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mum in the polar regions; it is directly caused by a solar eruption."

Dr. L. V. Berkner, of the Department of Terrestrial Magnetism of the Carnegie Institution of Washington, explained to the meeting how the various layers of the ionosphere are measured by sending up radio waves and catching their echoes. There are three main layers, he stated, namely: the E-layer, 62 miles high; the F-1 layer at 140 miles and the F-2 layer at 220 miles. At night, or when the sun is low, the last two merge to form a single F layer at a level of 155 miles.

Apparently corpuscles shot out from the sun disturb the F layers in which, he stated, occur the chief ionospheric effects associated with magnetic storms.

Dr. Carl W. Gartlein, curator of the Department of Physics at Cornell University, told of connections, which he has found, between the earth's magnetism and the aurora borealis. Auroras occur most frequently, he said, in a zone about 23 degrees from the magnetic pole, which is on the Boothia Peninsula in northern Canada. The 23 degree zone roughly follows the border between the United States and Canada.

"The disturbances of the geomagnetic field, or magnetic storms, occur most frequently near the equinoxes," Dr. Gartlein announced. "Auroras are likewise most frequent then in the middle latitudes (45 degrees to 60 degrees geomagnetic latitude). There is also an approximate eleven-year cycle in the number and intensity of magnetic storms which has its counterpart in displays of aurora. These cycles rise to a maximum about a year after the peak of the sunspot cycle. Large magnetic storms are always accompanied by auroral displays in middle latitudes and these displays move farther from the poles during more intense storms. Near the poles the magnetic storms and auroral displays are not always simultaneous."

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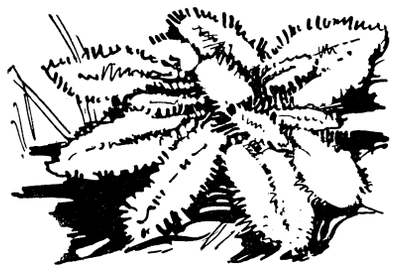
BOTANY

NATURE RAMBLINGS
by Frank Thone



Rosette Plants

SOME plants ages ago learned the trick adopted by modern soldiers, of lying down flat when exposed to enemy fire. The enemy fire, in their case, consists of snow and sleet of winter, and the plants lie down by forming mats or rosettes that hug the ground, gaining cover and protection from the very snow that would otherwise overwhelm them. We see perfect examples of such low-lying rosettes in dandelion, mullein, plantain and similar weeds. As a matter of fact, they are weeds simply because they are so successful as plants, gaining and keeping roothold in a million places where they are not wanted.

Plants able to produce leaves sufficiently tough to withstand winter's cold have a quite considerable advantage over less resistant species that must tuck next year's foliage tightly into buds, as most woody plants do, or hide beneath the ground surface, like most perennial herbs, or even pack the tiny beginnings of the whole plant away within seeds, after the manner of all annuals. A rosette plant has its leaves all there, spread out and ready to catch the sun, the moment the snow covering is thawed away That is the reason why the first spring flowers that adorn city dwellers' buttonholes are usually dandelions — precocious blooms that pop out, far ahead of the season, in sheltered sunny spots.

The rosette habit gives other advantages to early-starting plants. The circle of leaves preempts the ground beneath it, keeping it bare of the competition of other plants. At the same time, it affords a certain degree of protection against drying to the soil beneath, thus benefiting at least the more superficial part of its root system.

It is rather characteristic of plants that form winter rosettes, to forsake the meek humility of their beginnings and send their flower stalks aloft as far as they can reach, when time for reproduction comes. Thus, the tall, bare scapes of the dandelion, the ambitious, wiry spikes of the plantain, the truly towering growth of the mullein in its second year. It is truly a case of the meek inheriting the earth —by becoming self-assertive.

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The *Ross Shelf Ice,* sometimes called the barrier, in the Antarctic is a vast floating sheet of snow-ice rising cliff-like from the Ross Sea 20 to 200 feet.

Earth Trembles

Information collected by Science Service from seismological observatories and relayed to the U. S. Coast and Geodetic Survey resulted in the location of the following preliminary epicenters:

Friday, Feb. 7, 10:13.1 a.m., EST

On Kamtchatka peninsula. Probably in region of Latitude, 56 degrees north; longitude, 158 degrees east.

Sunday, Feb. 9, 4:43.9 a.m., EST

Off coast of northern California. Latitude, 41 degrees north. Longitude, 127 degrees west. Strong.

Tuesday, Feb. 11, 9:35.5 a.m., EST

Probably about 100 miles off west coast of lower Mexico, near Guatemala boundary. In region of latitude, 14 degrees north; longitude, 94 degrees west. Strong shock.

Stations cooperating with Science Service in reporting earthquakes recorded on their seismographs are:

University of Alaska, College, Alaska; Apia Observatory, Apia, Western Samoa; University of California, Berkeley, Calif.; Dominion Observatory, Ottawa; Dominion Astrophysical Observatory, Victoria, B. C.; The Franklin Institute, Philadelphia; Harvard University Observatory, Harvard, Mass.; University of Hawaii, Honolulu; Magnetic Observatory of the Carnegie Institution of Washington, Huancayo, Peru; Massachusetts Institute of Technology, East Machias, Maine; University of Michigan, Ann Arbor, Mich.; Manila Observatory, Manila, P. I.; Montana School of Mines, Butte, Mont.; Montana State College, Bozeman, Mont.; Nebraska Wesleyan University, Lincoln, Neb.; Pennsylvania State College, State College, Pa.; Phu Lien Observatory, near Hanoi, French Indo-China; Seismological Observatory, Pasadena, Calif.; University of Pittsburgh, Pittsburgh, Pa.; University of South Carolina, Columbia, S. C.; University of Utah, Salt Lake City, Utah; Utah State Agricultural College, Logan, Utah; U. S. Weather Bureau, University of Chicago; Williams College, Williamstown, Mass.; Zikawei Observatory, near Shanghai, China; observatories of the Jesuit Seismological Association at Canisius College, Buffalo, N. Y.; Fordham University, New York City, Georgetown University, Washington, D. C., St. Louis University, St. Louis, St. Xavier College, Cincinnati, and Weston College, Weston, Mass.; observatories of the U. S. Coast and Geodetic Survey at San Juan, P. R., Sitka, Alaska, Tucson, Ariz., and Ukiah, Calif.