



Veterans of Winter

► WOOLLY-BEAR caterpillars sometimes surprise us, during spells of mild winter weather, by suddenly appearing out of nowhere, to go humpity-hump across our paths. Most of us, remembering the first (and perhaps only) nature lessons we received, think that proper caterpillars should spin themselves into cocoons in the fall, to emerge as butterflies or moths in the spring. To see a caterpillar active so long after autumn seems a contradiction of our kindergarten lesson.

It is a contradiction. We didn't learn everything in the kindergarten—least of all about nature. The teacher gave us as much as she thought we could absorb at the time; it isn't her fault if we stopped learning when she stopped teaching us. The story she gave us is true enough—

for that kind of caterpillar. Woolly-bears, and a great many other kinds, have a different kind of life-history. They hatch and grow up in late summer, hide out in sheltered cracks and crannies during the winter, and go on being caterpillars for a while when warm weather comes again. Then they spin sketchy nests (hardly to be dignified as cocoons), sleep briefly as pupae, and emerge as adults.

Still other members of the butterfly-moth order live through the winter as adults, clinging motionless to bark or twigs in the woods. A familiar example is the beautiful dark-winged mourning-cloak butterfly.

What is true for members of this one order is true throughout the whole world of many-legged lesser animal life. Whole hosts of insects, spiders, etc., quietly die in autumn, leaving only their eggs to survive the winter and renew the life of their species in spring. Others endure the hard season as larvae or pupae, hidden away in the safest lurking-places they can find, and ready to complete metamorphosis into adults when the sun shines longer and more warmly each day. Still others manage to live through as adults, and are thus able to get an early start when warmth permits them to move and feed and mate again.

Science News Letter, March 1, 1947

CHEMICAL ENGINEERING

Materials Flow Together To Give Product in Process

► CONTINUOUS manufacture of chemicals with two or more materials flowing together and producing some needed product is the latest method in chemical engineering.

One of the materials needed for soap is made in this way, a chemical team from Colgate-Palmolive-Peet Co., Jersey City, reported to the American Institute of Chemical Engineers meeting in Louisville, Ky. Fatty oil is pumped one direction and water another under high pressure and temperature and fatty acids and aqueous glycerol result.

A continuous method of making greases by this new and better way was reported by Dr. H. G. Houlton of Girdler Corporation of Louisville. Quality varied from batch to batch in the past, while for four years superior, uniform lubricating grease has been produced at the rate of 60 pounds a minute from each machine used.

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CHEMICAL ENGINEERING

Whiskey May Become Distillery By-Product

► WHISKEY may become a mere by-product of the distilleries.

If it does, it will be because the soluble wastes from making whiskey are worth more as feed for livestock and poultry than whiskey is as a drink. J. W. Spanyer, Jr., of the Brown-Forman Distillers Corp., told the American Institute of Chemical Engineers that that time may come.

Solids from soluble waste, a liquid left at the bottom of the stills after the whiskey and "light grain" by-product have been removed, have produced startling results as a feed. The wastes are better feed, Mr. Spanyer explained, than the original grain. "In fact," Mr. Spanyer concluded, "some of the feeding experiments conducted with this material by various universities have been so startling that one distillery official states that whiskey may eventually be the by-product of the distilling industry."

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