blood bank comes from friends and relatives of patients receiving transfusions and from patients who need to have some blood withdrawn.

The blood is, of course, typed to determine its group. It is examined by two tests to rule out syphilis. Chemical tests are made to determine its nitrogen content, since too high a level of this might be dangerous to the recipient. It is then stored in the refrigerator. No blood is used after 10 days of storage, although in many other institutions blood four and five weeks old is used.

Other charitable institutions have been allowed to establish credit with the blood bank and blood is furnished these institutions on short notice.

X-Ray of Larynx

PATIENTS with cancer of the larynx, or voice-box, who escape a critical period six years after X-ray treatment are still living and free of the disease 15 years later, Dr. Henri Coutard, of the Chicago Tumor Institute, said in reporting to the American College of Surgeons on a new way of adjusting X-ray dosage to kill cancer of the larynx which cannot be removed by surgical operation.

The new method consists of giving daily very small X-ray doses for two or three weeks as a preparatory treatment. This is followed by a very high dose the last day of continuous treatment. More patients survive for five years—the time limit for calling cancer cured—when they are given this preparatory treatment. If, however, the daily doses are not large enough during the last three days a recurrence of the cancer is provoked after about six years.

Sterilization for Cancer

ABOUT one-third of the women who suffer a recurrence of breast cancer in a form that cannot be operated can be helped by sterilization, Dr. Grantley Walder Taylor of Boston reported.

Most striking benefit occurs to those patients in whom the cancer has spread to the bones. The malignant growth in these cases is temporarily checked and even reduced in extent. Sterilization, however, does not prevent recurrence of breast cancer.

The idea of sterilizing women to prevent recurrence of breast cancer comes from the discovery made some years ago that one of the female sex hormones plays a part in the mechanism that causes cancer.

Science News Letter, October 29, 1938

ECOLOGY

NATURE RAMBLINGS by Frank Thone

Starvation by Fire

FOREST fires like the great conflagration that raged near the head of Lake Superior can kill men and animals long after the last red embers have died out and new green growth has begun to hide the wide black scars. How this delayed death can come to burned-over timber country is told by Hoyes Lloyd, superintendent of wildlife protection in the Canadian National Parks. (*Journal of Forestry,* October)

In past years, great forest fires of unknown origin devastated large areas in northern Ontario. When new growth came in, it was not the same kind of trees that had been burned, but a vegetation type representing an earlier stage in ecological succession. This is usual after forest fires.

The new vegetation, in its turn, supported an entirely different array of animal life; it was the home of deer instead of the caribou that had dominated the animal community of the burned forest. Some have said that the caribou migrated, but Mr. Lloyd believes that the animals that survived the fire simply failed to reproduce, and that the caribou just weren't anywhere any more.

On the caribou a population of Indians, estimated at 10,000, once depended for their principal food supply. These Indians were fairly prosperous, and it was profitable for the whites to operate trading posts among them. After the caribou vanished, however, starvation among the Indians became the rule rather than the exception. Their population dropped to a tenth of the original number and their prosperity vanished. The trading posts had to be closed.

The story is the same in other regions, Mr. Lloyd declares. Where "big woods" are burned, "little woods" take their place, and their game population is quite different. It is usually dominated by deer. But if the fire follows logging-off operations the burning is apt to be repeated several times, and the scanty vegetation that comes in is so little able to support animal life that the region becomes comparatively a biological desert.

Science News Letter, October 29, 1938

METALLURGY

Machine Gun Barrel Has Life of 1,000 Seconds

SCIENTIFIC studies are now being made of the erosion which occurs in machine gun barrels during firing, and which quickly leads to inaccuracy of fire.

W. H. Snair, metallurgist of the American Can Company and Prof. W. P. Wood of the University of Michigan described how the barrels of machine guns build up a whitish layer of nitrides upon firing.

The average life of a machine gun barrel, they indicated, is only 4,000 to 5,000 rounds. In a short burst of fire of 10 seconds duration, a typical machine gun will fire 50 bullets.

This means that a hundred bursts of fire of this duration would represent the barrel's practical life. During a very heavy attack a defensive machine gun might easily fire this number of bursts and so lose its effectiveness. War veterans, who saw first-hand fighting in France, know that such situations actually arose.

The new studies, identifying the nature of the whitish deposit, may lead to knowledge showing how its formation may be delayed. Supplementary work on the temperatures of its formation tie in with other studies on more effective cooling of machine gun barrels.

Science News Letter, October 29, 1938