

VITAL STATISTICS

**Birth Rate Declining
In United States**

THE BIRTH rate in the United States continues downward, latest figures analyzed by statisticians of the Metropolitan Life Insurance Company show. The 1935 birth rate of 16.8 births per thousand population almost reached the all time low of 16.6 recorded in 1933.

The slight rise in 1934 encouraged the hope that the long downward trend and the threat of an ultimately declining population might be averted. The latest figures show, the statisticians point out, that the 1934 rise was only a temporary deviation from the general downward trend of the birth rate.

Each of 33 states and the District of Columbia, representing over half the country's population, showed a falling birth rate. Nine states which showed increases in 1935 were: Illinois, Michigan, Wisconsin, Arizona, Colorado, Montana, California, Florida and Mississippi. These states make up 21 per cent of the population of the country.

Canada's birth rate is declining even more markedly but this nation can better afford the decline as she has a somewhat higher birth rate than the United States. The Canadian birth rate for 1935 was 20.2 per thousand.

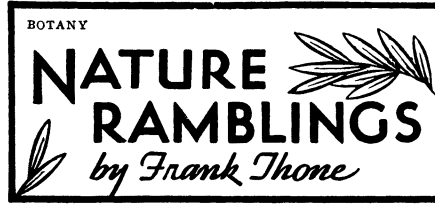
Science News Letter, October 17, 1936

● RADIO

October 20, 5:15 p.m., E.S.T.
SCIENCE AND HOUSE PLANTS—W. R. Beattie, Senior Horticulturist, U. S. Bureau of Plant Industry.

October 27, 4:00 p.m., E.S.T.
POWER FROM THE SUN—Dr. Charles G. Abbot, Secretary of the Smithsonian Institution.

In the Science Service series of radio discussions led by Watson Davis, Director, over the Columbia Broadcasting System.

**The Economy of Leaves**

LEAVES falling from autumnal trees, littering lawn and forest floor, offer just about as good an example in what might be called the engineering of nature as can be found in a lifetime's searching. Yet because it goes on all around us every day, most of us just take it for granted and so disregard it.

But consider the phenomenon for a moment. All summer long, the leaves have been functioning as the prime food-forming organs of the tree. To give a broad spread for the sunlight-catching chlorophyll, they are mostly wide and flat. The nature of the food-making process demands that they be thoroughly moist throughout.

But when winter comes, these qualities that are assets in summer would be heavy liabilities. If left to face the high winds and freezing temperatures, the heavy investment in protoplasm and foodstuffs they represent would be lost—killed by the frost and torn off in tatters by the gales. Only the needle-leaved trees, the conifers, are able to

face winter in full foliage, and even they are sometimes severely penalized by overloads of wet snow or clinging glaze-ice. But the broad-leaved trees, having shed their leaves, can stand close-reefed.

Before the leaves are shed, however, a great deal has to be done. They are not simply snapped off and cast adrift, with all that useful capital of food and living cell-contents still in them. When the days shorten and the nights begin to hint of coming frost, the leaves slow down operations. They export the food-substances back into limbs and trunk faster than they form it. Finally even the protoplasm and its chlorophyll break down and are withdrawn into the parts of the tree that will survive the winter. Like a good factory manager curtailing operations and abandoning part of his plant in the face of a business depression, the tree salvages all that can be saved and used, before abandoning its leaves.

Colors Unmasked

It is during this withdrawal process that the leaves assume their gorgeous fall colorings. These have been in part there all the time, but have been masked by the stronger summer green. In part, however, they represent the breakdown products of the chemical death of the chlorophyll.

Finally, after everything salvageable has been taken out and stored in the limbs and trunk, a double layer of cork cells forms directly across the leaf-stem, sealing each tiny leaf-scar on the twig against the entry of fungi and other disease organisms when the leaves break off and drop away.

And even on the ground, the leaves still have their uses. They mulch small plants against the snow and ice, and in due time are reduced to the earth from whence they came—to be taken up by roots and woven into a new cycle of leaves.

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PUBLIC HEALTH

**Defective Hearing Aided
By New State Law**

A NEW LAW in New York requires that all children under six years with defective hearing must be reported to the State Commissioner of Health. Welfare agencies can then aid the child with education and medical care if the family is not able to provide adequate treatment.

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