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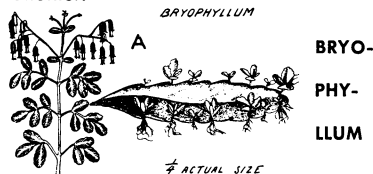
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of Alaska, say, or the mugginess of Central American tropics.

Surf or river bathing wherever possible, daily cool and gradually cooled showers, and treatment with alternating hot and cold streams of water will be useful, he says, to harden soldiers with poor climatic adaptability and to increase self-confidence and military morale.

Before sending units on duty to Alaska or the tropics or dry desert regions of hot days and cold nights, tests should be made of the men's climatic adaptability and endurance. Among tests recommended by Dr. Singer are determinations of the temperature at which men are chilled at different humidities and the temperature at which they start sweating at different humidities.

Another test is made by taking the

pulse after forced forward bending. Those whose pulse rate slows more than 10 beats per minute after the forced forward bending are poor risks in climatic exposures unless hardened.

There is a best diet for each climate, Dr. Singer says. This should be used as far as possible to enhance the adaptation of troops to the climate. Many calories, much fat and much protein food, such as meat, cheese and eggs, are advised for cold climates. A low calorie diet with little fat and protein but lots of sugar and starch foods, is advised for the tropics. In both cold and tropic climates, vitamins and minerals must be supplied, because in the cold climates there is a scarcity of fresh fruits and vegetables, and in the tropics the soil lacks minerals.

Science News Letter, December 7, 1940

METEOROLOGY

Texas' Big Storm Started Up In Bering Sea Region

Was Meteorological Relative of Armistice Day Storm; Cold Mass from Arctic Met Warm Mass from Gulf

TEXAS' big storm (Nov. 24), that sheathed the northern Panhandle in glaze ice and at the same time "like to drowned" Galveston on the Gulf, was a meteorological relative of the Armistice Day blizzard that blocked the upper Mississippi valley with snow and drowned a lot of duck hunters.

Both storms originated in the same way, Principal Meteorologist C. L. Mitchell of the U. S. Weather Bureau told Science Service. A cold air mass, starting in the Arctic, slid down over the western part of the country, penetrated far enough to find a mass of warm air of Gulf origin, and proceeded to wring the water out of it in great quantities.

The Texas storm's air mass is known to have started either in western Alaska or eastern Siberia, for high-soaring balloons sent up from Fairbanks, Alaska, found no traces of it as it passed, while similar instrument-carriers from Anchorage got fairly into it. Striking into the United States proper near the Puget Sound region, it cut diagonally across country, to create the climax of its mischief in Texas.

There, in encounter with the moisture-bearing warm air mass from the south,

it simply hung, almost immovable, while it rained and rained and rained. At Galveston, more than ten inches fell in 24 hours. In the Panhandle area precipitation was lighter, but the rain froze as it struck the cold ground level, sheathing everything with thick layers of wire-wrecking, tree-breaking, traffic-paralyzing ice.

Skirts of the storm were far-flung. There was rain to the north, as far as southeastern Colo- (*Turn to page 367*)

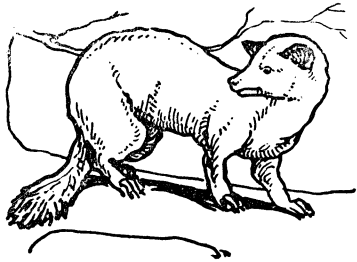
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ZOOLOGY
NATURE RAMBLINGS
by Frank Thone



Mustelids

WHEN WE hear the word "carnivore" we automatically think of cats and dogs. Urged to add to the list of representatives, we may recall the ill fate of the bad boys who poked fun at a prophet, and remember that bears are meat-eaters, too. But it would probably take at least a little mental prodding to make us think of the members of the weasel tribe, the short-legged, long-bodied animals known collectively as the Mustelidae.

Yet these restless hunters are highly important, both in the economy of nature and in man's commercial reckoning. For they include the most valued furbearers sought by trappers in all the colder lands of the world. A mere list of their genera is a veritable catalog of the nobility among peltries: ermine, sable, otter, marten, mink, badger, fisher, skunk. Without the Mustelidae, fashion designers and the fur trade would be in a sad state.

Another group of persons interested in a different phase of wildlife look upon these short-legged carnivores with feelings exactly the opposite of those that trappers entertain for them. To the older-fashioned game warden, interested only in increasing the number of quail, pheasant and other birds to shoot at, all the Mustelidae are simply and unqualifiedly "vermin," because they do rob nests and kill birds. They would exterminate them to the last beast, if they could.

However, this extreme antipathy is fortunately passing, as a more modern type of wildlife management, based on a better understanding of ecology, tends to replace the older, more naively direct-minded variety of game raising. It is coming to be realized that the wildlife population of a given terrain is the healthier the more nearly it approaches

a state of undisturbed nature—and nature includes a good deal of killing of supernumerary game birds and animals by hungry flesh-eaters. If man manages his own conduct as intelligently as weasel and skunk do theirs, there will still be plenty left for shooting.

Of course, the role of this long-bodied tribe in nature is not limited to killing the same things man wants to kill. Game birds and animals form only a minor part of the diet of the Mustelids. To a far greater extent, they prey upon the swarming rodent populations which might otherwise get completely out of hand. Some of them, like the skunk, for example, also have tremendous appetites for white grubs and other destructive forms of insect life. The Mustelidae pay for their place in the world with services worth even more than their costly furs.

Science News Letter, December 7, 1940

ENGINEERING

Hard Surface on Steel Provided by New Process

A SHELL of hard steel, containing more than 1% of carbon, can be produced on the surface of articles of softer steel by exposing them when heated to highly heated carbon-containing gases. This was reported before the American Chemical Society by W. A. Darrah, of the Continental Industrial Engineers, Inc., Chicago.

Methods somewhat similar have been used before, Mr. Darrah stated, but they left a coating of carbon scale, requiring expensive and annoying cleaning methods. In the new process, he announced, this is prevented by performing the carburizing operation in a muffle of refractory material, and preheating the gases to 1600 or 1700 degrees Fahrenheit.

The process is already being used commercially in one automobile plant, he said.

Science News Letter, December 7, 1940

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From Page 364

rado and southwestern Kansas—where the Dust Bowl used to be—and rain to the east as far as Alabama.

Reports that the Panhandle had suffered from sleet were corrected to read "glaze" by the Weather Bureau. Sleet, as defined by meteorologists, means little, hard, round pellets of ice—frozen raindrops. Glaze is the solid coating of ice that forms when rain from a warmer overhead stratum strikes cold objects on or near the ground and freezes fast to them.

Science News Letter, December 7, 1940

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