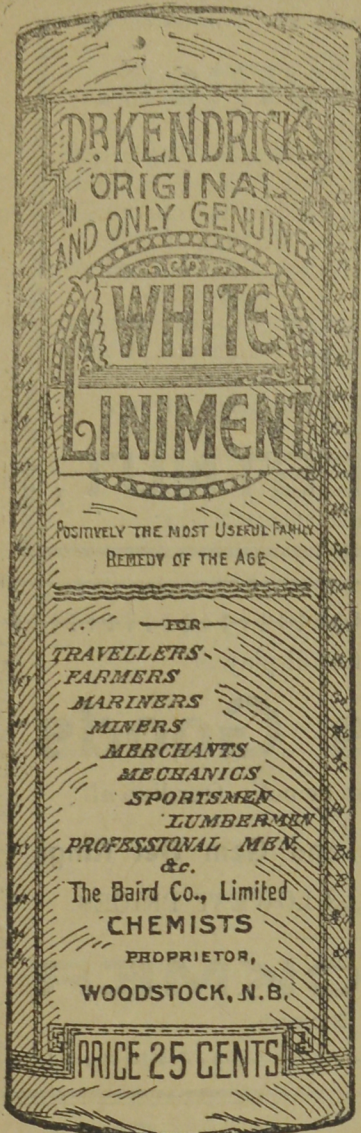




HOW FORESTS GROW

THERE ARE TWO GREAT TYPES, THE PURE AND MIXED.

One of the Marvelous Feats of Nature is the Balancing of Conditions Where Trees of Different Habits Enter the Struggle For Existence.

The laws which govern the distribution of trees produce the two great types, the pure and the mixed forest. The former is the result of local conditions which trees of one kind only can survive.

In the North woods the balsam occupies the swamps, usually to the exclusion of all competitors, since no other of the native trees can thrive in wet places. In the Black Hills and other parts of the middle west the small demands of the bull pine upon moisture enable it to form pure woods on a soil too dry to support other native trees. The jack pine of the New Jersey barrens and the long leaf pine of the southern states grow in pure or nearly pure stands since they alone can withstand the peculiar conditions of these regions.

Where climate and soil are favorable to various trees we find the mixed forest, the number of species in mixture depending upon the suitability of the locality to forest growth.

Upon the hardwood flats of the Adirondacks the hard maple, the yellow birch and the beech are the only deciduous trees able to withstand the severe climate. In the southern Appalachian forests, where the trees of the north and south meet under conditions favorable to both, we find more than 100 different kinds.

The distribution of trees, therefore, is the joint result of local conditions and of the individual and varying requirements of the different species upon moisture, soil and climate. The laws, however, which govern forest distribution are not identical with those which regulate the behavior of trees in mixture. They do not explain why each species, if undisturbed, maintains the same proportion in the mixed forest. Why does not the hard maple drive out its competitors in the Adirondacks, the oak gain the upper hand in the forests of the southern Appalachians, the red fir exterminate the western hemlock on the Pacific slope?

Wherever a mixed forest occurs there is an unrelenting struggle going on. Let us see how the combatants are armed and why the representation of each species remains unchanged.

The more important of the characteristics which affect the capacity of a tree to hold its own in mixture with trees of other kinds are its demands upon light, its rate of growth and its power of reproduction. No two species require an equal amount of light, grow at the same rate or are identical in their capacity to reproduce themselves. The endowment of each, with habits differing from those of its neighbors, but with strength and weakness so balanced that all which occur in mixture enter the struggle for existence upon an equal footing, is one of the marvelous feats of nature.

The red spruce of the North woods, through its ability to endure dense shade, has been given the power to hold its own against faster growing competitors, some of which exceed it greatly in their capacity to reproduce themselves. The young spruces which spring up here and there throughout the forest struggle along under the heavy crowns of the hard woods, where

a tree making more insistent demands upon light could not survive.

In the forests of the southern Appalachians the oak is in many localities the characteristic tree. Growing rapidly and exceedingly hardy, it might be expected to increase steadily its proportion in the mixture. The equilibrium is maintained through the fact that the oak can endure but little shade and that its seed is heavy, limiting its reproduction to the immediate vicinity of the parent tree.

In the same region the yellow poplar and the chestnut, both trees which grow rapidly and are capable of enduring considerable shade, are controlled, the one because much of its seed is barren, the other because many of the nuts are eaten by animals. And the red cedar, of slow growth and sparse representation, is aided through the distribution of its seeds by birds, with their power to germinate unimpaired.

The aspen, short lived and requiring much light, holds its own with longer lived and shade enduring trees because its downy seed is produced in great quantities and is scattered far and wide by the wind. The ash and the basswood, of rapid growth and bearing an abundance of seed, are withheld by strong demands upon light and by the seed of a fresh and fertile soil. The red fir, equaled by few North American trees in rapidity of growth and otherwise well equipped to gain the upper hand in its region, is controlled through the usual failure of its seed to germinate except when accident has removed the leaf litter and exposed the mineral soil.

The study of trees as living, striving organisms in a world of their own leads an almost human interest in the forest. Every day spent in the woods will be the pleasanter for some insight gained into what is going on within it, and an earnest observer can gain knowledge of practical value by an attempt to discover the factors which control the occurrence of trees in mixture. Forestry, which deals with the development of the highest utility of forests, means a thorough understanding of the habits of trees.—Overton W. Price in Youth's Companion.

HOUSES IN MOROCCO.

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In Morocco they build and make, and they do both things beautifully and well, according to one who has been there. But they seldom finish. "In a house dainty with fountains and arabesques and colored tiles," he says, "you will still find a corner uncompleted, a pillar which lacks the delicate fluting of the other pillars, an embrasure for a clock half ornamented with gold filigree and half left plain. And if they seldom finish they never by any chance repair. The mansion is built and decorated within. Artists fit the tiles together in a mosaic of cool colors and carve and gild and paint the little pieces of cedar wood and glue them into the light and pointed arches. The rich curtains are hung, and the master enters into his possession. There follows the procession of the generations. The tiles crack, the wood-work of the arches splits and falls, and the walls break and crumble. The householder sits indifferent, and the whole house corrodes. So in the narrow streets holes gap and the water wears a channel where it will and the mud lies thick and slippery on the rounded stones. The streets run steeply up and down the hills, wind abruptly round corners and dive into tunnels."

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INTERCOLONIAL RAILWAY

On and after Sunday, November 20th, 1904, trains will run daily (Sundays excepted), as follows:

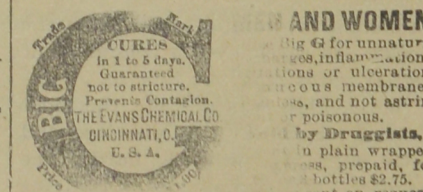
TRAINS WILL LEAVE FREDERICTON
No. 303 Mixed for Campbellton, Moncton, Chatham and Loggieville..... 5.45
No. 301 Express for Montreal, Chatham, Loggieville..... 16.40
No. 317 Suburban for Marysville..... 6.15
" 319 Suburban for Marysville..... 10.00
" 321 Suburban for Marysville..... 11.15
" 323 Suburban for Marysville..... 15.00
" 325 Suburban for Marysville..... 17.10
" 327 Suburban for Marysville..... 18.25
" 329 Suburban for Marysville..... 21.00

TRAINS WILL ARRIVE AT FREDERICTON.

No. 302 Express from Montreal, Quebec, Chatham and Loggieville..... 13.05
No. 304 Mixed from Chatham Junction, Chatham and Loggieville..... 18.25
No. 318 Suburban from Marysville..... 8.15
" 320 Suburban from Marysville..... 11.00
" 322 Suburban from Marysville..... 13.25
" 324 Suburban from Marysville..... 17.05
" 326 Suburban from Marysville..... 18.20
" 328 Suburban from Marysville..... 19.15

All trains are run by Atlantic Standard Time. Twenty-four hour notation. 24.00 o'clock is midnight.

Moncton, N. B., November 18th, 1904.



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