruses that can cause a cold, the most important of which are called the rhinoviruses, which cause 25 to 30 percent of all adult infections. The rhinoviruses are different from and much smaller than the viruses that cause influenza — a cold-causing virus is about .000002 inches in diameter. Antibiotics do not affect viruses, and although vaccines can be developed to combat them, the large number of cold viruses makes that approach impractical.

Statistics on the common cold are hard to gather, because it resembles many other illnesses, and often is not considered important enough to report. Some authorities think Americans suffer as many as a billion colds a year. The National Center for Health Statistics announced in 1978 that

Americans annually reported almost 100 million colds, resulting in the loss of 30 million work days and 30 million school days, and 276 million days of "restricted activity." The common cold accounts for one out of five acute illnesses in the United States.

Other studies provide a wealth of information about who gets colds, and how often. One said that 75 percent of all people have at least one cold a year, while 25 percent have four or more. At Cornell University, 25 percent of all the students have 75 percent of all the reported colds. Children under four average eight colds a year, but the number declines with increasing age, so that adults average only two colds a year. Women have more colds than men, and tend to spend more time in bed or in "restricted activity."

The economic costs of colds, in terms of work time lost, have been estimated in the billions of dollars. Americans spend more than half a billion dollars a year on drugs aimed at fighting colds, but so far there is no pharmaceutical cure.

But folk remedies for colds are legion. They may be based on conceptions about colds that are outdated by scientific research, but people still believe in them, and some research indicates that belief may be the most important element. In one five-year experiment, a variety of cold vaccines were tested, while a control group, which had been told it was receiving a vaccine, was actually injected with distilled water. More than a third of the control group reported that their "medication" had cured or improved their colds. "Such results explain why it is so easy to become enthusiastic about any preparation for the treatment of colds," said one expert.

A look through history provides a representative sampling of popular folk remedies for colds, which seem to fall into several distinct categories.

**Diet:** A wide variety of herbal teas are recommended for colds, including

**"In some country districts there are still many folks who believe that swallowing a spider will cure them."**

teas made from coltsfoot, peppermint, yarrow, boneset, mint, catnip, verbena, hoarhound, and sage. Garlic is frequently recommended, as are licorice and lemon in many forms. A Vermont doctor prescribed chewing on a honeycomb to clear sinus passages. Another Vermonter, Dr. B. J. Kendall, suggested the following treatment in a pamphlet called *The Doctor at Home Illustrated: Treating the Diseases of Man and the Horse* (1888): "Take of molasses one-half cupful, Jamaica ginger one heaping teaspoonful, soda or saleratus one-fourth teaspoonful. Mix and beat thoroughly. Dose, one teaspoonful, repeated every hour."

Onions figure in many cold cures from early days in this country. A mixture of onions and butter was placed on the throat and chest. Cooked onions were put in a muslin bag, and worn around the neck. To protect children, it was agreed that a large red onion should be tied around the bedpost.

As recently as 1978, Dr. Marvin Sackner, chief of medicine at Mt. Sinai Medical Center in Miami Beach, reported that chicken soup cleared mucus from sinus passages faster than other hot beverages. Dr. Sackner's findings were published in the medical journal *Chest*.

According to *Grannie's Remedies* by Mai Thomas (1965), "In some country districts (in England) there are still many folk who believe that swallowing a spider will cure them."

**The nose:** People have suggested washing out the nose with hot water, soap, sodium bicarbonate, ammonium bicarbonate, cod-liver oil, cream, salt water, vapors of ammonia, eucalyptus oil, iodine, and formalin. Sniffing aspirin, pepper, snuff, and

cinnamon have been tried. Several authorities recommend that cold sufferers can reduce the length of their illness and avoid more serious sinus and ear infections by refraining from blowing the nose. Some colonial Americans pared orange peels, rolled them up inside out, and stuffed them into the nostrils.

Inventor Norman Lake of Lancaster, Pennsylvania, discovered in 1953 that he could make a cold go away by wearing a clothespin on his nose. In 1977, after much research, he patented a device he calls the "Cold Clip," which closes the nose to viruses or pollen. Despite tests by a local physician showing that half of the volunteers who used the Cold Clip were able to halt or shorten the duration of colds, the federal Food and Drug Administration (FDA) says Lake cannot advertise his device as a cold cure, but only as a way of "keeping foreign material out of the nose."

**Alcohol and drugs:** A traditional cure known to some as the Hungarian Hat Trick is performed as follows: Place a hat on a bedpost. Get into bed and start drinking. When you see two hats, stop drinking.

Actually, alcohol has been found to dilate small blood vessels in the skin, and help reestablish circulation in the mucus membranes of the nose, along with raising the temperature of those membranes to help neutralize viruses. It also produces a feeling of comfort and drowsiness.

The National Academy of Sciences has reported that the claims of most nonprescription cold remedies to prevent or relieve cold symptoms cannot be supported by science. The FDA also believes that many of the claims made in labeling and advertising these substances are misleading or exaggerated.

Although many people believe that taking Vitamin C will prevent or reduce the severity of colds, long-range studies have so far not pro-



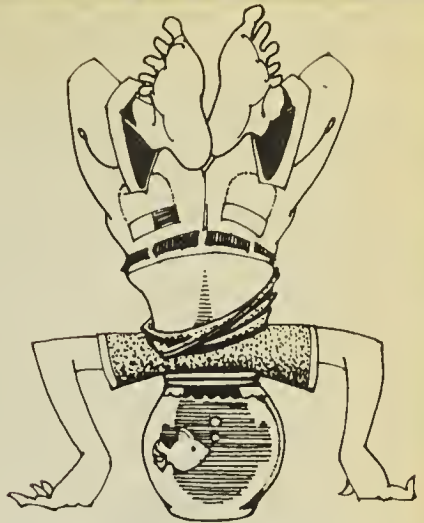
duced conclusive evidence that this is so. The use of Vitamin C in very large amounts may also lead to undesirable side effects.

Another drug that appears to be effective against colds, but with unacceptable side effects, is opium. Thomas DeQuincy, who wrote *Confessions of an English Opium-Eater*, testified that he had never suffered from a cold while addicted.

**Other:** Another of *Grannie's Remedies* suggested for prevention of colds went like this: "Walk with the toes turned outward. Walk with the chin slightly above the horizontal line, as if looking at the top of a man's hat in front of you, or at the eaves or roof of a house. Walk a good deal with your hands behind you. Sit with the lower part of your spine pressed against the chair back."

Sir Christopher Andrewes, head of England's Common Cold Research Unit since 1946, may be the world's leading authority on the illness. In his book *The Common Cold* (1965), Sir Christopher catalogued the 100 remedies for colds that had been sent to him by helpful laymen. Most of them could be included under such general categories as drugs, diet, and treatment for the nose, but a number of them defied pigeonholing:

"Under miscellaneous remedies these occurred: smoking tobacco, inducing daily shivering, rubbing methylated spirit into a bald head, rubbing the body with Vaseline, 'naturopathy,' transient exposure to tear gas or other war gas (two letters), wearing a gas mask for an hour, inhaling powdered dry licorice leaves, working with lime, taking up fencing, avoiding people with poisonous auras, mental concentration (especially on mathematics), growing a mustache right up to the nostrils, sweeping chimneys, standing on one's head under water, or wearing on the back between the kidneys a bag containing onions. Cure of colds was reported to have followed an electric shock, a car smash, and



*Cold remedies, such as standing on one's head underwater, defy explanation.*

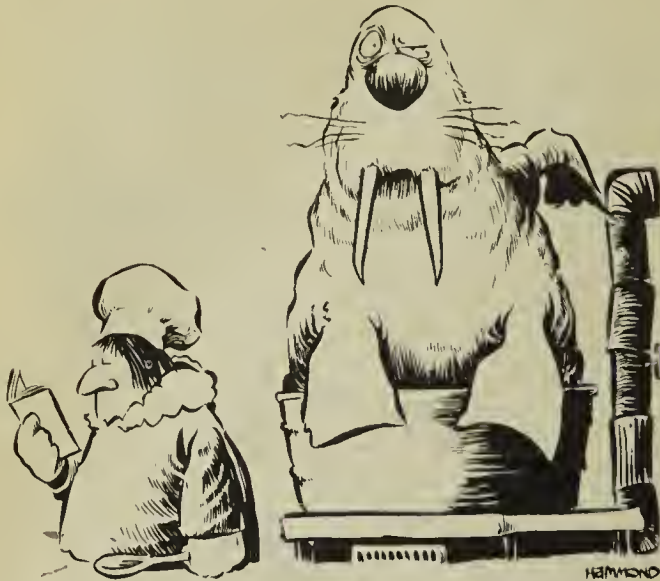
destruction of one's home by a V-1 bomb. Finally, several letters pointed out the value of attention to psychology, a subject that probably had considerable relevance to the prescriptions of the other ninety-odd of our correspondents."

The search for a cure goes on. One promising new idea is interferon, a substance produced in the body to fight infections. A government-supported study in 1973 reported that large doses of interferon could prevent colds. At that time the cost of producing interferon was much too high to make it a practical remedy. But since then the new technology of gene-splicing has opened the door to cheap production of interferon.

It may not prove to be the answer, but curing the common cold has become a sort of Holy Grail to some researchers, an ideal at once infinitely desirable and seemingly unattainable. The person who achieves it should be able to accept the Nobel Prize as his just deserts. Indeed, one famous Nobel laureate, Dr. James D. Watson, accepted his prize with these words: "It is an important thing we have accomplished, but we have not done away with the common cold — which I now have." ■ ■

## WHAT'S FOR SUPPER IN SHISHMAREF, ALASKA?

If you've ever wondered how to make soured seal's liver or cook bear feet, read on . . .



□ *WITH THE RECENT AND MUCH publicized revolution in America's cooking and eating habits has come an increased interest in regional cookery. Every region has its own local specialties and often has an expert who has written either magazine articles or books about these dishes. There are a few regions, however, that are still awaiting discovery. The regional cuisine that will probably be one of the last to be appreciated is carefully recorded in a small cookbook prepared by the students of Shishmaref Day School in Shishmaref, Alaska.*

*This little book is probably one of the few places where one can find four different recipes for seal liver — frozen, fried, baked, and this interesting preparation:*

### Soured Seal Liver

Soured seal liver is made in the summer time. Place liver in enamel pot or dish and cover with blubber. Put in warm place for a few days until sour. Most of the boys and girls don't like it, except the grown-ups and old

people. I don't like it either.

*Agnes Kiyutelluk*

*Reading the cookbook, it is quickly apparent that certain children felt compelled to contribute in their own areas of expertise. Bert Tocktoo, for instance, held top honors for main dishes under the "Meats" section. His five recipes show techniques that apply to a variety of foods:*

### Baby Birds (Ducks)

Take feathers off from baby birds, clean and wash. Cook them in plenty water. Add salt as much as you want.

### Owl

Take feathers off from owl. Clean owl and put in cooking pot. Have lots of water in pot. Add salt to taste.

### Ducks

First take the feathers off from the ducks then cut the ducks. After the cutting is finished, wash them and put them into a cooking pot. Add salt as much as you want. Then boil. Soup may also be made from the ducks.



### Loon

Take off feathers and clean the loon. Wash and put into cooking pot with plenty of water. Add salt to taste. Do not make the loon soup.

### Squirrels

Take fur off from squirrels and take out the small intestines. Clean. Put squirrels in cooking pot. Add salt as much as you want. Let them boil until done.

*In the harsh climate of this part of Alaska, nothing is wasted. Recipes are included for every part of every creature — everything from seal flippers and bear feet —*

### Seals' Bare Feet (Seal Flippers)

Put the seals' bare feet into a cooking pan. Cover them with blubber and keep in a hot place until the fur comes off. Then it is time to eat the seals' bare feet. You can cook them or eat them without cooking.

*Pauline Tocktoo  
Alma Nayokpuk*

### Bear Feet (Ee-tee-yait)

Most of the people like the bear feet better than the meat. We cook them well, add salt. Four feet would take about one teaspoon salt. Take

them out of the pot and let them get cool. Eat them with seal oil.

*Nellie Okpowruk*

*to this simple set of instructions for what must be an adult delicacy:*

### Ptarmigan Small Intestine

Cook the small intestines about 5 seconds in boiling water. Old men and women always want to eat them.

*Alma Nayokpuk*

*Although the bulk of the 80 recipes in the cookbook are devoted to main courses, the students did include vegetable dishes along with a few desserts like:*

### Eskimo Ice Cream

Grate reindeer tallow into small pieces. Add seal oil slowly while beating with hand. After some seal oil has been used, then add a little water while whipping. Continue adding seal oil and water until white and fluffy. Any berries can be added to it.

*Morris Kiyutelluk  
Stewart Tocktoo*

*Anyone who would like to learn more about the regional cuisine of Shishmaref, Alaska, can order the cookbook from Alaska Crippled Children and Adults, P.O. Box 2432, Anchorage, AK 99510.* ■ ■



# Books for Country Living ...

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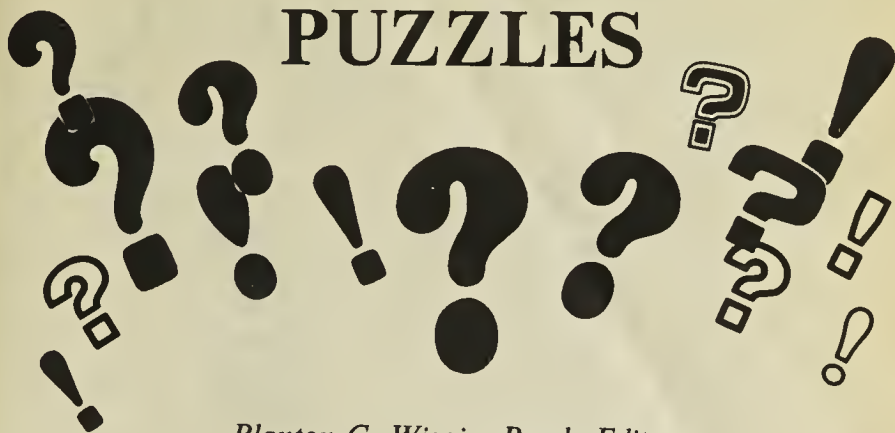
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Old Farmer's Almanac 1982  
**OLD AND NEW  
 MATHEMATICAL  
 PUZZLES**



*Blanton C. Wiggin, Puzzle Editor*

For 1982, here is an assortment of 15 timely and classical puzzles. They are graded for difficulty, so that there should be something of interest for everyone. We hope you find them challenging. No calculus, computers, or tricks. We try to include specialized knowledge, if needed, in the puzzle statement.

We will award one prize of \$50.00 for the best set of solutions to puzzles 12 through 15 received before March 1, 1982. The answers to these four are omitted here.

We use a point system to judge the prize set. A basic, unadorned, correct answer is 20 points. For a thorough analysis, an elegant or novel answer, up to 5 points extra. Numerical errors lose only 2 or 3 points, if the method is understood. After April 1, we will send the answers to these four, together with a discussion of other answers, to anyone sending 25¢ and a self-addressed stamped envelope to "Puzzle Answers," *Old Farmer's Almanac*, Dublin, New Hampshire 03444.

We'll pay \$15.00 for any original puzzles we use in the 1983 *Old Farmer's Almanac*. Closing date for submission is March 1, 1982. Entries become the property of Yankee, Inc., and cannot be acknowledged or returned. In addition to submitting a puzzle, tell us, please, the type of puzzle you like best, such as magic squares, geometry, time-rate-quantity, mazes, logic, number substitutions, etc.

In 1981, the winner was Newton Amos of St. Louis; next was J. E. Holcomb of Cleveland, Ohio, followed by Leon Kreidler of Sheboygan, Wisconsin. Kreidler's 23 on the trisection puzzle was the individual high.

Please submit your favorite puzzles and send your answers early for puzzles 12-15. Use a separate sheet for each puzzle or answer, and be sure each sheet has your name and address. Good luck.

*(Answers to 1982 puzzles are on page 144.)*

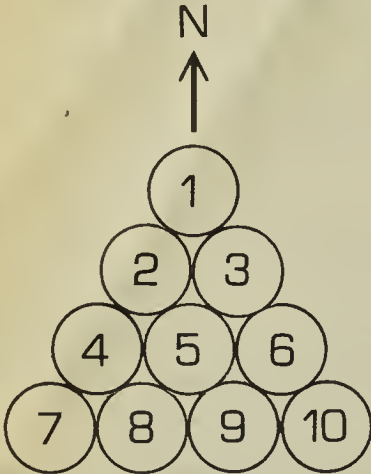
*(puzzles begin on next page)*

**1. Legislative License***(Difficulty: 1)*

Senator Phoghorn announced that his mail was running 3 to 1 in favor of his bill. Actually the senator miscounted: one letter which he thought was "for" the bill was really "against"; the ratio was only 2 to 1 for the bill. How many letters had he received? *Chuck Lentz, Grand Island, Neb.*

**2. Turning Triangle***(Difficulty: 1)*

Can you move just 3 pennies and make a 10-coin triangle that points south? *Sophia Kowalcyk, South Boston, Mass.*

**3. Turkey Transfer***(Difficulty: 2)*

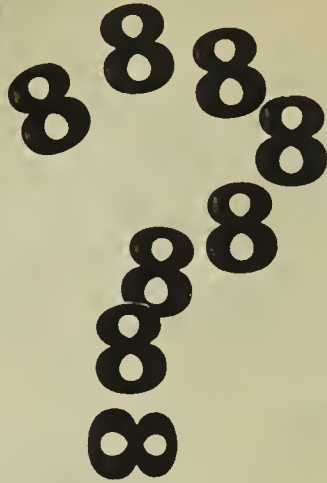
Tom Traveler had to get his dog, a turkey, and some grain across a river in his small boat, with room for only one thing besides Tom. Problem is that the turkey will eat the grain, and the dog will eat the turkey when left alone. How does he get them all safely across? *Julie Hampton, Fayetteville, Ark.*

**4. A Pocket Full of Change***(Difficulty: 2)*

Using quarters, dimes, and nickels, how many different combinations can you make in which 100 coins will have a total value of ten dollars? *G. R. Ray, DeKalb, Ill.*

**5. Crazy Eights***(Difficulty: 2)*

How can you arrange eight 8's to equal 1000? *Anne Kendall, Jersey City, N.J.*

**6. Calendar Contortions***(Difficulty: 3)*

Suppose a person lives through 12 consecutive leap-year days. What is his maximum possible age? Minimum? *E. St. Jean, So. Portland, Me.*

**7. Number Maze***(Difficulty: 3)*

What are the next numbers in these series:

a. 15, 46, 23, 70, 35, 106, 53, 160, 80

b. 17, 52, 26, 13

c. Do they ever reach 1?

d. Can you construct a similar full series starting at 25 and ending at 1? *Henry Freniere, Franklin, Mass.*

**8. Coin Confusion***(Difficulty: 3)*

While Gresham's Law was removing silver coins from circulation in the mid-sixties, many people separated rolls of silver from the new imitation coins. One sorter accidentally mixed a roll of 9-gram coins with 9 rolls of 10-gram.

Using only a scale, not a balance, how did he identify the roll of 9-gram coins in only one weighing? *Mustafa Tayfur, Pittsburgh, Penn.*



**9. Spider and Fly***(Difficulty: 4)*

A room is 30 feet long, 12 feet high, and 12 feet wide. A fly is standing at the center of one end wall, 1 foot from the ceiling. On the other end wall, a spider is watching from the center, 1 foot from the floor. What is the shortest distance the spider must walk to reach the fly? He must remain in contact with the room surfaces at all times (no flying or swinging). See 1969 OFA.

**10. Lowen's Lesson***(Difficulty: 4)*

All 14 edges of a pentahedron and a tetrahedron are the same length. If 3 edges of one solid are carefully matched to, and glued against a congruent face of the other,

a. What is the resulting solid?

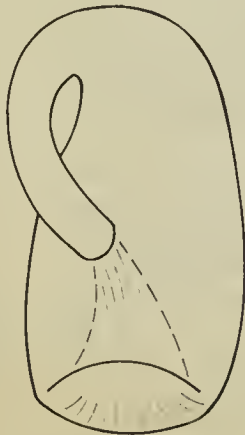
b. And going a step further, what is its volume? *Daniel Lowen, Cocoa Beach, Florida.*

**11. Klein Stein's Century***(Difficulty: 4)*

If the "outside" surface of a thin-walled drinking glass stops at the edge, and the other side of the wall is a second, or "inside" surface,

a. How would you describe this edgeless antique Klein Bottle, devised in 1882?

b. How many surfaces has it? *Agnes Connors, Peabody, Mass.*

**12. Full Packed***(Difficulty: 5)*

What is the maximum number of 1-inch-diameter non-compressible balls you can pack into a cubic box that is 100 inches on the inside edge, and then close the top completely? *Mary E. Nightingale, Wayland, Mass.*

**13. Ten to Myriad***(Difficulty: 5)*

What number is missing from this series:

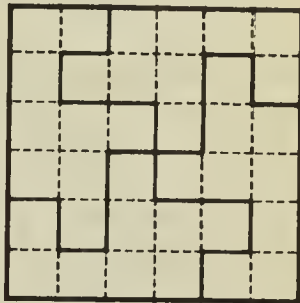
10, 11, 12, 13, 14, 15, 16, 17, 20, 22, 24, —, 100, 121, 10000. *Ed Pluhowski, Rockville, Md.*

**14. Polyomino Plats***(Difficulty: 5)*

How many uniquely different sets of 4 identical 9-block plats can you devise, which can be assembled to completely cover a 6 x 6-block checkerboard, using grid lines only, no diagonals?

For simplicity, no flipping or mirror images. All plats are contiguous; all blocks in a plat must touch along at least one edge.

A sample:



*Ed Lambert, Needham, Mass.*

**15. Four Fours***(Difficulty: 5)*

Can you arrange four 4's using any recognized math or function symbol, or abbreviations, but no other digits, to equal 131?

For example,

$$\pi + 4^4 - \log\sqrt{4^4} - \pi = 254.$$

Please explain your unusual symbols. *Carl Brisson, New York City*

ANSWERS TO PUZZLES ON PAGES 142-143

- (1) 12
- (2) Move points 1, 7 and 10 to the centers of the sides at 2-4, 8-9, and 6-3.
- (3) 1 over: turkey  
 1 back —  
 2 over: grain  
 2 back: turkey  
 3 over: dog  
 3 back: —  
 4 over: turkey  
 (or interchange 2 & 3 over.)
- (4) 24
- | <i>Quarters</i> | <i>Dimes</i> | <i>Nickels</i> |
|-----------------|--------------|----------------|
| 1               | 96           | 3              |
| 2               | 92           | 6              |
| 3               | 88           | 9              |
| 4               | 84           | 12             |
| and so on       |              |                |
| down to 24      | 4            | 72             |
- (5)  $888 + 88 + 8 + 8 + 8 = 1000$
- (6) 55 yrs, 364 days (over a turn of century); 44 yrs, 1 day
- (7) a. 40 b. 40 c. Yes  
 d. 25, 76, 38, 19, 58, 29, 88, 44, 22, 11, 34, 17, 52, 26, 13, 40, 20, 10, 5, 16, 8, 4, 2, 1.
- (8) He took 1 coin from roll 1, 2 from 2, etc., marked them and weighed them together. Based on a total of all 10-gram coins, if the scale read 1 gram less, it was roll 1, 2 grams short meant roll 2, etc.
- (9) 40 Feet. Imagine the room as a box opened out flat and draw a straight line between S and F.
- (10) a. A pentahedron;  
 b. (edge)  $1/2 \sqrt{2}$
- (11) a. Confusing. The inside surface becomes outside and vice versa. b. One.
- (12-15) Prize set. See instructions, p. 141.

## ≡ ARTHRITIS ≡

Learn the hows and whys of arthritis, the start of its attack, how the body can cleanse itself of this painful and crippling disease. Step by step, easy to follow information. This is some of what you will find in this amazing booklet. The subject is covered in great detail and offered at no risk. Simply return the booklet for a refund if not satisfied. Order copies of "Fully Mobile Bodies" by Robert Smith. The time to stop this ugly disease is before the crippling stages develop.

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# Rainy Day Amusements

(answers on page 150)

## THIS WILL DATE YOU

If you dare to admit your age, or just want a challenge, try to match the 1940s slang word at left with its meaning, at that time, on the right.

- |                  |                         |
|------------------|-------------------------|
| 1. Alkali        | A. Detective            |
| 2. Backs         | B. Convict              |
| 3. Cackleberry   | C. Caboose of a train   |
| 4. Eye           | D. Immediately          |
| 5. Fin           | E. Counterfeit money    |
| 6. Gee           | F. Strict               |
| 7. Hack          | G. Coffee               |
| 8. Ice           | H. Lawyer               |
| 9. Java          | I. Five-dollar bill     |
| 10. Kegler       | J. Short motion picture |
| 11. Lag          | K. Glass of liquor      |
| 12. Mouthpiece   | L. Sailor               |
| 13. Out          | M. Coffee               |
| 14. P.D.Q.       | N. An excuse            |
| 15. Quickie      | O. Bowler               |
| 16. Scotch       | P. To run away          |
| 17. Tar          | Q. Egg                  |
| 18. Uncle Dudley | R. Xylophone            |
| 19. Vamoose      | S. The speaker          |
| 20. Woodpile     | T. Diamonds             |

## THE HEADLINE GAME

Use the letters of a famous person's name to make a headline which describes that person; for example: Adam could be ADMITS DEVOURING APPLE MISTAKE. Or Eve might come out EATS VEGETABLE, EVICTED. (Each letter in the name forms the first letter of a word in the headline.) The more you can catch that special quality of newspaper headlines, the better. Try your hand at the following names for which you'll find suggested headlines on the following page. Once you've mastered these you're off on your own:

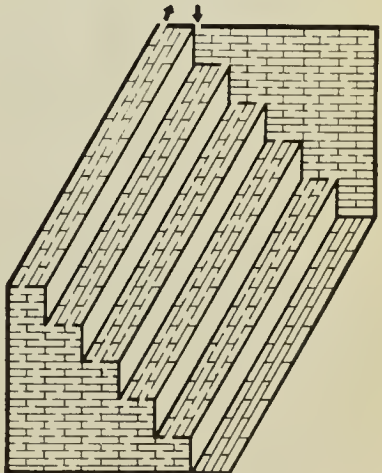
Scrooge, Ibsen, U.S. Grant, Franklin, Cleopatra.

## STAIRCASE

Look at these stairs any way you like and you'll still feel you could climb them. Whether you look at the page as it is or turn it sideways or turn

it upside down, you'll still find stairs to climb.

It's amazing — so amazing, in fact, that it's a maze as well as an eye-teaser. Using tracing paper, go in at one arrow and see how long it takes you to come out at the other.



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# A London University "Crash-Loss" Wonder Diet ... Burns Away More Body Fat Each Day Than 15 Hours Of Non-Stop Exercise!

as much as  
**4 SIZES SMALLER**  
IN JUST 14 DAYS!

**Shrinks Down Your  
Waistline As Much As  
A FULL SIZE SMALLER  
IN JUST 24 HOURS  
4 SIZES SMALLER  
IN JUST 14 DAYS!**

**YOU ACTUALLY SHRINK YOUR BODY'S  
FAT CELLS STARTING IN JUST HOURS!**

What you see on this page is news of a fantastic crash loss program—the remarkable super slim-down diet from a London University—that speeds up your body's rate of fat burn-off so that, IN JUST A MATTER OF HOURS, you start to burn away clinging layers of fat... break down bulging pockets of flab... drain away excess puffy fluid, just like hot water melts down ice... so that, in just the first 48 hours, excess fat, flab, fluid and fat gets melted away at such a staggering rate of speed you:

**LOSE up to 1 lb. EVERY 8 to 12 HOURS**

**LOSE up to 1½ to 2 lbs. EACH DAY!**

Yes, lose weight by the hour, carve away inches by the week and as stated above, and we feel compelled to repeat... shrink down as much as 4 sizes smaller IN JUST 14 DAYS!

**GOVERNMENT OFFICIAL LOSES  
10 POUNDS IN JUST 72 HOURS—**

So effectively does this University wonder "crash-loss" diet step up your system's rate of fat burn-off, that:

■ When tested at one of medical science's foremost research centers on scores of grossly overweight men and women... they lost as much as 7 lbs. of excess fat, flab and fluid IN JUST THE FIRST 72 HOURS ALONE... and as much as another 3-5—even 7 POUNDS MORE the next 14 days!

■ Even more amazing... when tested not on ordinary overweight people but on the most extreme cases of obesity... it EVAPORATED up to 10 POUNDS OF FAT, FLUID AND FLAB IN JUST 3 DAYS TIME!

**AS MUCH AS 50% OF ALL EXCESS WEIGHT  
GONE IN JUST 14 DAYS!**

■ But most mind boggling of all... when tested on average overweight people... who for years lugged around a 'spare tire' bulge of 10, 15 or even 20 extra sagging pounds... IT ACTUALLY MELTED AWAY AS MUCH AS 50% OF ALL EXCESS WEIGHT IN JUST 14 DAYS!

Yes, stepped up their body's rate of fat burn-off and melted away hard set fat with OVER 20 TIMES THE SPEED OF EVEN BRUTAL EXERCISE!



**TURNS YOUR ENTIRE BODY  
INTO A SUPER FAT-BURNING FURNACE!**

In fact, based upon Calorie Burn-Off Research From California's Leading Medical School, the calorie-deficit created in your system by this 'crash-loss' high-burn program, (a staggering deficit of as much as 2,400 calories a day off required daily intake) works with such breathtaking speed you actually:

**BURN AWAY MORE FAT EACH DAY than**

- **Running 100 Miles A Week**
- **or—over 3,000 sit-ups and push-ups a day**
- **or—10 Solid Hours of Weight-lift workouts**
- **or—even 15 hours of non-stop Marine Corps calisthenics!**

**WAKE UP SLIMMER THE VERY FIRST MORNING!**

What is this amazing fat-destroyer wonder program that helps to burn away fat by the hour—carve away inches by the week?

## In fact, of all medically sound reducing programs ONLY TOTAL STARVATION WORKS FASTER!

Briefly stated . . . It is a London University crash-burn diet, a remarkably simple way to take special combinations of high-burn foods and create what doctors call a "hypocaloric effect" to take place inside their bodies . . . that turns their system into a GIANT FAT BURNING MACHINE! Yes, actually reverses your body's fat build-up process as you COMPLETELY STOP EXCESS fat-builder calories from entering your system . . . or being absorbed by your body and turned into fat like in the past! So obviously, down go the calories, up goes the rate of fat-burn-off and off come the pounds and inches at a rate that absolutely staggers the imagination!

Yes, a TOTAL FAT-DESTROYER program that literally "ignites" a fat-burning chain-reaction inside your system . . . revs up your body's rate of fat burn-off . . . and ACTUALLY SHRINKS YOUR BODY'S FAT CELLS starting in just hours.

Think of it! With each tick of the clock, your body burns away a steady flow of fat-builder calories . . . melts down even the most stubborn fatty bulges . . . so you lose weight like never before . . . LOSE IT BY THE HOUR . . . all starting the very first day. In fact, of all medically sound reducing programs, ONLY TOTAL STARVATION WORKS FASTER!

Because, quite obviously . . . since this University's ALL OUT ASSAULT ON FAT lowers your system's rate of calorie intake . . . raises the level of calorie burn-off . . . "revs-up" that rate of body-fat burn-off . . . pounds and inches vanish at a rate that in plain simple talk is ABSOLUTELY MIND BLOWING!

World's Leading Medical Authority on Obesity Reports:

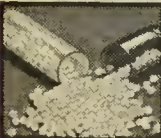
**'...as much as 50% of all excess fat gone in just 14 days.'**

### AMAZING "FURNACE-IN-A-CAPSULE" HELPS TRIGGER THE MOST DYNAMITE FAT-BURN SPREE OF YOUR LIFE!

Now comes the most exciting news of all. Because, now, from London, England comes the thrilling announcement and release to the American public of a wondrous reducing-aid formula that not only works before meals to reduce hunger, but after meals supplements this University "crash-loss" diet and helps you keep the fat-burning chain-reaction going in your body non-stop all day long.

Called "BIO-THENE/100," these amazing time-release capsules work in your body from morning 'til night to help you lose weight with a 2-stage all-out attack.

STAGE 1: Turns off your hunger drive . . . that maddening urge to eat, just like you turn off a light switch. Makes it easier to lower calorie intake.



#### IF YOU READ NOTHING ELSE, READ THIS

This program involves a high-speed crash-loss diet that lowers calorie intake, essential to the reduction of body weight. Such results cannot be achieved solely through the use of the capsules. The more

overweight you are, the higher caloric requirements, the more you should lose the faster you should lose it. Before starting this weight-loss program consult with physician to be sure you are in normal health, that your only problem is excess weight and simple obesity. Individuals with high blood pressure, diabetes, heart, kidney disease, thyroid problems, or pregnant or nursing women should not use except on advice of a physician. Do not exceed recommended dosage.

STAGE 2: Throughout the day, releases into your system tiny grains of a special bio-extract that safely, surely, TURNS UP the level of your fat-burning metabolism after every time food enters your body on this London University wonder diet program.

Meaning the food you take in, the calories you enjoy are burned away even more quickly by your own stepped-up metabolic system. Yes, metabolized and oxidized in as little as 2 to 3 hours after eating!

#### THE FOOD YOU EAT NO LONGER TURNS TO FAT!

So, obviously, since it takes far less food to satisfy you, lowering calories is a lark. And since the calories you do take in on this "crash-loss" diet program are burned right out of your body after every time you eat . . . you start to TURN SLIMMER, not only the very first day . . . BUT—after the very first meal—and every meal thereafter! as excess fat and fluid start to disappear—GET OXIDIZED BY THE HOUR!

#### PROVE EVERY LOST OUNCE, EVERY LOST INCH—ENTIRELY AT OUR RISK

Right now, look at your figure in the mirror and ask yourself these questions—the solution to which is right now within your grasp.

How would I look one week from today as much as 5 to 10 pounds lighter?

How would I look in 2 weeks with my waistline 2 to 4 sizes smaller?

BUT DON'T STOP THERE—If you need to lose still more inches, then continue the University "crash-loss" diet, continue to take BIO-THENE/100 until you've reached the figure of your dreams:

- 6 INCHES CARVED OFF YOUR HIPS . . . UP TO ANOTHER
- 3 INCHES CARVED OFF YOUR THIGHS . . . ANOTHER
- 4 INCHES OFF YOUR BUTTOCKS . . . ANOTHER
- 6 INCHES OFF YOUR STOMACH . . . ANOTHER
- 6 INCHES OFF YOUR WAISTLINE!

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Great Neck, N.Y. 11021

Yes, I want to lose more weight each day than 15 hours of non-stop exercise. Please RUSH me the BIO-THENE/100 "Crash-Loss" program as indicated below. I must lose pounds and inches as never before or my money refunded in full (less postage and handling).

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- (#030) 30 Day Supply only \$12.95 (plus \$1 postage and handling)
- (#060) 60 Day Supply only \$20 (We pay all postage and handling)
- (#090) 90 Day Supply only \$30 (We pay all postage and handling)

Amount enclosed \$ \_\_\_\_\_ (N.Y. Residents, please add sales tax.) No C.O.D.'s please.

CHARGE IT! (\$10.00 Minimum Charge)

VISA (BankAmericard)  Master Charge

Card # \_\_\_\_\_ Exp. \_\_\_\_\_  
Date: \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Div. of London Diet Research, Ltd.

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## WINNING RECIPES IN THE 1981 RECIPE CONTEST "Fried Chicken"

### First Prize:

- 1 fryer, cut up
- ¼ cup honey
- ½ cup undiluted orange juice
- ½ cup water
- 1 cup flour
- 1 teaspoon salt
- ¼ teaspoon pepper
- ½ cup fine dry bread crumbs
- ½ cup ground almonds



Mix honey with orange juice and water. In separate bowl, combine flour, salt, and pepper. Place breadcrumbs in a third bowl, and almonds in a fourth. Dip chicken pieces first in flour to coat them thoroughly, then dip into juice mixture. Then roll in crumbs to coat thoroughly, dip a second time into juice, and roll in ground almonds. Fry in one inch of clear oil at 360°, until crisp and cooked through. Serves 4-6. *John Collins, Yakima, Washington*

### Second Prize:

- 2 whole chicken breasts, skinned, boned, and halved
- 4 pieces Monterey Jack cheese, ¼" x 1½" x 3"
- 4 sprigs fresh sage, or ½ teaspoon dried sage
- 2 eggs
- 1 tablespoon Parmesan cheese
- ¼ teaspoon each salt and pepper
- 1 tablespoon minced fresh parsley
- 1 cup flour
- ¼ cup butter, melted



Cut a deep pocket in each half of chicken breast, being careful not to cut all the way through. In each pocket place a piece of cheese and a sprig of sage, or ½ teaspoon dried sage. Cover and chill 2 hours or longer. Combine eggs, Parmesan cheese, salt, pepper, and parsley in large bowl and beat thoroughly. Roll chilled chicken pieces in flour, then dip in egg mixture; repeat twice. Heat butter in heavy skillet and sauté breasts until crisp, then bake in oven 10-15 minutes at 375° to cook breasts through, melt cheese, and brown coating. Serves 4. *Mrs. Charles L. Hunter, Warwick, Rhode Island*

### Third Prize:

- 1 fryer, cut into pieces
- 2 tablespoons brown sugar
- 1 teaspoon oregano
- 1 teaspoon dried parsley
- 1 teaspoon onion salt
- pinch cayenne pepper
- 2 teaspoons paprika
- 1 cup whole wheat flour
- ½ cup sesame seeds
- ¾ cup butter or margarine



Combine sugar, oregano, parsley, onion salt, cayenne, paprika, and flour in bowl and blend thoroughly. Wash chicken pieces thoroughly and coat with flour mixture. Melt butter and pour into baking pan. Arrange chicken pieces in pan and sprinkle with half of sesame seeds. Bake at 350° for 30 minutes. Turn pieces over, dust with flour mixture, and then sprinkle with remaining seeds. Bake 30 minutes longer, until chicken is tender and crust is crisp. Serves 4-6. *Louis Megyesi, East Middlebury, Vermont*



## WINNING ESSAYS OF THE 1981 ESSAY CONTEST

### “Unusual, Sure-fire Ways to Raise Money for Your Church, Fire Company, or Other Good Cause”

#### First Prize:

Sure-fire raiser of funds is a chicken barbecue dinner.  
Brings in the greatest moneys; members and merchants are givers.  
Donated labor cooks the food bought with the group treasury.  
All join in the gay mood. Beverages extra, pies savory.  
Chances played on a cake-walk, around the musical chair.  
None there will balk at dollars gathered by auctioneer.  
Bid on elaborate cakes! Come and eat your fill!  
Happy day this party makes, while dollars fill the till.  
*Nora Lee Crain, Galesburg, Illinois*

**Second Prize:** Gardeners donate surplus fresh produce to stock a roadside market. To tempt canners, display and sell home-made jellies, relishes, pickles. Offer vegetable starts and proven seeds for the next season's planting. Offer recycled garden tools, kitchen utensils, handmade recipe files, cookbook holders, aprons, placemats, potholders. Compile a cookbook of the group's best recipes, including a chapter on putting food by. Sell the labors of the young folks on an hourly basis to till and plant gardens, rake leaves, pull weeds. *Ms. Jimmie A. Green, Mira Loma, California*

**Third Prize:** Almost everybody loves homemade pie. With donated fruit, a price break on other supplies, and a staff of 12 fun-loving pie-bakers, and the use of the Mason's and Fire Hall's ovens, we made \$1500 in one day. All pies were ordered ahead at \$3.50 apiece. Baking and delivering were totally organized, so pies arrived warm at their destination. We baked 500 pies, did a lot of work, had a lot of fun, and benefited the primary school's playground renovation project. *Carol May, Williamson, New York*

## 1982 ESSAY CONTEST

For 1982, prizes (1st prize \$50, 2nd \$25, 3rd \$15) will be awarded for the three best 100-word essays on this question: "Should Thomas Jefferson's Birthday, April 13, be celebrated as a national holiday each year?" All entries become the property of Yankee, Inc., which reserves all rights to the material submitted. Winners will be announced in the 1983 OFA. Deadline is May 1, 1982. Address: Essay Contest, *Old Farmer's Almanac*, Dublin, NH 03444.



## 1982 RECIPE CONTEST

For 1982, prizes (1st prize \$50, 2nd \$25, 3rd \$15) will be awarded for the best original pickle recipe. Dill, zucchini, watermelon — all manner of pickles — qualify for this contest. All entries become the property of Yankee, Inc., which reserves all rights to the material submitted. Winners will be announced in the 1983 OFA. Deadline is April 1, 1982. Address: Pickle Recipe Contest, *Old Farmer's Almanac*, Dublin, NH 03444.

## THE MOST TRAVELED DOG IN THE WHOLE WORLD

By accurate estimate he covered over 143,000 miles  
in his lifetime!

by Henry N. Ferguson

□ ONE SPRING MORNING IN 1888 A nondescript dog resembling an enlarged version of a Scottish terrier poked his nose into the open doorway of the United States Post Office in Albany, New York. The clerks quickly adopted him as their mascot and named him Owney.

When the mailmen took the dog to the railway station one day, it was love at first sight. Very soon Owney found his way aboard a railway mail car that was rapidly leaving Albany behind. From that day forward, he became the property of postal workers everywhere.

The postal clerks attached a collar around his neck on which was inscribed: "Owney, Albany Post Office, Albany, New York." Other postal workers in turn attached their tags to Owney when he visited their offices. Most of these still survive and record his visits to such places as Denver, Atlanta, Chicago, St. Louis, San

Francisco, El Paso, Paris (Ky.), Bald Knob (Ark.), Canada and Mexico.

In 1895, Owney arrived in Tacoma, Washington, following a visit to Alaska. From there he embarked on a trip around the world by steamer, arriving in New York on December 24. Five days later, on December 29, Owney arrived in Tacoma by train, where he received a hero's welcome. It had taken him 132 days to travel around the world.

Despite this triumph, Owney's story does not have a happy ending. By this time he was an old dog. Invited to make an appearance in Toledo, Ohio, he bit the postal clerk who had been assigned to meet him at the Union Station. The clerk called the police, who immediately concluded the aging dog was dangerous and ordered him destroyed.

Today, Owney's skeleton sits on a low pedestal inside a large glass jar in the Smithsonian Institution's Museum of History and Technology. ■ ■

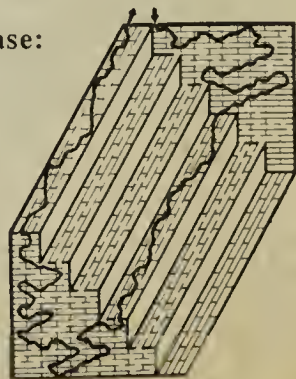
### ANSWERS TO RAINY DAY AMUSEMENTS (from page 145)

**Slang Quiz:** 1 - M (or G), 2 - E, 3 - Q, 4 - A, 5 - I, 6 - K, 7 - C, 8 - T, 9 - G (or M), 10 - O, 11 - B, 12 - H, 13 - N, 14 - D, 15 - J, 16 - F, 17 - L, 18 - S, 19 - P, 20 - R.

**Headline Game:** Scrooge: SCORNS CHRISTMAS, RELENTS ONLY ON GHOSTLY ENTREATY; Ibsen: INTERESTING, BUT SO EXCRUCIATINGLY NORWEGIAN; U.S. Grant: UNSHAVEN SOLDIER GRINDS REBEL ARMIES, NEVER TEETOTALS; Franklin: FOR RAINY-DAY AMUSEMENT, NEGLECT KITES - LIGHTNING IS NEAR; Cleopatra:

CAESAR'S LOVELY EGYPTIAN ONLY PERMITS ANTONY (to) TOUCH ROYAL ASP

**Staircase:**



# Secrets of the Zodiac

## Famous Debowelled Man of the Signs



- ♈ Aries, head. ARI  
Mar. 21-Apr. 19
- ♉ Taurus, neck. TAU  
Apr. 20-May 20
- ♊ Gemini, arms. G'M  
May 21-June 21
- ♋ Cancer, breast. CNC  
June 22-July 22
- ♌ Leo, heart. LEO  
July 23-Aug. 22
- ♍ Virgo, belly. VIR  
Aug. 23-Sept. 22
- ♎ Libra, reins. LIB  
Sept. 23-Oct. 22
- ♏ Scorpio, secrets. SCO  
Oct. 23-Nov. 21
- ♐ Sagittarius, thighs. SGR  
Nov. 22-Dec. 21
- ♑ Capricorn, knees. CAP  
Dec. 22-Jan. 19
- ♒ Aquarius, legs. AQR  
Jan. 20-Feb. 18
- ♓ Pisces, feet. PSC  
Feb. 19-Mar. 20

The ancients believed that from the knowledge of the location of each planet in the heavens at the exact hour of one's birth one can foresee what kind of a life a child will have, what the child's inclinations will be, and what sort of education will best serve the child. The heavens (called the Zodiac) were divided into 12 equal sections (called Signs) of about 30 days each. There follow on the next two pages brief characterizations of each of these signs. Your sign is determined by the position of the Sun at the time of your birth. If you were born on October 15 then the Sun was in Libra and that is your sign. Each person's horoscope (chart showing the position of the Sun, Moon and all the planets in relation to the Earth at the exact moment of birth) is of course more complex. If you were born on October 15, 1929, the Moon was in the sign Gemini, Mercury in Capricorn, Venus in Sagittarius, and so on. If you were born at noon on October 15 the sign Cancer is rising in your horoscope; if you were born at sundown Aries is rising. Each person thus has a number of signs active in his or her horoscope.

The ancients also associated each of the signs with a part of the body over which they felt the sign held some influence. This belief is illustrated by the famous debowelled man of the signs shown above. Apparently, the first sign of the Zodiac — Aries — was attributed to the head and the rest of the signs fell into place moving down the body, ending with Pisces at the feet.

Many Almanac readers have asked for information as to which activities are best suited to which signs. Below is a listing of activities with letters that appear under each appropriate sign on the following two pages. Moon signs are also used to determine best times for certain jobs — especially gardening — so these signs for each day of November 1981-December 1982 are tabulated on p. 79 along with general rules regarding gardening duties best suited to each sign.

- |   |  |
|---|--|
| A Cutting grass or brush, weeding.          | H Weaning.                                 |
| B Cutting and setting posts or timbers.     | I Slaughtering.                            |
| C Cutting hay, pruning.                     | J Operations, pulling teeth.               |
| D Planting above-ground crops.              | K Hairdos, sheep shearing, buying clothes. |
| E Planting root crops, house painting.      | L Business, gambling, taking risks.        |
| F Harvesting crops or herbs.                | M Fishing.                                 |
| G Breeding, setting hens, creating, baking. | N Travel, marriage, romance.               |



**ARIES**

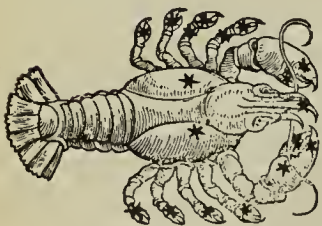
Symbol: ♈ Element: Fire. Planet: Mars.  
 Belongs to those born Mar. 21-Apr. 19.  
 Traits: Energetic, assertive, impulsive.  
 Compatible with: Leo, Sagittarius, Gemini,  
 Aquarius.  
 Attracted to Virgo.  
 Careers: Experimental science, exploration,  
 advertising.  
 Best for D, L, G, F, I

**TAURUS**

Symbol: ♉ Element: Earth. Planet: Venus.  
 Belongs to those born Apr. 20-May 20.  
 Traits: Persistent, determined, enduring, loyal.  
 Compatible with: Virgo, Capricorn, Cancer,  
 Pisces.  
 Attracted to Libra.  
 Careers: Engineering, farming, building.  
 Best for E, K, B, I, F, G

**GEMINI**

Symbol: ♊ Element: Air. Planet: Mercury.  
 Belongs to those born May 21-June 21.  
 Traits: Adaptable, lively, talkative, versatile.  
 Compatible with: Libra, Aquarius, Leo, Aries.  
 Attracted to Scorpio.  
 Careers: Crafts, commentary, law, clergy.  
 Best for J, G, L, A, I, F

**CANCER**

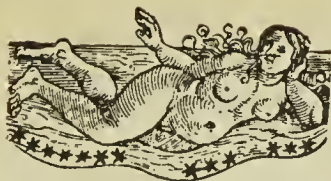
Symbol: ♋ Element: Water. Planet: Moon.  
 Belongs to those born June 22-July 22.  
 Traits: Compassionate, protective, imaginative,  
 thrifty.  
 Compatible with: Scorpio, Pisces, Virgo, Taurus.  
 Attracted to Sagittarius.  
 Careers: Business, art, history, antiques.  
 Best for D, M, K, G, I, A, C

**LEO**

Symbol: ♌ Element: Fire. Planet: Sun.  
 Belongs to those born July 23-Aug. 22.  
 Traits: Generous, creative, well organized.  
 Compatible with: Sagittarius, Aries, Libra,  
 Gemini.  
 Attracted to Capricorn.  
 Careers: Medicine, labor, political science.  
 Best for K, B, A, F, N

**VIRGO**

Symbol: ♍ Element: Earth. Planet: Mercury.  
 Belongs to those born Aug. 23-Sept. 22.  
 Traits: Discriminating, analytical, modest,  
 hypercritical.  
 Compatible with: Capricorn, Taurus, Scorpio,  
 Cancer.  
 Attracted to Aquarius.  
 Careers: Banking, accounting, teaching, writing.  
 Best for J, K, L, A, I, F



## LIBRA

Symbol: ♎ Element: Air. Planet: Venus.  
Belongs to those born Sept. 23-Oct. 22.  
Traits: Charming, diplomatic, idealistic,  
indecisive.

Compatible with: Aquarius, Gemini, Sagittarius,  
Leo.

Attracted to Pisces.

Careers: Diplomacy, social work, politics.  
Best for D, N, K, G, I

## SCORPIO

Symbol: ♏ Element: Water. Planet: Pluto.  
Belongs to those born Oct. 23-Nov. 21.  
Traits: Subtle, intense, passionate, imaginative.  
Compatible with: Pisces, Cancer, Capricorn,  
Virgo.

Attracted to Aries.

Careers: Psychiatry, psychic research, detection,  
journalism.

Best for M, G, I, A



## SAGITTARIUS

Symbol: ♐ Element: Fire. Planet: Jupiter.  
Belongs to those born Nov. 22-Dec. 21.  
Traits: Versatile, frank, philosophical,  
optimistic.

Compatible with: Aries, Leo, Aquarius, Libra.  
Attracted to Taurus.

Careers: Music, teaching, clergy, horse training.  
Best for J, N, K, F, I, H



## CAPRICORN

Symbol: ♑ Element: Earth. Planet: Saturn.  
Belongs to those born Dec. 22-Jan. 19.  
Traits: Ambitious, disciplined, persevering,  
pessimistic.  
Compatible with: Taurus, Virgo, Pisces, Scorpio.  
Attracted to Gemini.  
Careers: Architecture, politics, civil service,  
administration.  
Best for J, G, I, H



## AQUARIUS

Symbol: ♒ Element: Air. Planet: Uranus.  
Belongs to those born Jan. 20-Feb. 18.  
Traits: Independent, unconventional, inventive,  
contrary.  
Compatible with: Gemini, Libra, Aries,  
Sagittarius.  
Attracted to Cancer.  
Careers: Music, astrology, sociology, inventing.  
Best for D, K, B, I, H, A

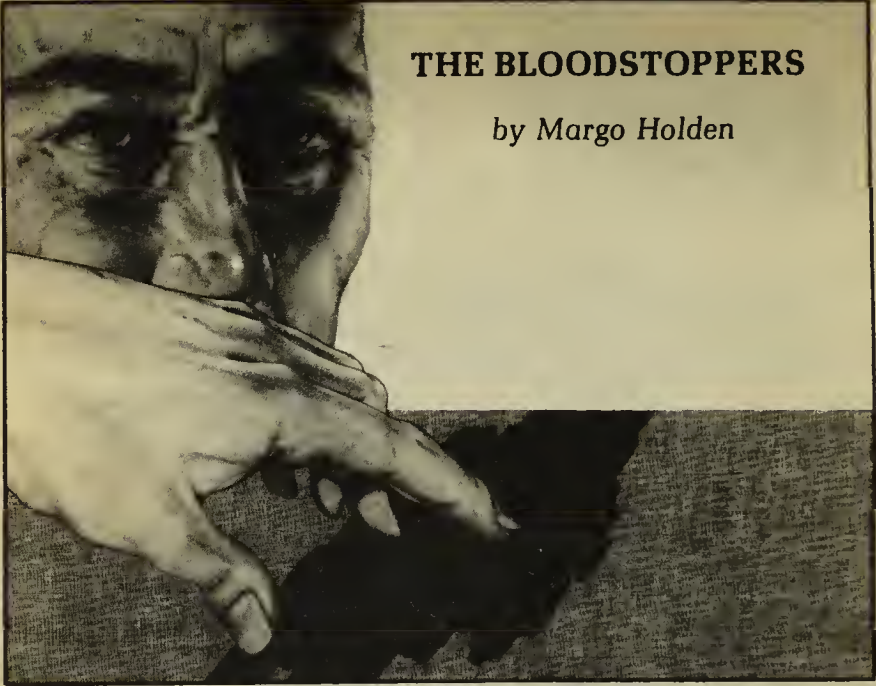


## PISCES

Symbol: ♓ Element: Water. Planet: Neptune.  
Belongs to those born Feb. 19-Mar. 20.  
Traits: Sensitive, emotional, unworldly,  
secretive.  
Compatible with: Cancer, Scorpio, Taurus,  
Capricorn.  
Attracted to Leo.  
Careers: Dance, medicine, clergy, music.  
Best for D, M, B, G, I, H, C







## THE BLOODSTOPPERS

by Margo Holden

Consult some old-time lumberjacks around the country and in Canada and many would have a story or two concerning bloodstoppers, people with the gift of stopping the flow of blood by mental power. Superstition? Hogwash? Well, the power of the human mind is often underestimated . . .

□ ONE MUST PLACE IT UNDER "folklore," we believe, this ability that some people have of stopping blood by merely knowing that someone is bleeding badly and needs their help. The bloodstoppers tried to get to the patient, or the patient was brought to them, but usually they did their bloodstopping after merely receiving word of the accident.

The bloodstoppers were most prevalent in the early lumber camps. These camps were remote, and the only conveyance out for a victim was by horse and tote sled or tote wagon. It was usually a matter of several hours to two days to get a wounded person out to town. There was not always a doctor or hospital in town, so loggers relied on the bloodstoppers for the most critical aspect of an accident — the bleeding. The men knew very well about pressure and tourni-

quets, which they used, but primarily the shout went up for a bloodstopper. The use of bloodstoppers was standard practice all over the North Woods of Maine and Canada.

I saw a bloodstopper work back in 1924 at a lumber camp. A fellow with a deep ax cut in his leg was carried in by the two fellows with whom he had been working. He was very white and weak, and blood kept running down and dripping from the stocking that was over his boot. The cook, who was the bloodstopper, was stooped over taking cookies out of the oven. When the men entered they shouted for him. He paused in taking the cookies out, looked at the wounded fellow a long half-minute and then proclaimed, "The bleeding is stopped." The men carried their chum to his bunk in the bunkhouse, cut his pant leg off, removed the clothing, and an-



nounced the bleeding was indeed stopped. In about a week's time the fellow could stand the trip out and so he was taken to his home. We heard he was back on the drive that spring.

I saw the same bloodstopper stop a violent nosebleed that the cookee had. However, the cookee was a non-believer, and after the nosebleed had been stopped he began decrying the fact that the bloodstopper had anything to do with it. He worked himself up to such a pitch that his nose started bleeding again. The cook would have nothing to do with him the second time. After a day and a night of bleeding the cookee left the camp and never came back.

We know of another close friend, Amos, who sank an ax into his foot, nearly severing it in two. A bloodstopper was called by camp phone and about that time the bleeding stopped. When I asked Amos later what it felt like, he said it was as if someone pressed twice very firmly on the cut. This led me to ask a bloodstopper once how he did his work. He said that it was nearly impossible to explain, but that he forgot everything and concentrated on the person hurt. He imagined himself right there holding the blood back and saying, "It's stopping, it's stopping, it's stopped."

Another time a small child had a severe nosebleed. None of the usual remedies seemed to help. I knew the mother well, and she and I had often talked about the veracity of all these stories of the bloodstoppers and of how handy people like them had been in the lumber camps. Of course we knew that a certain amount of superstition was involved, and although we had seen them stop blood, we ourselves did not wholly believe in their ability. However, after her little boy had had this nosebleed for three days and nights, had been cauterized twice by a doctor to no avail, and was weakening, she began to talk about going to see the bloodstopper. The whole family encouraged her; they

were tired of staying up nights with the young fellow, afraid he would choke. I said, "Go ahead, I won't tell anyone."

She drove to the bloodstopper's house. He saw the car drive into the driveway and he hobbled out to the porch. He took the scene in at once — the wan little boy at the window holding a bloody rag to his nose, the distraught mother. He raised his hand as if in salute and said, "The bleeding is stopped." So it had. The little fellow did not have another nosebleed for two years.

Because the topic has interested me I've asked around the state of Maine for more information. I find all old people who have worked in the woods can tell of times when a bloodstopper has helped someone. I have also found that many young people have heard of it from their old folks and some claim to have bloodstoppers in their own families. One farfetched story concerns a grandmother on whom the family and, in fact, the neighborhood, depended. She had only recently died when one of the young children cut himself. All efforts to staunch the blood seemed in vain. One of the family lamented, "If only Grandma were here now. How I wish she were here to help us." The bleeding stopped suddenly.

Stories and stories. There is still a lively belief in the art of the bloodstoppers. Today maybe there isn't such a desperate need for them as in the old days in the lumber camps. Today we have radios in about all the camps, and we also have mobile units. We have planes that can get into even the smaller lakes. Better woods roads allow ambulances to come into most of the camps. We have put our faith in these newer things. But the drastic urgency of events in the old days, when people mostly took care of one another, led to another kind of solution, the efficacy of which they never doubted.

■ ■

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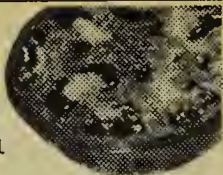
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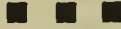
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# Anecdotes and Pleasantries

A motley collection of amazing stories, useless facts, poor advice, and strange news items.



## WHAT QUEEN ELIZABETH DRINKS EVERY DAY

As we understand it, Queen Elizabeth of England each day downs a half cup of pearl barley boiled in 2½ quarts of water, mixed with the juice of two lemons, two oranges, and a considerable quantity of honey. Keeps Her Majesty's complexion fresh.

Speaking of honey (weren't we?), a beekeeper in Virginia was recently astonished and bewildered when his bees started producing bright green honey. Eventually, he found that the bees were not gathering nectar from surrounding blossoms, but were collecting discarded syrup from a nearby cough-drop factory.

Incidentally, you don't have to live in the country to keep bees. A New York penthouse dweller, for instance, reportedly gets at least 100 pounds of honey every year from the two hives he keeps high above the streets. His bees have the run of every window-box on Fifth Avenue and all the wildflowers in Central Park.

Best bee sting remedy? Chew a pinch of pipe or other tobacco to a paste and apply it to the sting. Works every time.

*Courtesy of J.A.C. Dunn*

## SOMETHING OUR HISTORY BOOKS DON'T OFTEN MENTION

Back in 1855, U.S. Secretary of War Jefferson Davis sparkplugged a defense bill to spend \$30,000 for "the purchase of camels and dromedaries to be employed for military purposes" out in the Great American Desert.

An estimated 74 of the dim-witted creatures were soon on their way to

the U.S., and with them came Hadji Ali, a wizened, sparkling-eyed refugee from the mysterious Near East. Because his name was hard to pronounce, U.S. soldiers called the little Syrian camel driver Hi Jolly.

Under Jolly's teaching, the soldiers soon found that the stubborn mule was a gentleman compared with the ornery camel.

The beast was smelly, its breath a rotten stench, and it seemed to delight in slobbering all over its driver and biting him in any part of his soldierly anatomy. Troopers traveling at full speed were pitched around until they suffered motion sickness, and at least one soldier shot his animal for this. The creatures even ate the cactus fences that were supposed to keep them in.

But the beasts proved that camels would live up to War Department expectations in transport and supply: three camels could carry a load too much for six mules. And the "ships of the desert" could travel twice as fast as mules.

Hi Jolly, who modestly admitted he was a "fine camel doctor," superintended the drive westward, while the country marveled that inland-based soldiers could suffer from sea sickness. The camels were put to their most rigorous test in 1858 on an expedition from Camp Verde, Texas, to Fort Tejon, California. The leader, Lt. Edward Beale, called the trip a complete success.

But, soldiers being what they are, more and more of the disliked beasts failed to come back to base after every trip. Reports from members of the camel corps gave many reasons, all logical, why the camels had to be shot along the line of march.



When the Civil War broke out, the camels lost their chief supporter, Jefferson Davis, who became leader of the Confederacy. Some of the animals were sold to private concerns to transport supplies to western mining operations; a few went to zoos; many were just turned loose in the Arizona desert to fend for themselves.

Hi Jolly stayed with the Army 30 years, but his pension application, lost in red tape, was never processed and he died in poverty.

But, just west of Quartzsite, along U.S. Highway 60-70, Arizona has erected a pyramid, along the top of which marches a replica of part of the camel train the little Syrian guided along our western frontier, the only camel train in U.S. history.

by H.L. Miller

### WHICH BURNS MORE CALORIES, RIDING A BICYCLE OR MAKING YOUR BED?

*Calories used per hour:*

Bicycling (5 m.p.h.)	150-250
Bowling	200-250
Calisthenics	250-450
Card playing	75-125
Cooking	125-200
Dancing	250-450
Driving a car	75-125
Gardening	250-325
Jogging (5 m.p.h.)	450-500
Making beds	200-250
Reading	75-125
Scrubbing floors	200-250
Skiing (downhill)	350-500
Swimming	230-325
Tennis (doubles)	250-350
TV-viewing	75-125
Typing	75-125
Walking (3 m.p.h.)	200-250
Washing dishes	125-200
Writing	75-125

If you cut down on your intake of sweets and starches, your weight will decrease. Every pound taken off is equivalent to 3,500 calories burned.

### ON THE AVERAGE . . .

According to a new book, *American Averages, Amazing Facts of Everyday Life*, by Mike Feinsilber and William B. Mead . . .

- 11 million cows are milked, 3 million people go to movies, and one American in eight has a beer, all in an average American day.
- The average American blinks 25 times a minute.
- The average college student throws in a dirty word for every 11 clean ones. Also, the average American woman is just as foul-mouthed as the average American man, except she chooses different words.
- The average American laughs 15 times a day.
- On an average day in America, 28 mailmen are bitten by dogs.
- In an average year, a pack-a-day cigarette smoker takes 50,000 to 70,000 puffs.
- The average person's feet hit the floor 7,000 times a day. That's each foot.
- The average woman stays in the bathtub for a minimum of a half-hour.

**Editor's Note:** Averages, in our humble opinion, can be misleading. For instance, if you place one foot on a cake of ice and the other foot in a pail of boiling water, the "average" would say you feel just right!

### WANNA FOOL AROUND WITH THE CALENDAR — AGAIN?

If you are one of many people who have trouble remembering what comes after "Thirty days hath September . . ." then you might be interested in calendar reform. There is a movement afoot to simplify the calendar by making a year consist of 13 months, each month exactly 28 days long. The extra month would be called Sol (after our sun), and fall between June and July, thus giving those of us in the northern hemisphere an extra month of summer.



Among the advantages of this system, called the International Fixed Calendar, is the fact that nobody would need new calendars every year. Every month would begin on a Sunday and end on a Saturday, and every date would fall on the same day of the week every year. (For those of you who have been doing some quick calculating, you are right — the International Fixed Calendar has only 364 days in the year. Don't worry, though — the extra day would be stuck in between December 28 and January 1, and designated a World Holiday, identified with no month or day of the week. On leap years, there would be a second World Holiday wedged between June 28 and Sol 1.)

One of the disadvantages of the International Fixed Calendar is that 13 months can't be easily divided into quarters for business purposes. This has led to a counterproposal — the World Calendar, made up of four 91-day quarters, each consisting of a 31-day month followed by two 30-day months. Once again, it adds up to 364 days, and so one day would be set aside for general hoopla.

But perhaps you are a traditionalist. Why fool around with the calendar? you ask. It was good enough for Moses, and it's good enough for me. But, in fact, people have been fooling around with the calendar for as long as calendars have existed. But that's another story for another time . . .

*Courtesy of Tim Clark*

### A TOYOTA BY ANY OTHER NAME . . .

Last summer, a man drove up to the village general store in upstate New York, parked his vehicle out front, went in, and was waiting at the check-out counter. One of the natives, an old-timer, came in and asked the man if that was his Toyota out front. The tourist was apparently sensitive about having his customized camping vehicle mistaken for a Toyota, because he immediately launched into a long-winded disserta-

tion on how he had combined the best elements of a Ford pickup with a four-wheel-drive Toyota chassis, to come up with a truly four-season vehicle that would go anywhere. The old-timer listened very attentively until the gentleman completed what he wanted to say, then dryly, with not even a hint of emotion, looked the stranger in the eye and said, "Well, whatever it is, your brakes didn't hold, and the car is rolling down the street."

*by Jim Kell*

### A FEW SATISFYING INSULTS

- Fred Allen (1894-1956), radio comedian: "California is a fine place to live in — if you happen to be an orange."
- Ludwig van Beethoven (1770-1827), to a fellow composer: "I liked your opera. I think I will set it to music."
- Al Capp (1909-1979), cartoonist, on modern painting: "Abstract art? A product of the untalented, sold by the unprincipled to the utterly bewildered."
- Sir Winston Churchill (1874-1965), on the socialist politician Clement Attlee: "A modest little man with much to be modest about."
- Georges Clemenceau (1841-1920), French statesman: "America is the only nation in history which miraculously has gone directly from barbarism to degeneration without the usual interval of civilization."
- W.C. Fields (1879-1946), on being asked whether he liked children: "Boiled or fried?"
- Margaret Halsey (1938-), American writer: "Englishwomen's shoes look as if they had been made by someone who had often heard shoes described, but had never seen any."
- Henry Labouchere (1798-1869), English statesman, on William Gladstone, British Prime Minister: "I don't object to the Old Man's always having the ace of trumps up his sleeve, but merely to his belief that God Almighty put it there."

Abraham Lincoln (1809-65), to his general in the field, George B. McClellan: "My dear McClellan: if you don't want to use the army I should like to borrow it for a while. Yours respectfully, A. Lincoln."

- Alice Roosevelt Longworth (1884-1980), daughter of President Theodore Roosevelt, on Calvin Coolidge: "He looks as if he had been weaned on a pickle."

- Dorothy Parker (1893-1967), American writer: "That woman speaks eighteen languages, and she can't say 'No' in any of them."

- Louis Sherwin, American writer, on Hollywood: "They know only one word of more than one syllable here, and that is fillum."

- Duncan Spaeth, American writer and academic: "I know why the sun never sets on the British Empire: God wouldn't trust an Englishman in the dark."

- Oscar Wilde (1854-1900), Irish playwright: "The man who could call a spade a spade should be compelled to use one. It is the only thing he is fit for."

And:

"Of course, America had often been discovered before Columbus, but it had always been hushed up."

- The Duke of Windsor (Edward VIII of England) (1894-1972): "The thing that impresses me most about America is the way parents obey their children."

*Reprinted, with permission, from The Last Word, by Gyles Brandreth, Sterling Publishing Co. Inc., New York City.*

## WE LOVE NEW YORK BUT . . .

A lot has been said about how Manhattan Island, on which New York City is located, was purchased from the Indians for only \$24 back in 1626. What a hornswoggling those Indians took! Or did they? If Governor Peter Minuit, the man who actually did the purchasing from the Indians, had invested the \$24 in securities paying, say, 10 percent a year, that sum would have grown to more than \$4,000,000,000,000,000 today.

That's enough to give New York City's seven million residents \$600 million each. Or enough to give every inhabitant of the United States today a little gift amounting to exactly \$20 million. For each of us.

## FROZEN LIFE

### (and three freezing hints)

On December 20, 1980, 19-year-old Jean Hilliard's car slid off a remote Minnesota country road in the middle of the night. It was familiar territory for Jean and she set out on foot for friend Wally Nelson's house two miles away. There were, however, two major problems. One was that the temperature that night was down to 22 degrees below zero. Secondly, Jean was not adequately dressed for such extreme cold.

About 15 feet from her friend's house, Jean collapsed. There she remained for the rest of the night. At about 7 A.M., Wally Nelson looked out and saw her. He immediately attempted to lift her into his car to take her to the hospital. But she was frozen too stiff to bend. He had to fit her into the back seat diagonally. At the hospital, her pulse measured barely 12 beats to the minute (normal is 65 to 80 beats per minute). Her skin was too stiff to be punctured by a hypodermic needle. Her body temperature was too low to be registered on the thermometer. Her face was ashen, and her eyes were solid and unresponsive to light. After two to three hours of gradual warming, Jean began to thaw out. The ultimate miracle was that the only permanent effect of Jean's ordeal was the loss of several of her toes.

**Freezing Hints:** 1. To help prevent frostbite, do isometric exercises in six-second intervals. That means, tense all your muscles, including facial muscles. This encourages dilation of your peripheral blood vessels and increases flow of blood to your extremities. 2. Do *not* drink or smoke — both constrict blood vessels and in-

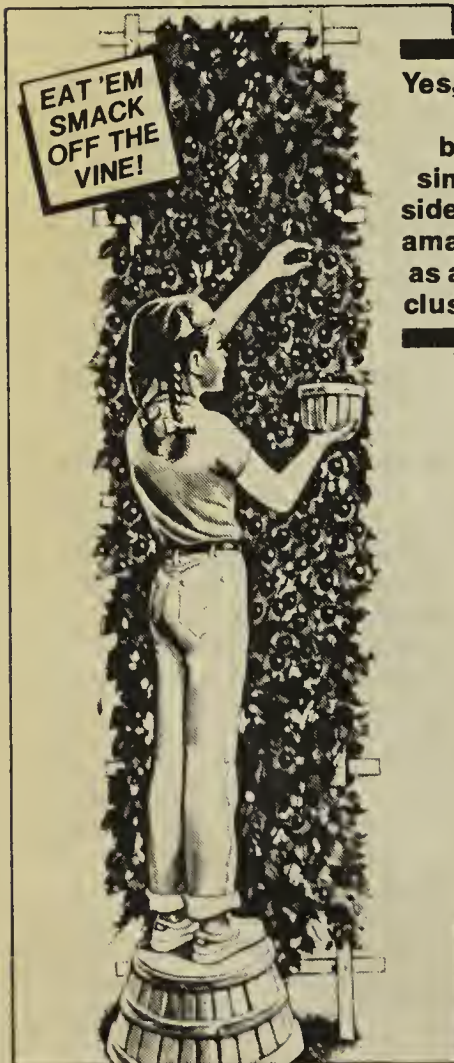
*(continued on page 168)*



**Just Plant 'Em—Stake 'Em—Tie 'Em—Pick 'Em! See**

# Now! GIANT MAN-HIGH STRAWBERRIES!

**SO BIG AND JUICY—JUST A SINGLE SLICED-UP BERRY TOPS AN ENTIRE BOWL OF CEREAL!**



Red Rocket Strawberry is the trade name for Brighton Variety, developed by Calif. University plant scientists, Davis, Calif. Of course, all claims are based on optimum growing conditions. All orders shipped for proper planting time in your area.

**Yes, it's true! Recently released by Calif. University Plant Scientists . . . a brand new wonder-hybrid that you simply grow on a trellis, pole, fence or side of your house . . . and be absolutely amazed as you train it to 'polevault' high as a man . . . loaded down with teeming clusters of fruit . . . THIS VERY SEASON!**

## **WHO EVER HEARD OF PICKING STRAWBERRIES BY REACHING OUT YOUR WINDOW**

Here's one of the most spectacular sights in all of nature. Guaranteed to bring traffic to a screeching halt in front of your house this very season! As these wondrous "RED ROCKET" strawberries . . . roar forth into a man-high 'berry-factory', simply loaded with teeming bowlfuls of the most meaty, sugar-packed taste-treats you've ever sunk a tooth into. Why you'll pick 'em by the pintful this very summer—thanks to the most outrageous outpouring of fruit imaginable.

**A LIVING STRAWBERRY WATERFALL!  
SIMPLY PLANT THEM—STAKE THEM—  
TRAIN THEM—TIE THEM—  
SEE 'EM ZOOM HIGH AS  
A MAN IN A SINGLE SEASON!**

Yes, unlike regular strawberries that you grow on the ground . . . you simply plant these wonder plants cask in the middle of any garden fence—trellis—side of your house or garage—why even a drainpipe or a plain old clothesline pole and thrill to see them erupt in massive cascading sprays of fruit like a whole 'strawberry farm' marching up and down in waves of luscious fruit!

Can't you just see the looks of amazement on your neighbors' faces when you invite them to dinner . . . and tell them to reach out of your

## Them Rocket Forth In A Cluster-Packed Pillar of Fruit!

dining room window to pick their own luscious strawberry dessert right off the vine! And not some skimpy little berries . . . but sugar-packed giants SO HUGE AND MEATY, they're virtually impossible to circle with the fingers of one hand . . . YOU ACTUALLY NEED TWO!

### IN FACT—BERRIES SO BIG YOU CAN BARELY SQUEEZE MORE THAN ONE IN YOUR MOUTH AT A TIME!

Yes, these 'Red Rocket' Strawberries are so eager to grow—so desperate to produce . . . you'll drape your walls, trellises, fences in cascading fountains of fruit . . . as each man-high beauty rewards you with the most incredible parade of "MAN-HIGH" fruit, flowers and foliage you've ever seen in your life. Yes, teaming bowls of sugar-packed beauties:

#### ■ SO BIG & JUICY—

Just one berry makes a spoonful!

#### ■ SO HUGE & MEATY—

Just a single sliced up berry makes a whole strawberry tart . . . and 5 or 6 make a whole strawberry shortcake!

#### ■ SO FAST-GROWING—

they flare out in a man-high column of fruit as they stream up and down your fences and trellis in a 6 foot tower of fruit, flowers and foliage.

### AND THEY MULTIPLY—SO YOU GET UP TO TWICE AS MANY EACH AND EVERY YEAR!

And remember—because these 'RED-ROCKET' strawberries multiply, when you follow the easy growing instructions, for every berry-laden, man-high vine you grow this year, you'll still get more next year . . . and still more new plants for years to come. Meaning: berries by the bowlful year after year after year!

### ACT NOW! THE SOONER YOU PLANT THEM, THE SOONER YOU'LL ENJOY THESE MAN-HIGH STRAWBERRIES!

Here's the best news of all—the amazing price of these wondrous 'MAN-HIGH' strawberries. Not the \$1 or \$2 per plant you might expect for such a remarkable super-bearer . . . but less than 50¢ apiece for thickly-rooted nursery-grown plants . . . and each one all set to reward you with a man-high column of fruit this very season.

But one word of caution—with an incredible new release like this, demand is bound to be overwhelming. To avoid disappointment, act now!



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95 Searing Ave., Mineola, N.Y. 11501

Please RUSH me the 'RED ROCKET' Strawberry Plants checked below. I must be completely satisfied or my money will be refunded in full (less postage & handling, of course).

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- (#012) 12 'RED ROCKET' PLANTS only \$4.98 plus 75¢ postage & handling.
- (#018) 18 'RED ROCKET' PLANTS only \$6.98 plus \$1 postage & handling.
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- (#048) 48 'RED ROCKET' PLANTS only \$15.95 plus \$1.50 postage & handling. **YOU SAVE \$10.30!**
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Div. Willow River Nursery Sales, Inc.



crease loss of heat from your extremities. 3. Finally, when it's really cold outside, stay indoors close by your fire.

### LIGHTNING UPDATE OR NOT EVERYTHING WE "KNOW" IS TRUE!

Lightning strikes a hundred times each *second*. In the few moments it has taken you to read this far, some 3,500 bolts have formed in the world, struck, and faded away, leaving behind only their rolling thunder.

It's commonly believed that metal, water, and other conductive substances "attract" lightning, but this is not so. Lightning gropes only toward those objects that give it an unobstructed path *to the ground*. Neither the leader, nor any other part of the strike will pass through an object . . . *any* object . . . unless that object forms part of an easy path *to the ground*. Or, to put it more concretely, lightning will not strike *you* unless you make yourself the easiest path to the ground, or unless you connect yourself to something that is that easy path.

If you keep yourself dry and away from those objects that a probing lightning bolt will find appealing, you're as safe during a lightning storm as you are under blue skies. For example, in a metal-roofed car you are surrounded by a shell of highly conductive steel. In the unlikely event that the car is struck, the lightning will find the easiest path to the ground in the car's steel (jumping the last short distance from the metal wheel rims), rather than in its occupants. Likewise, metal or metal-framed buildings provide lightning with a far better path to the ground than the building's inhabitants, so these structures are also very safe places to be (as long as you aren't touching the metal).

Even wooden buildings afford excellent protection, since the rainwater

on the roof and walls, and the metal pipes and wires within the walls present lightning with the easy paths it requires. Lightning will never needlessly detour from such paths to strike a person within the house. (Of course, such a strike to a home's wiring or plumbing may well damage the structure itself, but the bolt will still almost surely ignore the occupants. Properly grounded lightning rods will also protect a home from damage, and its owners from harm.)

As long as you are not in contact with your home's natural lightning paths, such as appliances, plumbing, the telephone, you're safe as can be.

If you're outdoors and cannot reach a car or a building, seek a low spot or shelter beneath trees that are neither isolated nor the tallest in the area. Low "understory" trees in the forest make good emergency shelter, but don't stand right next to the trunks. Remember that lightning's energy spreads outward in radiating branches from the struck object, and must travel some distance in the ground before becoming neutralized. Therefore, you should stand on the fringes of the dry area beneath a tree, away from the trunk.

Similarly, if you're caught in an open area, do *not* lie down. If you are flat on the ground, even a near miss could send enough power radiating through the ground and from one end of your body to the other to injure you. Instead, *squat*, with your head between your knees or as low as possible. In this position, you are low, and yet you still have only minimal contact with the wet ground.

If you're swimming, get out of the water. If you're wearing metal-cleated sport shoes (which increase your contact with the ground), take them off. Move away from golf carts, tractors, metal fences, wells, or any other object that might give lightning the easy path it requires.

But what if the millions-to-one odds fall through, and you are one of

the unfortunate few to be struck? Obviously, it's not going to be a very pleasant experience, but neither is it an automatic death warrant. In fact, some scientists now believe that psychology plays an important role in lightning mortality. If you are struck, and if you *believe* that you're going to die, you actually increase the chances that you will. Believe it or not.

**A PROPOSAL:  
MAYBE SOCIETIES OF A  
FEATHER COULD  
ASSOCIATE TOGETHER!**

That perceptive French visitor of the early 19th century, Alexis de Tocqueville, remarked that "Americans of all ages, conditions and dispositions constantly form associations." And we are still doing it. In fact, the number of American associations rose from about 10,700 in 1970 to more than 14,000 by 1980.

Some researchers think that forming associations not only provides people with more political clout, but helps them feel less isolated in our modern society. If this is so, then why not get associations of similar interests together as well? A quick glance through the Gale Research Company's *Encyclopedia of Associations*, listing literally thousands of associations currently in existence, offers any number of possible activities.

How about a race between the **Flying Funeral Directors**, the **National Association of Quick Printers**, the **Council of Fleet Specialists**, and the **Association of Official Racing Chemists**?

Or the **International Jelly and Preserve Association** could sponsor a spread for the **Heavy Duty Representatives Association**, the **Fatty Acid Producers Council**, and the **Wider Quaker Fellowship**.

The **Ancient and Honorable Order of Small Castle Owners of Great Britain** might get together with the **National Association of Miniature Enthusiasts** and put on a little affair.

They could hold it at the **Narrow Fabrics Institute**.

The entertainment might be unveiled by the **Exotique Dancers League of America**, the **National Stripper Well Association**, the **National Hide Association**, and the **American Society of Body Engineers**, under the supervision of the **International Grooving and Grinding Association**.

Misery loves company, so why not merge the **International Sourdough Reunion** with the **Abrasive Engineering Society**? Throw in the **International Brotherhood of Old Bastards** for good measure.

The **American Yarn Spinners Association** and the **Test Boring Association** could debate the **Committee on Public Doublespeak**, with the **Association of Concern for Ultimate Reality and Meaning** as referees.

The **Carnegie Hero Fund Commission** might be needed to rescue the **Captive Insurance Companies Association** from the **Rack Manufacturers Institute**.

Best of all, there would be a parade of all the associations, led by the **Melvil Dui Chowder and Marching Society**, the **International Academy of Accredited Twirling Teachers**, and the **International Cheerleading Foundation**. Music would be provided by the **Catgut Acoustical Society** and the **Society for the Preservation and Advancement of the Harmonica**. Bringing up the rear, of course, would be the **Last Manufacturers Association**.

**SOMETHING TO THINK ABOUT**

Four trillion gallons of precipitation falls on the United States each day, but only a tenth of it is used, *National Geographic* says. As water circles from earth to sky, it may be dirtied but none is lost; the water that John used for baptizing Jesus Christ still exists, its billions of molecules now dispersed around the world. **END**



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# SOLVING THE EVOLUTION RIDDLE

○ ○ ○  
ONCE AND FOR ALL

by Guy Murchie

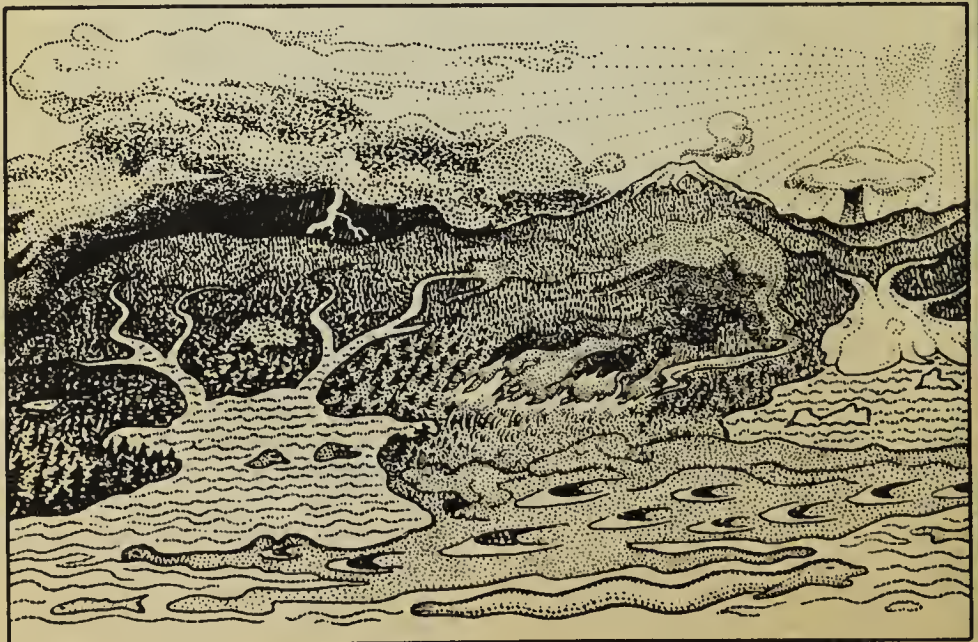
Over the past few years there has been a reincarnation of the evolution debate. On one side are those who favor the Bible version of a six-day creation. On the other are those who say we evolved from the animals over millions of years. Well, read this and argue no more ...

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□ "IN THE BEGINNING WAS THE Word." That is how the apostle John explained the genesis of Earth in abstract biblical terms. "And the Word was made flesh, and dwelt among us," an abstraction that turned into matter while matter turned into life.

In this subtly profound statement at the outset of the fourth book of the New Testament one finds a key to divine terrestrial creation that does not violate any law of nature established by modern science. For today's biologists, geologists, and paleontolo-

gists, even though they have dug up massive evidence that life has existed on Earth for hundreds of millions, if not billions, of years, have not specifically attempted to explain the origin of life nor seriously tackled the question of whether life as we know it somehow managed to spark itself into being on our previously sterile planet or whether it may instead have been wafted here through space in meteorites or dust spores from some other more viable world. This failure, moreover, has to do with the fact that science, by its nature, concerns itself



only with things that are measurable, and therefore feels decidedly uneasy at any suggestion that it take on the issue of the origin of life, which so far has eluded measurement.

At the same time, of course, it is more than conceivable that astrobiologists will one day prove that the carbon compounds they find in meteorites do include viable spores that originated beyond Earth, but such proof obviously would not resolve the basic riddle of genesis. Rather would it merely project the question outward from one world (ours) to another.

It appears, therefore, that science, for all its extraordinary discoveries of life forms evolving over unimaginably long periods on Earth, even of species spawning species, has never denied that life ultimately began with the Word or that "the Word was God." And the real question at issue in our schools thus turns out to be not *whether* God created life on Earth, but only *how* He created it. Did He create it all at once, as the Book of Genesis symbolically suggests — all in one divine six-day week — or did He take His time, of which He seems to have an inexhaustible supply, and unfold life inchmeal over billions of years, as science is demonstrating?

If you accept that God breathed the breath of life into Adam's nostrils all in one sublime puff, you are taking the Bible's symbolism literally, as is your right, though it might be worthwhile considering how long a sublime puff might last. And what might constitute a "day" or an eon in the career of God?

If, on the other hand, you think that the findings of thousands of scientists over the centuries — of Charles Lyell's discoveries of fossils, of Louis Agassiz's realization of the ice ages, of Charles Darwin's and Alfred Russel Wallace's concepts of natural selection — reveal a different kind of creation by gradual evolution, you are applying what is generally called reason to the issue. You are

questioning Bishop James Usher's famous 17th-century calculation of the date of creation as 4004 B.C. and accepting that earthwide selection among quadrillions of organisms over billions of years is a more likely elucidation of just how the Creator carried out His creation, of how He "let there be a firmament" of stars and galaxies that slowly arranged themselves on a majestic scale out of elements evolving from simple hydrogen into more and more complex atoms and molecules and dust, of how He eventually "let the land bring forth grass . . . and cattle . . . and every thing that creepeth upon the earth after his kind . . ."

As it hardly seems feasible as yet to achieve worldwide agreement on the date of life's genesis as between the extremes of 4004 B.C. and 4,000,000,000 B.C., it may be of interest here to point out another and basically different concept of life that has long been mentioned in philosophical circles, and which may well eventually settle the issue. I refer to the principle of Omnipresence (explained in detail as the third mystery in my book *The Seven Mysteries of Life*, excerpted in *The Old Farmer's Almanac* in recent years) which seems to have been articulated first by Thales, the Greek philosopher, in the sixth century B.C. when he taught that all matter, including minerals, gases, and stars, is alive. Shortly afterward Anaxagoras propounded his panspermic theory that invisible "ethereal germs" are dispersed everywhere in the world, giving rise to all its creatures, including man. Later, in Rome, Lucretius wrote in his famous *De Rerum Natura* that "multitudes of animals are formed out of the earth . . . First the various breeds of birds . . . then the mammals . . . as the earth passes through successive phases . . ." Inevitably the question of "spontaneous generation" emerged, and the range of thinking on this crucial issue, even into the 17th century, is sug-



gested by the recipe for creating mice propounded by none other than the great Flemish chemist, Jan van Helmont: "Put a pile of soiled clothes in a dark, quiet corner, sprinkle them with kernels of wheat and within 21 days mice will appear." This had never been known to fail.

Usually it is so easy to tell a rock from a potato that most people don't regard them as comparable at all, or are apt to think all rocks are dead. Yet ponderable evidence is accumulating that the whole mineral kingdom has a very real life of its own that takes only time, patience, and a little sensitive contemplation to reach our under-

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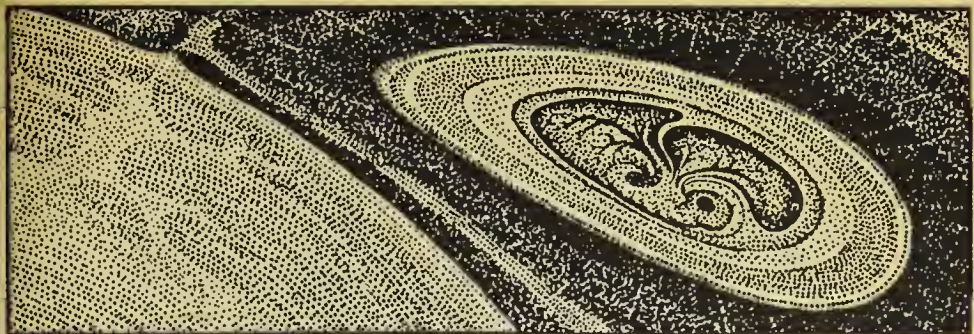
***"There is growing fossil evidence that Earth has literally kept a steady temperature through all her four billion years of existence despite the fact that the sun has increased its radiation of energy, light, and heat by some two to three hundred percent during the same period."***

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standing. For many rocks actually do grow, if very slowly. And they get around, eat in a manner of speaking, become ill yet not without some capacity to heal their wounds, and even bear offspring through their own simple system of reproduction. Rocks are crystals, you see, and it is the nature of a crystal to maintain its molecular lattice structure, to restore any distortion, to gradually fill up any crack (in effect healing the wound), and to grow by the natural tendency for passing molecules made of similar material to attach themselves to the crystal's microscopic crevices into which they exactly fit. The receptivity of these "friendly" molecules indeed amounts to an elementary attraction that, chemically speaking, approaches

what could be termed "love." And this mysterious force, incidentally, seems to be the key to crystal reproduction, which is probably the simple but vital technique of procreation that must have enabled Earth's very earliest "life" forms to maintain themselves, spread, and eventually evolve into all the millions of species of vegetables and animals we see around us today. From the naturalist's point of view it would actually demean God if one were to cling to the primitive or literal interpretation of the Bible that He performed His creation in a series of instantaneous miracles, like waving a wand, instead of using the infinitely more impressive method of intricate and endless unfolding of form after form, out of which developed motion after motion, behavior after behavior, sense after sense, thought after thought, and ultimately spirit upon spirit.

Surprisingly there does not appear to be any limit anywhere to this extraordinary process. Nor is Mother Earth herself exempt from the phenomenon, nor from taking on her own global attributes of life. In fact science is well on its way toward establishing our planet as a truly viable superorganism. For the power to maintain a fairly constant level of body temperature and humidity despite a changing environment is certainly a mark of life, as sweating and shivering humanity well knows. And there is growing fossil evidence that Earth has literally kept a steady temperature through all her four billion years of existence despite the fact that the sun has increased its radiation of energy, light, and heat by some two to three hundred percent (by current astrophysical estimate) during the same period. And if Earth may, therefore, be considered alive, so, in logic, must be other planets and, by not unreasonable extrapolation, the Solar System, the Milky Way and — who can gainsay it? — the Universe.



The whole concept of life, thus presented, is admittedly mysterious. Inevitably so, for Mystery (with a capital M) is an apt synonym for divinity and, to the degree that instinct leads us to accept Mystery as the essence of a world in which our bodies function through the "wisdom of the inward parts" and the Milky Way churns perpetually upon nothing, we will humbly accept the divinity inherent in life's creation, be it engendered by swift wand or slow evolution.

Where the world is taking us is a question few philosophers have had the temerity to guess at. But some have noted that there seem to be many aspects to evolution, all interweaving their paths as the centuries and milleniums unfurl. The human form and face, for example, have slowly taken shape as the worm and the fish crawled upon dry land and the reptile became a mammal. Diseases evolved unseen in their own secret microcosm. Machines now boldly emerge in an accelerating sequence from the locomotive to the atomic generator, from the abacus to the chip computer. The miracles of yesteryear become the necessities of today. Even virtues evolve across time as the spear-wielding heroes of milleniums past are replaced by the spiritual statesmen who must forge the world federations of tomorrow.

As the germination of Earth thus becomes more established, we realize that the first victory of a machine over an animal in 1839 (when a steam

engine outdistanced a horse) led a century later to a thousandfold increase in travel speed in the Apollo program — and comparable explosions have been occurring in population, communication, exploration, liberation, education, computation, standardization, and, we trust, political organization. Yet evolution is not the least explosive of these as man, having won the tournament of animal competition, now, for the first time, must face eugenics: the task of breeding, not just dogs or horses, but — much more difficult — himself. It is a challenge also of the spirit, quite appropriate to this soul school called mortal life on Earth. And it more than hints that man has mounted, figuratively speaking, a bigger, wilder steed than he yet knows how to ride. He is still young enough to learn, however, and his eagerness to risk his neck, if not his soul, may be exactly what it takes to tame not only the mount but also, in time, even the unruly rider.

■ ■

If you want a copy of Guy Murchie's book *The Seven Mysteries of Life* (published by Houghton Mifflin Co., Boston, selection of the Book-of-the-Month Club in 1978, hardbound, 700 pages, 230 illustrations, and featured in *The Old Farmer's Almanac* in recent years) inscribed and postpaid, send \$19 to Guy Murchie, Marlborough, NH 03455. The book has a 23-page chapter on evolution and also explains in dramatic detail how our planet is germinating in this century, why there is evil on Earth, how sex evolved before death, describes 32 known senses and the body-mind relation, the abstraction principle, and the interrelatedness of all creatures. A paperback copy (likewise inscribed and postpaid) is available by sending \$12 to Mr. Murchie at the same address.



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1981

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22	23	24	25	26	27	28	19	20	21	22	23	24	25	26	17	18	19	20	21	22	23	21	22	23	24	25	26	27
29	30	31	-	-	-	-	26	27	28	29	30	-	-	-	24	25	26	27	28	29	30	28	29	30	31	-	-	-
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SEPTEMBER					OCTOBER					NOVEMBER					DECEMBER														
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S									
-	-	-	-	-	-	1	-	-	-	-	1	2	3	4	1	2	3	4	5	6	7	-	-	-	1	2	3		
4	5	6	7	8	9	10	2	3	4	5	6	7	8	9	10	6	7	8	9	10	11	12	4	5	6	7	8	9	10
11	12	13	14	15	16	17	9	10	11	12	13	14	15	16	17	13	14	15	16	17	18	19	11	12	13	14	15	16	17
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25	26	27	28	29	30	31	23	24	25	26	27	28	29	30	31	27	28	29	30	-	-	25	26	27	28	29	30	31	
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# ARTERIES

**CAN CLEANSE THEMSELVES  
WITHOUT DRUGS OR SURGERY  
A WONDERFUL NEW DISCOVERY**



By ROBERT S. FORD

A startling new discovery shows how arteries can cleanse themselves without surgery. Just as your skin can cast out thorns, your arteries can cast out lumps when you stop forming them with the wrong foods. People say things like: "I learned how to eat, and avoided a surgical operation. No scars, no pain, no pills! Saved thousands and didn't miss a day's work. Now my arteries are clean all over, not just where they wanted to cut me. My anginal chest and leg pains are gone! No more standing still while the pain fades! The pulse is strong in my legs again! Cholesterol, blood pressure, and tri-glycerides are reduced to normal. Ear noises and dizziness are gone, and my memory is better. No more blackouts; saved my eyesight! I learned how to control my weight, yet eat like a king! Tastier food, less kitchen work, less cost, less indigestion. And now my sugar is controlled without pills or needles! I wish I had learned about this sooner!"

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# If you have another use for Arm & Hammer<sup>®</sup> Baking Soda, we'd like to know about it.

For years we've been telling people about all the great things you can do with Arm & Hammer Baking Soda. Well now we're looking for new uses. If you have one, fill out the coupon below and send it in. If it's a great new way to use Arm & Hammer Baking Soda we may print your use on our box. But first check our uses to make sure your's isn't already famous.

The most popular use is **DEODORIZING** your **REFRIGERATOR** and **FREEZER**. **BAKING** comes next. Try sprinkling some in your **BATH** water. It's a pure and natural skin conditioner. It soothes burns, insect bites, skin rashes and leaves you feeling soft and clean. Pour a box down the **DRAIN**. It'll sweeten it and make your **SEPTIC TANK** work better. A half teaspoon in a glass of water makes a great **ANTACID** too! Be sure to follow label directions. And you can use Arm & Hammer Baking Soda to **CLEAN** just about everything in the house. It's great for cleaning greasy refrigerators, freezers, stoves, cutting boards, dishwashers, thermos bottles, food containers, coffee pots, and just about everything else in the kitchen. Don't stop in the kitchen. Arm & Hammer also cleans bathroom surfaces without abrasion. Try brushing your **TEETH** with it. Or use it as a **MOUTHWASH**. You can also use it to clean and deodorize **COMBS** and **BRUSHES**. It's great for cleaning and deodorizing **CARPETS** too! It will keep your **CAT LITTER** smelling fresh for days and days. Put some in your **CAR ASHTRAY** to keep it smelling fresh. It also puts out **FIRES** and helps keep your **SWIMMING POOL** water crystal clear. Add it to the **LAUNDRY**, it makes your clothes smell sweet and fresh.

That's just some of the things you can do with Arm & Hammer Baking Soda. We hope you can come up with some new uses. Any submitted become our property and compensation shall be at our discretion. If you don't have any new uses, fill out and send in the coupon anyway, enclosing a stamped self-addressed envelope and we'll send you a free booklet which gives you some more baking soda ideas. And remember Arm & Hammer Baking Soda is quality controlled from start to finish. It's the one your whole family can trust for just about any job in the house.

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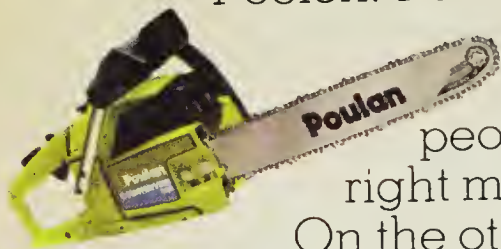
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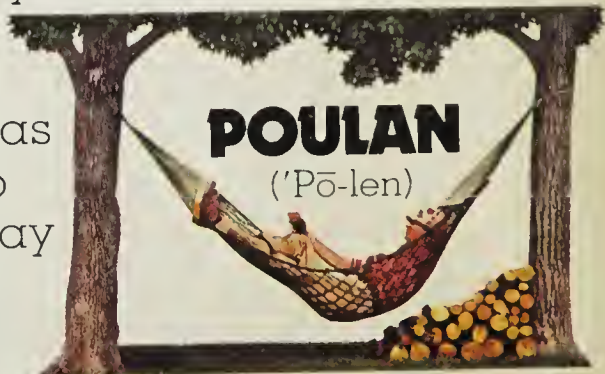


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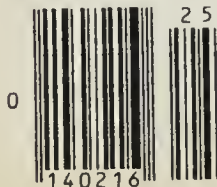
With a name like Poulan, getting people to say the name right may be asking a lot. On the other hand, people ask an awful lot of our saws. Extra cutting power. Quiet operation. Quick starting. Beautiful styling. Durability. Affordability.

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