

A simple record system is kept in duplicate by the Chapter and the hospital. There is an alphabetical list of donors with necessary information, especially the blood type. Another file lists donors by the four types. When a transfusion is completed, a note is made on the card, and it is filed separately so that the donor will not be called for another three months.

Quite by chance, the first donor called was Chairman Rice himself. His blood renewed the spark of life in a woman suffering from puerperal fever.

Once again at his desk, with reports of life saving success steadily coming from Augusta, Dr. De Kleine writes careful instructions to Chapters elsewhere that are interested, that have heard the news through Red Cross channels. He predicts that one day an army of Red Cross blood volunteers may serve throughout the nation.

If he is right, thousands of persons now marked for death, will live. No longer will blood loss or weakness be tragic in accidents, puerperal fever, childbirth, anemia, peritonitis and some 60 other dangerous conditions. No more will there be a mad scramble to locate donors with the desired type of blood. No more will heavy fees be paid by the poor to save their lives.

Blood will be free as water!

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Science News Letter, January 15, 1938

#### ENTOMOLOGY

### This Unpleasant Widow Is Still an Old Maid

**T**HIS story of a Black Widow spider who proved to be a most determined old maid is told by Prof. John M. Pierson, Jr., of Oregon State College. He has kept a virgin Black Widow in a laboratory cage for over two years.

A year ago he tried to give her a mate, but she was more than cold to the male spider's advances. In fact, she bit her hopeful suitor twice. He recovered. Prof. Pierson tried again, several times, to play the part of matchmaker for his spinsterish spider. But every time the poor twice-bitten male was put into her cage the Black Widow went on the warpath.

So she's an old maid still.

Science News Letter, January 15, 1938

A new kind of paper for photographic prints is said to be really durable, neither turning yellow nor becoming brittle.

#### BIOLOGY

## Hormones Aid in Treating Burns; Throw Light on Cancer

### Many Kinds of Injured Cells, Both Plant and Animal, Yield Substances Not Yet Understood by Chemists

**F**URTHER advance in the knowledge of cancer and its eventual subjugation, a potent aid in the treatment of severe burns, and better understanding of the nature of life and cell growth, are all bound up in the discovery of substances produced by injured cells which cause the rapid multiplication of healthy cells.

These substances, provisionally named intercellular hormones, were demonstrated recently to the American Association for the Advancement of Science, by Dr. John R. Loofbourof of the Institutum Divi Thomae.

For the past year, they have been used at St. Mary's Hospital, Cincinnati, in the treatment of third degree burns. Burns thus treated heal up in a minimum of time and without the wide areas of disfiguring scar tissue that usually follow such injuries.

The steps in the demonstration were simple, direct, and complete. Under one microscope were cells of yeast, with other cells of yeast, uninjured, separated from them by a layer of jelly-like material, agar-agar. Nothing especial was happening in this culture.

Under the next microscope was a similar mounting of yeast cells, with the important exception that the lower cells had been injured by prolonged exposure to strong ultraviolet radiation. Here, something emanated from the injured cells, passed through the separating layer, and stimulated the healthy cells into exceedingly rapid multiplication.

A third microscope showed yeast cells in a similar state of rapid proliferation. These, however, had not been treated directly with injured cells, but with an extract taken from such cells. In a tiny tube nearby were a few yellowish crystals, laboriously purified out of injured-cell extract.

Dr. Loofbourof stated that these crystals have not yet been analyzed. Preliminary steps in analysis indicate that they consist of the higher chemical fractions of proteins. But that does not tell much as yet, even to chemists.

Many kinds of injured cells, both plant and animal, have been shown to be

capable of yielding the new intercellular hormones. They cause rapid growth or proliferation of a wide variety of uninjured cells. Of especial interest, from the practical point of view, is the stimulation of two kinds, fibroblasts and epithelial cells.

Fibroblasts are cells typical of one kind of cancer; and when you say cancer, everybody pricks up his ears. The least step in the advance of understanding why the accursed things grow, the least hope that means may be found of checking that growth, are reasons for very legitimate excitement.

Epithelial cells constitute an important part of the complex we know as the skin, as well as the covering of other, internal body surfaces. The ability of the new-found substances to make these grow and spread rapidly has already been turned to account in the treatment of burns.

Science News Letter, January 15, 1938

#### BOTANY

### Cold Essential To Growth Of Northern Wild Flowers

**W**ILDFLOWERS to star next spring's northern woods are now deep-blanketed under snow. They are not, however, shunning all the cold. Indeed, it is necessary for spring beauties, dogtooth violets, trilliums, bloodroot, and a number of other wildflowers to take a thorough chilling now, or they would not come up at all to blossom in May.

Prof. Herman Kurz of the Florida State College for Women has demonstrated, in experiments with 20 kinds of northern wildflowers, that their rootstocks or other underground parts must be held at a temperature near or below freezing for several weeks if normal growth and flowering is to take place in the spring. His report will be published in the *Proceedings of the Florida Academy of Sciences*.

It all started when Prof. Kurz decided he'd like some northern wildflowers in his garden. The ones he had sent him, left out through the mild winter of



#### AWAKENED BY CHILLING

*The trillium plant in the pot on the left was cold-treated and developed normally; the untreated plant in the pot on the right remained stubbornly dormant.*

northern Florida, didn't do at all well.

Prof. Kurz knew, of course, the traditional belief of gardeners that certain plants had to be nearly frozen every winter to make them grow well. He knew also of earlier experiments showing the beneficial effects of chilling on woody plants and on seeds, especially the researches of the late Dr. F. V. Coville.

He therefore decided to make some really critical tests with non-woody plants. He got 20 different kinds of wildflowers from the north. He set rootstocks or bulbs of each kind in twin pots. One pot of each pair he left outdoors, the other pot he put into near-freezing temperature in a cold storage plant.

In the spring he set the pairs of pots together again. The great majority of his species showed good growth and early flowering in the pots that had been chilled, little or no growth and late or no flowering in the unchilled pots. A few species of plants, that grow in Florida as well as in the North, showed no clean-cut differences between chilling and non-chilling.

One group of four species, May apple, bloodroot, wild phlox, and Turk's-cap lily, showed very peculiar behavior. Plants that came from New England had to be chilled. Plants of the identical species that grow in Florida would grow without being chilled.

Prof. Kurz makes the suggestion that by long custom the northern forms

have come to require freezing and by the same token the southern forms have developed an indifference to or no requirement for freezing. Such forms may be termed physiological or ecological species, he says.

Prof. Kurz points out, in conclusion, that just as there are many southern flowers and other plants that find northern winters too severe, so also there appear to be numerous wildflowers of the north that cannot establish themselves in the south because the winters there are not severe enough to stimulate them to normal growth and reproduction.

*Science News Letter, January 15, 1938*

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