BOTANY

NATURE RAMBLINGS by Frank Thone

What Is Arbutus?

➤ ST. PATRICK'S DAY programs almost invariably include (and properly so) that beautiful Irish song, "My Love's an Arbutus." But listeners in the eastern United States and Canada, familiar only with the lovely early wildflower known as the trailing arbutus, are often a bit puzzled over the last verse, wherein the poet likens his fidelity to the evergreen leaf of the "arbutus tree." Lovely and fragrant though the trailing arbutus is, it certainly never even faintly resembles a tree.

The difficulty arises from the fact that the arbutus of Ireland (which incidentally is a member of the original and true genus *Arbutus*) actually is a tree, while our trailing arbutus belongs to a different, though related, genus, *Epigaea*. Its full botanical name, *E. repens*, exactly describes its quite un-treelike growth habit. *Epigaea* comes from two Greek words meaning "upon the earth", while *repens* is Latin for "creeping".

When our Gaelic bard sings:

"But tho' ruddy the berry and snowy the flow'r
That brighten together the arbutus bow'r,"

he shows that he knows his tree well, for the arbutus of Ireland normally continues to produce white flowers while its red fruits ripen. These red fruits have given rise to an alternative name, "strawberry tree".

Curiously enough, while the one foreign sister-species of our Eastern trailing arbutus grows in Japan, the only other species closely related to the tree arbutus of Ireland (incidentally also of southern Europe) occur in our own West. The large shrub or small tree known in California by the Spanish name *madrona* belongs to the genus *Arbutus*. There is also an *A. arizonica*, a very handsome plant, that seems to have no generally accepted common name.

Science News Letter, March 13, 1948

ENGINEERING

Detects Invisible Vapors

Device, which functions as leak detector, looks like a "Buck Rogers" pistol. It is sensitive to some vapors and air-borne particles, including odorless gases.

➤ A LABORATORY device, described as having a sense of smell but which does not really function in the same manner as the human nose, detects certain classes of invisible vapors and air-borne particles including some which have no odors.

The instrument was described to the Institute of Radio Engineers by William C. White of General Electric, and also described by J. S. Hickey of Schenectady on the General Electric WGY Science Forum, held in New York,

The basic phenomenon used in this detector is the positive ion emission from a hot platinum surface operating in air. Electrons are the basic particles of electricity. Positive ions are atoms which have lost one or more electrons, they explained.

Emission of Positive Ions

The emission of positive ions from a surface can be greatly increased by certain vapors present in the air striking the electrode surface, it has been discovered recently. The chief requirement for these vapors is that they contain one of the halogens, fluorine, chlorine, bromine or iodine. The percentage increase in current is enormously greater than the percentage of halogen in the air.

We have taken this knowledge, both scientists said, and made a sensitive element comprising a red hot center electrode surrounded by cylindrical outer element. Since this device used positive ions instead of electrons, the inner hot electrode must be made positive in respect to the outer and is the anode of the tube. The entire electrode structure is made of platinum, which is one of the materials that can run red hot in the air without oxidizing.

To use this sensitive element as a leak detector, it is mounted in a casing. A small blower moves an air sample through a sampling tube and from there through the sensitive element. A pistol grip is added for convenient holding. The whole assembly looks like a "Buck Rogers" pistol.

The pistol, or detector, is connected by a cable to a control box which takes current from a 115-volt alternating current circuit, and supplies the sensitive element with low voltage for the heater and blower motor and direct current for the cathode. In addition it contains a simple amplifier to increase the signal from the sensitive element, and to give an audible response.

If a vessel suspected of having a leak is put under pressure with a gas containing a halogen there will be a concentration of the leaking gas near any leak that might exist. When the sampling tube is passed along the suspected surface, the presence of the escaping gas is evidenced by a change in tone of the signal from a loudspeaker.

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Science Service Radio

➤ LISTEN in to a discussion on spring floods on "Adventures in Science" over Columbia Broadcasting System at 3:15 p.m. EST, Saturday, March 20. Mr. Lyle Watts, Chief of U. S. Forest Service, will be guest of Watson Davis, director of Science Service. Mr. Watts will tell the story behind the floods and the dreadful toll they take in property and human lives.

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