



Deer

➤ FROM earliest colonial days deer have been regarded by Americans with more affection than almost any other form of wildlife. Not only poets but the hunters who sought deer have praised their delicate beauty, quiet dignity and grace of movement.

When the white men first came to this country, the forests east of the Mississippi were full of one of the finest of all the species, the white-tailed or Virginia deer. This family is still the most widely-distributed, though it is outnumbered in certain areas by the black-tailed or mule deer.

The Indians were dependent upon deer. Deer gave the red man venison and pemmican for food, hides for warmth on winter nights, buckskin for clothing and antler-points for tools and ornaments. In their turn, the white men who pushed beyond the settlements became quite as dependent upon the deer as the Indian tribes who fought the Europeans' coming. French trader and English pathfinder were alike in this: Boone and Joliet both traveled in buckskins and moccasins.

The white-tailed deer led a hard life, stalked not only by men but by predatory animals such as wolves and panthers. Yet they held their own against them all.

But the long-barreled guns of the whites dispossessed the Indians and all but wiped out many forms of wildlife. It took a terrible toll of deer. The ax and the plow swept away the native wilderness and destroyed the deer's natural home over vast stretches of territory. Men saw no good in forests when the land could be used for farming. The destruction perhaps was inevitable; pioneering was rough work, and the settlers needed both land and meat.

The low point in the continent's deer population came and went with the turn of the twentieth century. By that time the reckless hunting by Americans, without thought of the consequence, was coming to an end. They began to make amends for past wrongs. Rigid hunting seasons were enforced, with strict limits on numbers of deer which could be taken.

Predatory animals had been all but pushed

into extinction. And the westward course of agriculture helped the deer to return. Abandoned farms, particularly in New England, returned to a semblance of the wilderness they once were. As the brush and trees came back, so did the deer.

Today, sportsmen see what their fathers thought would be forever impossible: a

growing number of deer, so many of them in states such as Pennsylvania that open seasons are occasionally possible—and also complaints by farmers, descendants of the bloody-handed pioneers, that deer are ruining their crops. The meek are inheriting the earth.

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## PLANT PATHOLOGY

## Fight for Lives of Elms

➤ SCIENCE'S battle to save the American elm is largely centered in the work of a famed research station on an elm-shaded residential hill in New Haven, Conn.

This month the Connecticut Agricultural Experiment Station, oldest in America, will celebrate its 75th birthday. Then it will go right back to its search for better ways to stop the deadly advance of Dutch elm disease and phloem necrosis, two diseases which threaten the entire elm species in America with extermination.

Both diseases are spread by insects. The elm-bark beetle leapfrogs from tree to tree with the fungus of Dutch elm disease on its body. A leafhopper carries phloem necrosis. The seriousness of the elm's plight was underscored by the U. S. Department of Agriculture recently in the announcement that Dutch elm disease, introduced to this country in 1930, has now spread from New England as far west as Colorado and as far south as Virginia.

To fight the insect "vectors" carrying the twin blights, high pressure, high dosage DDT sprays are used. When the blast of

chemical mist is enough to completely soak the foliage of a tree, the job of protection is about 40% done, Connecticut plant scientists have learned.

The other string in the bow of elm rescue is chemical treatment of the roots. This chemotherapy is aimed at controlling the fungus of Dutch elm disease. It has proved one of the most promising approaches to date. Applied with an injection nozzle under pressure, chemicals such as 8-quinolinol benzoate have in many cases protected healthy trees from infection. But even such drastic treatment will not usually cure a tree already sick.

Neither chemotherapy nor DDT gives an absolute answer to Dutch elm disease. No tree stricken with phloem necrosis has been known to recover. One hope for the future are strains of disease-resistant elms being studied by the U.S.D.A.

But worried scientists are concentrating on ways to save the present generation of elms, knowing that a new generation of hardier elms may come too late.

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## METALLURGY

## Americium Is Light

➤ A HEAVY metal that is much lighter than expected has come to light with the metallic isolation of the universe's 95th element, americium, announced in Chicago, Ill., to the American Chemical Society by Dr. Edgar F. Westrum of the University of Michigan.

Plutonium, the modern A-bomb element, is number 94 and heaviest substance among the 98 elements known. Americium, just obtained in its silvery metallic form, has only about half its parent's density.

This means that even though americium's atomic weight is greater than that of plutonium, two bricks of americium would be necessary to counterbalance one of equal size made of plutonium. This is because inner forces give the americium atom a more expanded structure.

At least five new chemical elements beyond californium, number 98, will be discovered in the future, Dr. Glenn T. Seaborg, University of California chemist and

plutonium's discoverer, predicted in an interview in Chicago.

He is able to predict the chemical properties of the rest of what is called the actinide series, which ends with the element 103 whose atomic weight will be 267. Elements beyond 95 may be lighter than plutonium and uranium, if the tendency toward lower density shown by americium continues.

Only 5,000 atoms of the most recently discovered element, californium, existed, Dr. Seaborg said, and future new elements manufactured out of transuranium elements will be even rarer.

It is not known whether this process of synthetic building of elements duplicates ancient elements, long extinct, that once existed on earth or whether man has now gone nature one better and made material that has hitherto been impossible.

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