



Mistletoe

► MISTLETOE, which all over the country is making boys bold and girls blush, has many reputations. None are as romantic as the one we briefly bestow on it at the Yuletide season.

For one thing, during the workaday months of the year mistletoe is thought of, if at all, preeminently as a plant pest. It is a plant that grows on trees as a parasite. In Australia mistletoe has reached the status of a major pest. Its principal victim there is the eucalyptus tree, on which it has worked such damage that the weed killer 2,4-D is being used in a full scale campaign against it.

Mistletoe is native to both the Old World and the New, the two being different forms of the same family. Many legends and

charms were associated with the mistletoe in Europe. According to one belief, the mistletoe was once a full grown tree that grew like any proper tree on its own roots sunk firmly in the soil. Then, the legend has it, its timber was cut for the cross on which Christ was crucified. Since then it has dwindled to its present low estate, a dwarf and a parasite living off other trees.

The belief is still held in some of the more superstitious parts of Germany that mistletoe will make ghosts appear and if you talk to them they will answer you.

Among the ancient Druids, says Charles M. Skinner, mistletoe was a symbol of spirit, since it grew in the air on the sacred oak. At the year's end, a Druid priest in a white robe would cut the mistletoe with a golden sickle. A white cloth spread on the ground made certain that the twig did not touch earth.

The people would make charm bracelets and rings of the plant. Worn on the person or fastened over doorways, it was believed to have power to ward off evil.

The seeds of this parasitic plant, which has meant so many different things to different men and different ages, are given a wide range by the birds that feed on the berries. The seeds are sticky and they adhere to the bill of the feeding bird. Later the bird will clean his bill by rubbing it against the bark of a tree.

The seed sticks to the bark. Eventually it puts out a tap root which penetrates the bark and draws on the food circulating in the tree's sap.

Mistletoe has many facets: Cupid's ally, plant pest, magic charm, wood of the cross. It is also the official state flower of Oklahoma!

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ENTOMOLOGY

U. S. and Canada Blitz Common Foe: Mosquitoes

► A COMBINED airborne operation against an airborne foe has just been carried out jointly by defense agencies of Canada and the United States as scientists of the two countries leveled their deadliest insecticides against the arctic mosquito.

Airplanes operating in the Hudson Bay area sprayed wide swaths of enemy breeding territory, killing off the pestiferous little insects by the millions. The joint operation, organized to test the effectiveness of various insecticides in making the north country habitable for troops in the field, proved that DDT and parathion do an effective job in killing off the larvae.

Although DDT was used principally, parathion proved highly effective at even lighter dosages. Parathion, the U. S. Bureau of Entomology and Plant Quarantine explains, is so deadly a poison that it has not been recommended for general use by the public.

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On This Week's Cover

► NOVA Persei, a star that exploded in 1901 and out from which a gaseous shell has been growing ever since, is one of the objects recently photographed with the 200-inch Hale telescope at the Palomar Observatory. This photograph was taken as new tests of the giant instrument began, following a summer of repolishing portions of the surface of the mirror. Pictures such as this, taken to determine the 200-inch's resolving power, show that the perfection for which the astronomers were aiming has been achieved.

Nova Persei was only a very faint star of about 12th magnitude in 1901. Suddenly it exploded. Within 28 hours it became a moderately bright star of the third magnitude and could be seen with the naked eye. Within a year it had faded until it was only one-thousandth as bright as when it exploded. It continued to fade for about 20 years. Today its light varies between the 12th and 14th magnitude again and it can be seen only with powerful telescopes.

The nebulosity which now surrounds it became visible with telescopes six months after the outburst. This gaseous envelope has continued to increase steadily in diameter and at almost a uniform rate. Spectroscopic observations of the speed of the outward movement of the gas, combined with measurements of the expansion from many photographs like this, taken since it blew up, reveal its distance from the earth to be about 2,000 light years (one light year equals six million million miles).

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ASTRONOMY

Telescope Mirrors Heavens

► THE world's largest telescope, the 200-inch Hale telescope on Mt. Palomar, after having its face polished, is back at work mirroring distant universes with satisfactory accuracy.

Dr. Ira S. Bowen, director of Mt. Wilson and Palomar Observatories, when he received this year's Rumford Premium from the American Academy of Arts and Sciences at Boston described the first test observations.

One is a photograph of a star that exploded in 1901 and became so brilliant that it could be seen with the naked eye. Nova Persei has now faded to near its original faintness, visible in only the largest telescopes. The new Palomar photograph shows its gaseous shell in clear detail, although it takes light 2,000 years to reach the earth from this star.

A search of the heavens can now begin with the new giant telescope, Dr. Bowen indicates. Direct photographs will obtain

more information on the number of nebulae, like our Milky Way, and their distribution in space.

Spectrographic work will begin in March and will clock the velocities of the huge island universes moving out in space millions of light years from the earth.

Auxiliary equipment will be added to the Hale telescope in coming months. One supplementary lens will give the 200-inch telescope the same focal length as the 100-inch on Mt. Wilson and allow direct comparisons between photographs taken with both instruments. A Coude spectrograph will also be completed later.

In addition to polishing high spots around the outside edge of the mirror, a system of fans around the mirror and insulation prevent temperature changes from interfering with the definition of the mirror.

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