

at 6:21 a. m., people in the eastern part of the country will not see the last phases. In the western part of North America, however, the entire program will be visible.

Even the umbra is illuminated with light bent into it, and reddened, by passage through the earth's atmosphere, so the eclipsed part of the moon will show a characteristic coppery hue.

*Science News Letter, March 8, 1941*

## MEDICINE

## Blood Transfusion Given By Bones Instead of Veins

**B**LOOD transfusions can be given through the bones as well as through the veins, Dr. L. M. Tocantins and Dr. J. F. O'Neill, of Jefferson Medical College and Hospital in Philadelphia, have found.

In 17 trials of this method on 14 patients there was one failure, they report to the Society for Experimental Biology and Medicine.

Substances injected into the bone marrow enter the blood stream apparently unchanged and almost as rapidly as when injected into the veins, they report.

Bones will not supplant veins as a route for introducing blood or other substances into the bodies of patients. In some conditions, however, it is difficult or impossible to inject into the veins. Widespread mutilations, burns, dropsy, shock, and poorly developed or obliterated veins are conditions in which the bone transfusion route might prove vitally useful. In little babies the veins are usually so poorly developed that injections into them are difficult or impossible.

Blood is not the only substance that can be given through the bones as well as through the veins. Sugar solutions for patients whose blood sugar has reached dangerously low levels, blood plasma which is now being used as well as whole blood for transfusions, and salt solutions to maintain the necessary amount of fluid in the bodies of patients too sick to even drink water, may also be injected through the bones.

The blood or other substances are injected into the marrow of the bones where blood cells are formed, and presumably make their way into the blood stream as the blood cells do. The breast bone, collar bone, thigh bone and shin bone were used for the injection in the cases reported by the Philadelphia scientists.

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## WILDLIFE

# Crop Surpluses Trouble Wildlife Administrators

## Excess of Wild Beasts and Birds Concentrated in Spots Where Overstocking Might Ruin Range and Bring Hunger

**C**ROP surpluses in game animals, supposed a few years ago to be on the road to extinction, are one of the most troublesome problems faced by wildlife administrators. To an American public schooled in an almost dogmatic belief that a few decades at most would see the end of all the beasts and birds that swarmed in the woods and on the plains, in the days of Daniel Boone and Buffalo Bill, the idea that there can be too many deer or beaver or elk or bear comes as a paradox. Yet what to do with these wildlife surpluses was one of the principal topics of discussion for the scientists and executives at the Sixth North American Wildlife Conference in Memphis.

Wildlife surpluses are not spread all over the map, as major agricultural crop surpluses may be. They are concentrated at certain critical spots, but where they do occur they often present more executive headaches per acre than do the problems of too much cotton or corn.

These problems vary, too, according to the jurisdiction in which they occur. State and federal governments have different kinds of wildlife trouble, and within the federal jurisdiction the problems differ in national forests, national parks, and other parts of the public domain.

The basic requirements of wildlife, to be considered in efforts to meet and solve the problem of game surplus, are just two, according to Dr. H. L. Shantz, chief of the division of wildlife management, U. S. National Forest Service: first, a place to live—the land; second, plenty of food.

In order to insure the necessary abundance of food, Dr. Shantz pointed out, the numbers of the game herds must be kept in control. This control should be by licensed hunters, and the crop should be taken regularly in such a manner as to afford the best recreational results, yield the best game animals, and leave a breeding stock of sufficient num-

ber and above all of superior quality.

Difficulty in controlling herd size and disposing of surpluses is almost always encountered, Dr. Shantz stated, because there are many persons of the most excellent intentions who have an emotional "set" that will not allow them to admit there can ever be a game surplus. Yet if the herd builds up faster than the plant life that supports it, the range is severely injured, becomes unable to keep ahead of the multitude of browsing mouths, and wholesale starvation and death may follow.

Wildlife surpluses in national parks present a different group of problems from those of national forests, Victor H. Cahalane of the U. S. Fish and Wildlife Service told the meeting. Two factors trouble the national parks administrator: Park boundaries were in the main not adjusted to take in winter as well as summer feeding grounds of their big game herds, so that supplementary feeding and other makeshift measures have been resorted to. These do not solve the problem, but merely continue it, and sometimes aggravate it.

The second severe problem of wildlife administration in national parks centers around the emotional reaction of park visitors to the animals they meet, plus the firmly established policy of permitting no hunting in the National Parks. Surpluses have to be removed in various ways that do not involve the hunting that is a proper outlet in other areas. Some of the surplus bison are butchered and the meat given to Indian tribes. Other bison, together with surplus elk and pronghorn, trouble-making bears, and certain other animals are captured alive and sent to city zoos, to state parks, to understocked forests, and even to private estates and ranches that are able to take care of them.

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*Cork*, a critical material the United States gets from Europe and Africa, could be grown in California, but it takes 15 to 20 years to produce it.