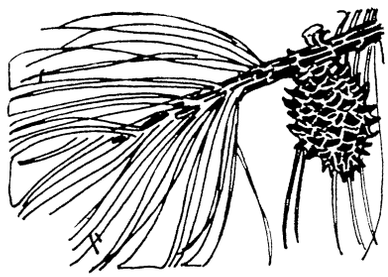
CHEMISTRY

NATURE RAMBLINGS by Frank Thone



New Insecticide

A NEW insect-killing chemical, derived from Southern pine, promises to increase American independence of war-pinched imports. The substance, discovered by chemists of the Hercules Powder Company in the course of research on turpentine and pine oil, can be substituted for pyrethrum and rotenone in fly-killing sprays used in homes and dairy barns. It is stated to be effective against such domestic pests as mosquitoes, roaches, moths, ants, mites, silverfish, bedbugs, centipedes and spiders.

Pyrethrum, at present the principal ingredient of insect sprays, was formerly practically a monopoly of Japan. Now it is produced on a large scale in the British African colony of Kenya, but lack of shipping has cut the supply. Rotenone, the other great fly-spray poison, comes from plants that grow in the East Indies and also in South America. But the Japs have the East Indies for the time being, and shipping lack again imposes restrictions on the South American supply. Promise of a large supply of home-made insecticide is therefore welcomed by spray manufacturers and users.

After trials on laboratory fly populations, the claim is made that the new material kills females as effectively as it does males. For some unknown reason, pyrethrum sprays have been chiefly effective against male flies. Obviously, a better kill of females is a great advantage.

Cost of the new insecticide is said to compare favorably with that of pyrethrum. Chemically, it is defined as the thiocyanoacetate of a secondary terpene alcohol. For convenience, it has been given the trade name Thanite.

Experimental work with the killing agent in fly sprays has been carried on by a cooperative fellowship at the University of Delaware under the direction of Dr. L. A. Stearns, and in livestock sprays by the Kansas State College of Agriculture under the joint direction of Dr. Roger C. Smith of the Entomology Department, and Dr. F. W. Atkeson and Dr. A. O. Shaw of the Dairy Husbandry Department.

Science News Letter, June 20, 1942

PHYSICS

Baseball Really Does Curve According to Measurements

All Pitches Called Curved Deviated From Straight Line, Some as Much as Six and a Half Inches

THAT a baseball really does curve and may deviate from a straight line much as 6½ inches at the home plate appears from measurements made by Frank L. Verwiebe of Eastern Illinois State Teachers College, and reported in the *American Journal of Physics* (April).

These results run counter to the claims, made in "Life" magazine last September and supported by convincing pictures, that all "curves" are really straight and that the curves that many protested having seen are merely optical illusions.

The results also contradict the assertion in "Life" that if there is any curvature at all, it occurs in the first half of the pitch, the last half being perfectly straight. The measurements showed that most of the curving occurred during the last half, thus giving solid foundation for the "break" which so many insist they have seen.

The measurements were made in the same way that the path and the velocity of a bullet are determined. Four rectangular screens were set up between the pitcher and the home plate and one at the home plate. The five screens were crossed by vertical and horizontal threads, accurately spaced and aligned by a surveyor's transit. The position of the ball as it passed through each screen could be determined by the broken threads to within less than an inch.

One throw was intentionally straight, and the measurements showed that it really was straight. All pitches called as "curves" proved to be actually curved, the deviation from straight line travel varying from 2½ to 6½ inches as measured at the home plate. The outdrops deviated most, and are apparently the easiest curves to throw.

The speed of the ball was found to vary from 90 to 130 feet per second, requiring from one-half to two-fifths of a second to travel the 50 feet from the pitcher to the batter's box. For a six-inch deviation, most of it occurring in the last fifth of a second, the ball must be traveling crosswise at two feet per second, which can easily give the batter the impression of a "break."

To cause a ball, launched horizontally at 130 feet per second, to rise requires that it be given enough spin to lift itself 7½ inches, this being the distance it would fall during the flight by gravity. This is very difficult, says Mr. Verwiebe, although conceivably a Walter Johnson or a Bob Feller might give the ball a slight "hop."

He concludes that many peculiar effects reported about baseball curves are still unexplained.

Science News Letter, June 20, 1942

A ten foot *rock python* and a wild buffalo invaded an Australian army camp recently, when long grass in the surrounding area was burned off.

The north end of a sensitive *compass needle* follows the sun's path by diverging slightly to the east in the forenoon, to the west as the sun descends.