BOTANY

NATURE RAMBLINGS

Guardians of the Snow

➤ CONIFER trees and snow always seem to belong together.

However, conifers are by no means confined to the lands of snowy winters, but so ineradicable is the picture of snow-surrounded evergreens that when Rudyard Kipling wanted to pack the geographical grandiosity of the Bristish Empire into a single phrase, he wrote of "dominion over palm and pine."

Although it is true that the coniferous trees can be found in lands that reach toward the sun (in our own South, they dispute dominion with at least one kind of palm!), nevertheless they do belong first to the North. Or perhaps it would be more proper to say that the North belongs to them. They circle the boreal end of the earth like a dark-green garland. They are the last trees that look upon the desolate tundras that run to the Arctic sea. Willows and populars and birches push toward the North, too; but they surrender and dwindle to bushes, while the spruces still stand up as trees.

Incidentally, Kipling limited the northern extent of his Empire unnecessarily (though probably quite unconsciously) when he made the pine the symbol of the North. Spruces run far to the north, beyond the last of the pines, just as the pines leave the spruces behind in their southerly extension. Their ranges overlap, but it is the spruce that in general stays within the circle of deep annual snow.

There is good reason for that, for the snow is more necessary to the spruce than it is to the pine. Some of the evergreens—and pine and juniper are outstanding among them—can stand a good deal of drought. Not all kinds of pine; but there are enough dryland pines to make good forests in lands where the slow seep of melting snow never figures as a source of ground water.

Not so the spruces, however, nor yet their cousins the firs. They are rather more particular than most pines, and seek the more moist regions. Where they grow in competition with pines, the spruces and firs cling to the shady, damp sides of ravines. Lands that they dominate are usually found to be perennially moist. In part, these conifers attend to that themselves, for their dense foliage makes a superior shade for the snow that lies under their canopy, holding it against the ardor of the spring sun and permitting it to melt only slowly —and to the advantage of their roots.

(Reprint from SNL, Jan. 4, 1936)

Science News Letter, December 31, 1949

PSYCHOLOGY

Women Rely on Sight

➤ WOMEN put more reliance in what they see than in what they hear or feel when they have to decide something through the use of these senses.

That "women are more affected by the nature of their surroundings" than men is the conclusion drawn by Dr. H. A. Witkin, department of psychology, Brooklyn College. He subjected men and women to tests: centering a rod in a frame, putting a tilted room upright, measuring body sway and finding hidden figures.

From these tests he found women rely less on impressions from their bodies than men. Although many persons were tested, Dr. Witkin found his averages using approximately 250 women and 135 men for the tilting room and rod and frame trials, and about 50 of each sex for the body sway and hidden figures tests.

To tell how a person judges the upright no matter in what position his body is and no matter how the surroundings appear, Dr. Witkin uses a small room within which is a chair. Either the room or the chair may be tilted to any degree left or right from inside or outside the room. They may be tilted alone or together, to the same side or opposite sides, and at the same speed or different speeds.

Since nothing outside of the room can be seen by a person taking the test, the object is to bring either the chair or the room to an upright position. In some instances Dr. Witkin found that the room could be tilted as much as 56 degrees, yet be considered vertical by some.

In one series of trials, where room and chair were initially tilted to the same side, men on the average saw the room as straight when it was tilted 11.5 degrees. Women, however, thought it was straight when it was tilted 17.7 degrees on the average.

Reason for the differences in perception brought out by the tests is due to differences in personal characteristics between men and women, Dr. Witkin believes. He is making an intensive personality study of many men and women also taking the perception tests. They include a normal group selected from among students at Brooklyn College and an abnormal group, patients at a mental hospital in the state. Dr. Witkin is also making a study of the perception of children at different ages. Collaborating with him in his work are Dr. S. Wapner, Clark University; Dr. P. Bretnall, Brooklyn College; Dr. M. Hertzman, City College of New York; K. Machover, Kings County Hospital, New York City; and T. Leventhal.

Science News Letter, December 31, 1949

BIOLOGY

Algae, "Plus" and "Minus" Sexes, May Aid Food Study

➤ A TINY plant with two sexes which are so much alike they are called "plus" and "minus" may help science to understand how green plants manufacture their food by photosynthesis, said Dr. Ralph A. Lewin of Yale University before a meeting of the American Association for the Advancement of Science.

The plant is the one-celled, free-swimming alga, Chlamydomonas. It goes through its reproductive cycle in as little as nine days, which makes it a favorable object for genetic study, Dr. Lewin said.

By inducing mutations, or hereditary changes, with radiation, ultraviolet light, or other means, and then comparing the mutant with the normal type, Dr. Lewin suggested that "From their differences (we can) learn much about the process of photosynthesis."

The two "sexes", plus and minus, "cannot be distinguished by any visible character except by their mating behavior, where the difference might be said to be psychological," he said.

Science News Letter, December 31, 1949

Words in Science—Absorption-Adsorption

➤ THE two words absorption and adsorption are often confused just because the appearance of the words in type is so similar. The meaning is somewhat different.

Absorption is the taking up or soaking up of a liquid or a gas as a sponge takes up water.

Adsorption is the process of sticking to the surface rather than penetrating it as with absorption. Gases sometimes adhere to solids by adsorption. This is the basis of the gas mask. The poison gases are adsorbed by the charcoal contained in the mask, the charcoal being finely pulverized so as to present an enormous surface to the poison gas.

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