

Instrument to Tell The Growth of Trees

It is a matter of common observation that some trees, like pines, poplars, willows and soft maples, are of rapid growth, while others, like the hard maples and most of the oaks, grow more slowly and produce wood of greater strength and firmness. The dendrograph is an instrument designed to record minutely and accurately all changes in the size of the trunk of a growing tree. When once properly attached to the trunk it requires no further attention, except the weekly winding of the clockwork and the insertion of a new record sheet on the recording cylinder.

The most conspicuous part of this instrument is the recording drum with its record sheet, protected by a tin cover attached to the trunk and caused to rotate by clockwork; but the essential feature is a yoke composed of slotted bars of metal—an alloy with a very low temperature coefficient—held in place by upright "fingers" of spring brass wire, which hold the yoke in position without exerting any notable pressure on the tree.

Belt of Wood Blocks.

A belt of wooden blocks, serving as a support for the apparatus is clamped about the trunk in such a way as to touch it only at a few points and therefore to interfere as little as possible with its growth. These blocks are placed horizontally about a yard above the ground, the block bearing the recorder being on the south side of the tree. Changes in the distance between the contact screw on the opposite side of the trunk and the arm of the bearing lever are accurately registered on the drum by the recording rod and indicate changes in the size of the tree at that point. In other words, a curve of growth is traced on the revolving drum as it passes beneath the point of the rod, whose position is gradually changed as the trunk expands in the process of growing.

Some interesting experiments have been conducted with the device by Dr. D. T. McDougall, director of the department of botanical research of Carnegie Institution, its inventor. For instance, the dendrograph was attached to a Monterey pine, which is noted for its rapid growth and short life period, near Carmel, Calif. The conditions about Carmel are such that the species shows growth almost throughout the year, either in seedlings, tips of branches, leaders or

The instrument was adjusted to the base of the trunk of a tree measuring about 42 centimeters in diameter on March 24, 1918. The crop of pollen had been shed a month earlier, and the tips of the branches had elongated three or four centimeters, while the leaders of young trees had grown ten times as much.

Interruption of Growth.

The first interruption of growth occurred during a period of high temperatures and low humidity at the end of the following May, after which time the rate was lower and subject to long interruptions, although increases occurred as late as September, during which time the trunk, including the thin layer of inner bark under the contact points, underwent a total increase in thickness of nine millimeters, or more than a third of an inch. The actual thickness of the shell of wood or "annual ring" may be safely estimated at about three millimeters. From the general data gathered on this tree it was deduced that the growing tips and trunks grew most rapidly at night or on foggy days, the stems one and two years old enlarge during the middle period, and the trunks shrink during this same period, indicative of a mechanism which may be of importance in the ascent of the sap.—Christian Science Monitor.

Once tried always used is true of "Perfect" Baking Powder. oct15,29,nov12,26

The Modern Girl

London Daily Telegraph: (Miss Faithfull, head mistress of Cheltenham Ladies' College, speaking at the Church Congress, contrasted the girls of to-day and the golden age of Queen Victoria.) Her own estimate of the modern girl is more lenient than most of those which find a way into print. She rebukes our moralists for servility to ancient ideas and traditions. The charges, certainly of a strange perversity, that women's dress is of ugliness and impropriety hitherto unknown, Miss Faithfull dismisses with contempt. She will not even allow that there is anything new in paint and powder, and to be sure they are as old as Jessebel, for what the present is worth. As for smoking, to call that a dread of face is merely irritating. In fine, those who made a fuss of such things as these are "confusing matters of taste with matters of right and wrong." It is a fallacy to which we are all prone, but we must needs agree with Miss Faithfull that people who stole the cigarette and the powder-puff as if they were deadly sins are weakening the authority of principles much more important than those of taste.

STEERS Ltd.

Oil Cloth.
Table Cloths.

Size 45 x 46 inches.
Various patterns and colors.
Reg. 75c. each.

Fri. & Sat. .58c.

STEERS Ltd.

Canvas Mats.
Brown and Green etc.

feet; sizes 18 x 36 inches.
Special for Friday and Saturday.

Each17c.

STEERS Ltd.

So Many Bargains for FRIDAY & SATURDAY That We Could Not Publish Them All

We want you to read this advertisement to the end, then come to the store and see the others.

Steers Limited

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Smallwares

"COLUMBUS" LEAD PENCILS—Made especially for school use. Red polished. Regular 4c. each. Friday 2 for 7c. and Saturday45c.

"JACKIE COOGAN" SCHOOL FOUNTAIN PENS—Made in the same style as the most expensive pens in use. Regular 55c. each. Friday and Saturday45c.

MAGIC FLAKE SOAP DYE—In every desired shade. This dye dissolves, dyes and cleanses instantly. 3 pkcs. for 15c. Regular 15c. each. Friday and Saturday15c.

WHITE IVORY FINE TOOTH COMBS—Measuring 3 by 2 inches. Reg. 13c. each. Friday and Saturday11c.

SMALL BLACK DRESSING COMBS—Just the comb for bobbed hair. Measures 5 1/2 inches long. Regular 14c. each. Friday and Saturday11c.

CABINETS OF HAIRPINS—Containing 50 assorted pins of best Japanese quality. Regular 6c. each. Friday and Saturday5c.

"GRANVILLE" EXERCISE BOOKS—With pages of new smooth paper. Reg. 5c. each. Friday and Saturday4c.

MILE END BRILLIANT—For all home crochet work. All the desired shades. Regular 13c. ball. Friday and Saturday10c.

BOXED STATIONERY—Suitable for gift-giving. Beautiful designs. Regular 48c. box. Friday and Saturday38c.

WRITING TABLETS—Containing 100 sheets ruled paper, size 5 x 8 inches. Regular 20c. each. Friday and Saturday16c.

HELLIGER'S WRITING INK—A Blue Black and Red. Ideal for use in fountain pens, school or home uses. Very reasonably priced. Reg. 4c. for 9c. bottle. Friday and Saturday 3 for 9c.

Women's Fleece Lined Underwear.

Vests in high neck style with long sleeves and edged with crochet heading. The pants are in open style with adjustable waistband; ankle length; sizes 36 to 44. Reg. \$1.35 garment. Friday and Saturday\$1.07

Women's Princess Slips.

Of fine quality soft Opaline in shades of Cinnamon, Copenhagen, Wine, Grey, Sand, Navy and Black; the shaped neck and armholes are neatly done with hemstitching; the hips are gathered, which give the fullness so much desired. Reg. \$3.00 each. Friday and Saturday\$2.25

Golden Fox, Marmot and Black Wolf Muffs.

With Crepe de Chine and Silk linings; bone wrist handles attached; high grade goods offered at very considerable reduction on their former price. Special for Friday and Saturday,\$6.00

Women's Fleece Lined Gloves.

In Beaver, Grey and Black; a good heavy quality that would sell in the regular way at more than double the price here quoted. Special for Friday and Saturday, the pair18c.

Hat Ornaments and Quills.

In beautiful combination effects and plain colors of Cinnamon, Grey, Orchid, Henna and Wine. These are the very newest decorations for women's headwear and we have a magnificent selection here for your choosing. Reg. 42c. each. Friday and Saturday42c.

"Pond's" Vanishing and Cold Cream.

Gives unfailing protection during these cold days. Every woman should always use "Pond's" because it smooths and freshens the skin. Special for Friday and Saturday, the crock37c.

"Three Flowers" Travellettes.

A neat little package containing Vanishing and Cleansing Cream, Face Powder, and Perfume of a very high grade. Special for Friday and Saturday, each45c.

Reversible Turkish Hearth Rugs

Beautiful Oriental designs in colorings suitable for any room in the house. Size 28 x 57 inches; finished with colored fringe. Reg. \$3.85 each. Friday and Saturday\$3.15

White Quilts.

American Honeycomb Quilts in various patterns and sizes, with narrow hemmed ends. Reg. prices to \$4.00 each. Friday and Saturday\$4.08

Children's Cambric Dresses.

Short styles, very daintily finished at yoke and around the trim with fine pin tucks and embroidery. Really a bargain offering at this low price. Reg. \$1.30 each. Friday and Saturday98c.

Women's Lustre Wool Hosiery.

A combination of Silk and Wool is used in the manufacture of these beautiful stockings; every new shade is shown, including Sunbeam, Log Cabin, Jack Rabbit, Pigeon, etc.; all sizes. Reg. 1.15 pair. Friday and Saturday\$1.08

Women's Girdle Corsets.

Of Pink Embossed Goutil; made with elastic panels at sides that adjust themselves to the exact size required to fit the figure perfectly; finished with four strong horse supporters; sizes 28 to 30. Reg. \$1.50 pair. Friday and Saturday\$1.20

Women's Brassiers.

Porus Pink Goutil, made with elastic inset and strap at shoulders; a very popular wide model made to hook at back; sizes 30 to 38. Reg. 40c. each. Friday and Saturday32c.

Men's High Grade Serge Suits

Of the very finest quality All Wool Navy Serge. Made in a perfect-fitting style that's good enough for any one in any walk of life to wear. They are well cut and made with special care and attention. Sizes 4, 5, 6 and 7. Reg. \$37.00. Suit. Friday and Saturday\$33.00

Men's Fine Quality Tweed Suits

Quiet, dark stripes, and firm qualities, so suitable for fall or winter wear. Well made and splendidly finished in the most sought after styles. Sizes 4, 5, 6 and 7. Regular \$27.50 Suit. Friday\$22.50 and Saturday

Boys' Tweed Pants

In Dark Grey colors that are so serviceable for boys from 8 to 15 years. Made from English Wool Tweed of a good quality. Regular \$1.75 pair. Friday\$1.62 and Saturday

Women's Smart Looking Winter Coats

Of plain materials, in very stylish colors of Cinnamon, Grey, Browns and Navy. These coats are the cream of our stock as far as good value is concerned. They are beautifully tailored to hold their good shapes and give service. The collar, cuffs and around the skirt are very neatly finished, with fur. The front closes with one large fancy button in color to match. Reg. \$16.00 ea. Friday & Sat.\$12.75

Children's Youthful Looking Coats

Of heavy blanket material of the better quality. Made to stand the wear that's usual with children of 8 to 14 years. The shades are Brown, Rust, Navy and Grey. Storm collar; turned back cuffs and convenient pockets. Regular \$5.00 each. Friday and Saturday\$3.90

Deloris Hair Nets

Large sizes, made with double mesh for greater service. Light, Mid and Dark Brown shades. Regular 12c. each. Friday and Saturday10c.

Children's Sacques.

In White Silk and Wool of a beautiful quality; they are very nicely made with Peter Pan collars and trimmings of silk ribbon and pearl buttons; various sizes. Reg. \$2.25 each. Friday and Saturday\$2.00

Children's Overknickers.

Of Navy Fleece Jersey material with self-adjusting elastic run waist and legs; very cozy and comfortable for children of 5 to 8 years. Reg. 70c. pair. Friday and Saturday59c.

"President" Braces.

The original President Suspenders for men; they are made to correspond to every movement of the body. Reg. 85c. pair. Friday and Saturday68c.

Boys' Braces.

Of very strong elastic webbing, fitted with real leather button loops and mickled fittings. Reg. 25c. pr. Friday & Saturday18c.

Boys' Negligee Shirts.

Of fine quality cotton materials in assorted light stripes; laundered neck band and soft double cuffs; sizes 12 1/2, 13, 13 1/2, and 14. Reg. \$1.55 each. Friday and Saturday\$1.30

Broadcloth Shirts.

Ecru, White and Pale Blue with laundered neck band, detached soft collar and soft double cuffs; high grade shirts in sizes 14 to 16 1/2. Reg. \$2.90 each. Friday and Saturday\$2.35

Men's Percal Shirts.

In neat stripes on white grounds; soft pure quality with collar attached; sizes 14 1/2 to 16. Regular \$1.75 each. Friday and Saturday\$1.39

Men's Brown Vici Kid Shoes.

A very comfortable fitting shape with medium height heels; very smart in appearance and good wearers; sizes 3 to 7. Reg. \$3.90. pr. Friday and Saturday\$3.50

Wide End Ties.

In a big assortment of the best designs and color combinations; made from silk materials in assorted qualities. Reg. \$1.10 each. Friday and Saturday88c.

Boys' Wool Hose

Heavy ribbed Black Hose, knit firm, all wool yarn, of a soft good-wearing quality. Mothers would do well to secure some of these now while this bargain offer is on. Reg. 85c. pr. Friday & Sat.69c.

Big Boys' Wool Hose

Of exceptionally good quality. Soft make, reliable All Wool Stockings that will stand a big lot of hard wear. Regular 95c. pair. Friday and Saturday75c.

Women's Wool Cashmere Hose

Exceptionally good quality, soft, smooth and non-irritable to the skin. They are made in full fashioned style with wear-resisting toes and heels. Plain black only. All sizes. Regular \$1.35 pair. Friday and Saturday\$1.12

Women's Colored Cashmere Hose

High grade goods, soft and durable. "In colors of Brown, Grey, Fawn, Silver, Black, etc. A full range of sizes in each color. Regular 85c. pair. Friday and Saturday74c.

Men's Knitted Underwear

In Light Grey, not all sizes, but a fair assortment of medium and small. Regular \$1.50 garment. Friday and Saturday\$1.00

Boys' Wool Tweed Suits.

Splendid quality in assorted Brown or Grey Tweed mixtures; made in Norfolk style with belted back and waist; a real serviceable quality for boys of 6 to 12 years. Reg. \$9.35 suit. Friday and Saturday\$7.50

Men's Cotton Work Gloves.

With blue knitted, close fitting wrists; these are also bought for use at rough housework. Reg. \$2.00 pr. Friday & Saturday19c.

Men's Blue Denim Overalls.

Reliable quality, strongly made from red back Blue Denim that will stand extra wear and prove very serviceable; Coats and Pants. Reg. \$1.44 garment. Friday and Saturday\$1.44

Heavy English Blankets.

With broad blue borders and overstitched edges; a real good blanket for the money; it measures 5 feet wide by 6 feet 2 inches in length. Regular \$3.95 pair. Friday and Saturday\$3.25

Women's Black Vici Kid Boots.

Every comfort is assured in these high grade Boots; they are well made with 3 1/2 inch leg, medium heel and toe. Reg. \$4.90 pair. Friday and Saturday\$4.49

Women's Pull-Over Sweaters.

Knit from fine quality soft sweater wool in combination colors of Scarlet and Camel, Camel and Brown, and Pearl and Camel. The roll collar is made to slip through slot and tie in bow at front. Long sleeves with turned back cuffs. Regular \$5.55 each. Friday and Saturday\$3.10

Dark Grey and Brown Heavy Blankets.

Useful for the home, or for lumbermen or loggers' camp use; they are made from heavy material with wide dark borders and wool overstitched edges; size 62 x 76 inches. Reg. \$3.76 pair. Friday and Saturday\$3.24

Curtain Materials.

Scrim, Nets, Mullins, etc., in many different qualities and patterns; the widths range up to 38 inches; the colors are White, Cream, Ivory, Ecru and fancy colored effects. The regular prices range up to 25c. yard. Special for Friday and Saturday15c.

Floor Linoleum.

Fancy blocks and scroll designs in light and dark effects of Brown, Green and Buff, also Blue and White tile pattern; 2 yards wide; a good heavy quality that will give lasting wear. Reg. \$2.30 yard. Friday and Saturday\$1.30

Odd Lot Sale of Wall Papers.

2, 3, 4, 5 and 6 piece lots, assembled together for quick and easy choosing, and priced at

22 and 25c. Roll to Clear

Some of these papers sold formerly at prices up to 60c. piece.

Odd Pieces 10c. Roll

Green and White Blinding.

27 in. wide, good firm quality, at a greatly reduced price. Special Friday and Saturday19c. Yard

Window Blinds.

Of firm quality material in a popular Cream shade, strongly attached to good serviceable rollers; size 36 x 72 inches; fittings in82c.

Cotton Blankets.

A good weight and soft fluffy quality, with gay colored borders and overstitched edges; size 54 x 74 inches. Reg. \$3.60 pair. Friday and Saturday\$2.98

Table Oil Cloth.

Plain White, White ground blocks, Marble and dozens of other fancy designs to choose from. These are all best quality goods with no imperfections to mar their appearance or wearing quality. 46 inches wide. Reg. 55 c. yard. Friday and Saturday48c.

Colored Turkish Towels.

Fancy striped and plain with deep fringed edges; size 15 x 33 inches. Reg. 26c. each. Friday and Saturday23c.

White Shirting.

Good heavy quality and widths up to 26 inches. All mill ends up to 7 yards long. Special for Friday and Saturday yard23c.

Cotton Serge and Gaberdine.

In Sage, Navy, Brown, Fawn, Grey and Black, also Fawn Cashmere. Could be used for making dresses, shirts or even window curtains; 26 to 35 inches wide. Reg. to 39c. yard. Friday and Saturday29c.

Navy Wool Serge.

Fine quality Dress Serge, 33 inches wide that would make up beautifully for women's and misses wear. Reg. 90c. yard. Friday and Saturday76c.

Welsh Flannel.

Heavy quality material with a soft even finish. Much used for men's and women's underwear; 30 inches wide. Reg. 85c. yard. Friday and Saturday79c.

GROCERIES

Arrowroot

"Atlas," the good reliable brand you always want to buy. 1 lb. packages. Reg. 40c. each. Friday and Sat.37c.

Potato Flour

Stickney & Poor's make. Ever dependable. Half pound packages. Reg. 20c. pkgs. Friday and Saturday17c.

Gorman & Eckert's Tapioca

Regular 22c. package. Friday and Saturday17c.

Pure Gold Quick Tapioca

Regular 20c. package. Friday and Saturday17c.

Shredded Wheat Biscuits

Fresh and free from dust, in closed packages. They have never seen the light and will not until you open them. Regular 25c. pkgs. Friday & Saturday23c.

Quaker Oats

The quality is well known for its superiority. Large packages. Regular 55c. each. Friday and Saturday48c.

"Quaker" Puffed Wheat

A most nutritious article of diet. Fair size packages. Regular 30c. each. Friday and Saturday24c.

Butter

Good quality for cooking or table use. 10 lb. tubs. Regular \$2.55 tub. Friday and Saturday\$2.60

Rolls Oats

Is what you eat that gives you the energy necessary to meet the daily grind. You cannot eat anything better than the porridge made from these rolled oats. Regular 7 1/2 lb. Friday5 lb. for 25c. and Saturday

Rayon-Sensation of the Textile World

A new textile, Rayon (artificial silk), making its commercial appearance in the early years of the present century, has within the past ten years become an industry of outstanding importance.

For 200 years man has endeavored to produce a synthetic textile by studying and imitating the processes of the silk worm.

In 1844, Chardonnet patented in France a method for manufacturing Rayon. More than a decade of experimentation elapsed before a yarn of sufficient intrinsic value to warrant manufacture on a large scale was produced. In the meantime English and German chemists were developing processes, so that by the beginning of the present century there were in use three commercial methods of producing Rayon.

In 1900 the world's production of Rayon amounted to only 1,500,000 pounds.

By 1913 the production had increased to \$5,500,000 pounds per annum.

It is estimated that in 1924 the total world's production amounted to 141,000,000 pounds.

There are to-day four different methods employed in the manufacture of Rayon. Fundamentally all of these methods consist of the chemical treatment of the cellulose found in vegetable life. By such treatment the cellulose becomes semi-liquid, and the solution thus obtained is forced through tiny holes into a long continuous thread which is hardened either in a liquid chemical solution or by evaporation in the air.

The world has become greatly interested in America's advance in the manufacture of Rayon. At present the United States produces 40 per cent. of the world's supply, and with the present American methods and speed, it will not be long before we control the world output. Rayon is an artificial silk, of like lustre, strength and value, but not dependent upon labor and political conditions, money exchange, silk-worm crop returns, etc. Rayon is manufactured from cellulose, that minute fibre cell of plant life, and so long as there is plant life in the United States, so long will Rayon be manufactured. Already it has been tried and found ideal in the manufacture of garments, and when mixed with pure silk in gowns, suits, etc., there is no difference discernible to the naked eye, and only the finest of microscopes can detect it.—Frank L. Sherrer in Forbes Magazine N.Y.)

Important to Housewives

A well known Chef of St. John's, says that he can make