

HERPETOLOGY

Rattlesnake's Age Told By Bone "Growth Rings"

► THE MOST accurate way to tell a rattlesnake's age is not by the number of rattles on his tail, but by the "growth rings" of his bones, Bayard Brattstrom, University of California at Los Angeles zoologist, finds.

These "growth rings" are much like the annual growth rings seen on a tree's trunk when it is cut horizontally. Each year the rattler deposits a new layer of calcium and other minerals in his bones. These layers can be identified and counted with the aid of a hand lens or low-power microscope.

These "growth rings" occur throughout the snake's skeletal system. Mr. Brattstrom uses a small bone from the head of the snake, in which the rings are more discernible, to determine its age.

This is the only accurate method of determining how old a rattlesnake is, the zoologist points out. Laymen have frequently attempted to tell a rattler's age by its number of rattles. But this is guesswork, he says, and is seldom more accurate than plus or minus a couple of years.

A rattlesnake adds a rattle every time he sheds his skin. This occurs several times a year when he is young. As he grows older, the frequency of shedding tapers off. In older snakes rattles are also often broken off.

Average life expectancy of most rattlers in their native habitat is about 12 to 15 years. Oldest known rattlesnake in captivity is 16.

Science News Letter, August 21, 1954

METEOROLOGY

We Would Welcome Even Red Snow Now!

► RED SNOW one day this spring spread dust over the Minneapolis area so thickly that many tons were dropped upon each square mile of territory.

Dr. N. Prokopovich of the Minnesota Geological Survey, ignoring present hot weather, reports a study of the March 12 dust-snow storm in *Science* (Aug. 5).

A minimum of 75,000 tons of red dust fell on the basic Twin City area of 1,500 square miles, Dr. Prokopovich estimated. One sample of snow collected on the University of Minnesota campus showed the equivalent of 128.8 tons per square mile, but the more conservative figure of 50 tons was used in the estimate.

The dust-snow storm occurred after an unusually dry winter and was followed the next day by a fall of usual pure white snow.

The dust was too fine for microscopic examination, but X-ray studies showed that it contained quartz and feldspar. The red color is thought to have been caused by small amounts of iron hydroxide pigment in the dust.

Science News Letter, August 21, 1954

*Here's Proof of Leadership***NEW FORMULA • NEW PLANT • NEW TOOLS**

We have re-calculated ALL our telescope mirrors, greatly improved our grinding and testing methods thus giving you a BETTER mirror AT NO INCREASE IN PRICE!

No need for months of tedious grinding!
Telescope success assured with our NEW

TELESCOPE MIRRORS!

Ready-to-use

Ground—Polished—Aluminized—Tested

MAKE A PROFESSIONAL

Astronomical or Terrestrial

TELESCOPE for as little as \$7.00

Now you can afford the luxury of a real telescope. See the mountains of the Moon, Saturn's rings, nebulae and a host of heavenly wonders.

Easy written and progress-photo instructions included with each kit. Also included are a "Flat" mirror or "diagonal" and lenses to make 2 eyepieces giving the powers listed.

6" Kit (Pyrex) 62" F.L. 70X & 140X...\$20.50
5" Kit 67" F.L. 65X & 130X..... 17.00
4" Kit 52" F.L. 65X & 110X..... 12.00
3" Kit 39" F.L. 40X & 80X..... 7.00

A fine astronomical telescope can be made for as little as \$7.00. We will be glad to tell you how. Send 30¢ for Know-how Instructions.

ROSS QUADIPOD

PORTABLE—STURDY

A rugged telescope platform. New modern design. 4 adjustable legs. Made to solve your telescope support problems at a price which is phenomenally low.

Handles any type of telescope, 2" to 6" and up to 8" diameter without twisting, vibrating or squirming, even in a breeze. It is absolutely rigid. When used on uneven ground, it can be leveled readily. It will support more than 200 pounds. The 4-legged construction keeps the center of gravity well within the four shoes with all telescopes.

The ROSS QUADIPOD is made of smooth-grained, select grade white pine, rack dried, non-warping, hand selected. It comes to you unpainted and knocked-down. You can easily assemble it. Paint it if you wish; painting is desirable but not necessary. You are saving up to \$25 by buying the ROSS QUADIPOD knocked-down and unpainted. We send complete assembly instructions and tools free with each unit.

The platform is adjustable in height from 27" to 42". The weight with equatorial mounting is 13 pounds. Eyepiece holding rack provided for only \$1.00 more.

ROSS QUADIPOD with Equatorial Mounting for telescopes up to 4" diameter (knocked-down, unpainted) Only \$18.00 (Express charges extra)

ROSS QUADIPOD for telescopes up to 8" diameter (knocked-down, unpainted) Only \$23.00 (Express charges extra)

Assembly by us of either model, before shipping, costs \$3.00 extra.

SUN SAFETY FILTERS

The SAFE AND SANE way to look at solar displays —use our Special Safety Sun Filters. Each one is 50 mm. (2") diameter and 2 mm. (1/16") thick; polished flat on both sides. This Special Safety Sun Filter can be used in any of the following three ways:

1. View the sun directly by looking through filter with unaided eyes without harm or danger.

2. Place filter at the eyepoint of the ocular of either refractor or reflector and observe with any power after limiting the objective (with a diaphragm) to less than 3".

3. Use filter as a limiting diaphragm in front of the objective of the telescope. Will not crack. Prevents harm to mirror or objective.

For Winter sunlight use #WF12

For Summer sunlight use #SF14

Only \$2.00 each or \$3.00 per set of 2 (containing one of each of above).

50X ACHROMATIC TELESCOPE EYEPIECES

Improved Hastings-Ross Formula. 1/5" (5 mm.) E.F.L. cemented triplet (solid) positive type. Highest light transmission through minimum glass thickness. Medium wide field, sharp to the very edge. Excellent color correction. Mounted in non-reflecting cap of fall-away type. O.D. 1 1/4".....Each \$15.50

ACHROMATIC BARLOW LENS

A negative achromat giving sharp images at high power. Read what Mr. R. A. Gibson of Nutley, N. J., says: "You may be interested in knowing of the excellent results I am obtaining with the Negative (Barlow) Achromatic 1 1/2 x lens."

"I have a 6" telescope using one of your (Ross) mirrors. I get a magnification of 300x using a 1/4" eyepiece. With this combination I get excellent resolving power. By adding the Barlow lens to the 1/4" eyepiece, I obtain a magnification of 450x with equally good resolving power."

"When viewing Jupiter with this latter combination, I get good planetary detail." Magnification factor 1 1/2 times. Little loss of light. Minimum astigmatic distortion. Achromatic negative lens in aluminum mount; 1-1/16" diameter; minus 12" f.l. Outside surfaces fluoride coated.

Only \$2.00 each

HIGH-POWER TELESCOPE EYEPIECE

Twin-Achromatic Doublet about 1/3" E.F.L. (30x) made of two achromatic cemented doublets, of Bausch & Lomb manufacture. The field is sharp to the edge. Good color correction. In "French-doublet" screw type mounting, giving highest eyepoint possible with this short-focus combination. O.D. 1 1/4". Each \$8.50

BRASS TUBING—TELESCOPING

Your requests and purchases have made it possible for us to secure and supply this fine seamless brass telescoping tubing for making your own telescope parts such as oculars and focusing fittings.

1 1/4" O.D. wall .030" length 10".....@ \$1.50
1 1/4" I.D. wall .030" length 10".....@ \$1.50

Add 35¢ per length for postage.

PRISM

Finest Quality—In Mount

Suitable as a diagonal in any telescope. Light flint, fluoride coated, very best quality, stria-free, water-white glass. Superb optical quality—surfaces are equal to or better than 1/4 wave. Faces 1 1/2" by 1 1/2" (40 mm.) at 90°. Size suitable for 5" to 8" mirrors. Mounting has a special bracket making attachment to your spider simple, easy, and quick. Our price is 1/4 actual cost. Prism as above, in mounting only:

\$6.00 plus 50¢ P.P.

AMBER LUNAR FILTER

Excellent for viewing the full moon. Improves seeing by a point or two and greatly reduces glare. Enables you to see a wealth of rather curious detail of small light and darkish areas under high solar illumination.

Each \$1.00

BINO-TACH

Attaches ANY make or power of Prism binoculars to any photographic tripod or Panhead. On and off in seconds. Reduces fatigue and improves seeing by 100% because of steadiness. Worth twice our asking price in usefulnessOnly \$6.60 each, P.P.

HAND TELESCOPE SADDLE BRACKET

Fits every make and size of hand telescope. A money-back guarantee protects you. Fits any photo panhead, tripod or tripod accessory. On or off in seconds. NO TOOLS REQUIRED. Simplicity itself in use and attachment. Nothing to wear. Telescope can be removed to safety in seconds and reset again in seconds. On boat, lake front, country lodge, seashore or mountain top makes the use of the very highest powered telescope possible, easy to use and without shake. Improves seeing by 100% or more. Reduces fatigue.

Saddle Bracket.....\$4.00

EYEPIECE FOCUSING DEVICE

Precision Sleeve Type

Insure the efficiency of your telescope with this indispensable accessory for fine vernier focusing. The precise fit of all turned parts assures the optimum in focusing accuracy. Complete with built-in diagonal support. Eyepiece travel 2" to 5". Fits tubes from 4" to 8" O.D. and accommodates standard 1 1/4" eyepiece. Seamless brass throughout. Self centering on tube, one adjusting set screw for diagonal mirror. No special tools or jigs needed\$5.00

HARRY ROSS, Telescopes-Microscopes

"Know How" Catalog—30¢

70 West Broadway, New York 7, N. Y. Dept. S-C8