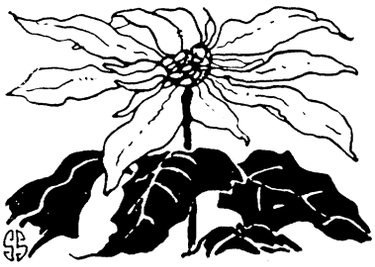
BOTANY

NATURE RAMBLINGS
by Frank Thone



A New Start

POINSETTIAS that bloomed bravely at Christmas are looking very sick and discouraged now, most of them. Their leaves have fallen off and the flaming circle of their flowering crowns droops wearily. What to do about it?

Put them away in a cool corner in the basement and do not water them, advises the *Missouri Botanical Garden Bulletin*. That's all you will need to do until late spring.

In May (or even June or early July) cut the bare stalks off about a foot above the rim of the pot. Shake some of the soil from the roots and re-pot into a six- or seven-inch pot.

Then sink the pot into the soil in a sunny place in the garden. Keep it watered moderately. In a few weeks several shoots will appear. Pinch off all but two or three of them. The branches will grow very rapidly, and should be given support. Lift the pot out of the ground and take it into the house in September.

Lift the pot occasionally. If this is not done, a large root will grow out through the hole in the bottom, and when this is severed, on taking the plant into the house in autumn, the shock will cause the plant to lose its leaves and become dormant.

Setting the plant into the open soil is attempted by some persons. Poinsettias treated in this way will grow enormously during the summer, but it is impossible to pot them successfully in autumn. Cutting the roots always sends them into immediate dormancy.

Whatever you do with a poinsettia, indoors or out, never let it get cold. Remember, poinsettias come from the Gulf Coast lowlands of Mexico, and are tropical plants in every sense of the word. Summer and winter, they must be kept warm.

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MATHEMATICS

Mathematical Computation For Chances of Reform

A MATHEMATICAL computation may give a method of predicting whether a prisoner may be expected to "go straight" and adjust to outside life when released from jail.

Dr. Ruth Struik of Belmont, Mass., and Dr. Miriam van Waters of Framingham, Mass., for two years have endeavored to reduce to mathematical symbols life histories of women offenders in the Massachusetts Reformatory for Women. These symbols are then combined and analyzed so as to give a prediction as to whether each woman will readjust to life after release.

To the American Mathematical Society meeting at the College of William and Mary they announced that a number of satisfactory correlations between predictions have been obtained, but that it is still too early to be certain that it is strictly possible to predict human behavior on this basis.

Wrap in Doughnut Surface

MATHEMATICS says that the surface of a doughnut can be wrapped around the surface of a ball.

The famous theorem due to the German Riemann and the Frenchman Poincaré that asserts this possibility has been proved and generalized by purely algebraic methods. This achievement was reported by Dr. O. P. G. Schilling, of Johns Hopkins University.

More generalized surfaces like pretzels are also used by the mathematicians. One easy way to make up a pretzel is to attach to an ordinary sphere four or five handles, just like the handles of a jug.

If such a pretzel is wrapped around a ball, it will usually cover the surface of the ball several times over, except for a few points where it must fold over or cross through itself. Such points are called branch points. The famous theorem generalized by Prof. Schilling states that you can always wrap up a ball so that it is covered a given number of times and has certain specified points as its branch points. Furthermore, you can specify in advance certain permutations or interchanges among the points of the pretzel. They form a so-called "group."

Prof. Schilling's new proof gives this theorem in a number of cases without using the deeper notions of mathematical analysis. The proof applies equally well to surfaces built up with ordinary numbers or with other, more bizarre number systems. It even works for number systems in which the number one added to itself seven times (or thirteen times, or any prime number of times) gives always zero!

Study Stirring of Coffee

A BIT of mathematics was sprinkled into the American breakfast coffee cup and the verdict is that it is not necessary to be too careful in stirring your coffee.

This is one of the consequences of some new theorems presented to the American Mathematical Society by J. C. Oxtoby, one of Harvard's junior fellows who is researching in mathematics.

His paper concerned "metrically transitive" transformations. A single stir of a cup of coffee is one example of a transformation: it carries, or "transforms," each drop of coffee to some definite new position in the cup. Mr. Oxtoby's methods applied to this particular case show with mathematical certainty that if such a single stir, or transformation, is applied repeatedly, it is almost certain that every bit of coffee will ultimately be adjacent to some drop of cream.

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