



Disputed Emblem

Washington's birthday is one of the two American national holidays on which the American eagle is supposed to do his proudest screaming. Actually, with the decline in popularity of the "spread-eagle" type of oratory, less is heard about our national emblem than there used to be.

This is, in one respect at least, really too bad. For there are not nearly as many bald eagles in existence now as there were in the early days of the Republic, and over

parts of their range they are being badly harassed despite a law enacted some time ago for their protection. This is especially true in Alaska, where eagles get shot because of their supposed depredations on the salmon runs (which are really relatively trifling) and also to supply plumes to a lively bootleg trade in materials for the Indian war bonnets without which no rodeo or other Wild West pageant can be counted a real success.

Eagles have disappeared from the places where the great early naturalist-artist, Audubon, saw and painted them, simply because the country got settled up and the big trees along the rivers got cut down. For, contrary to a widely held notion, the American or bald eagle did not build its nest for choice on some high cliff in the mountains. Because it feeds mainly on fish it has always preferred tall trees near the waterside. Audubon saw his eagles mostly along the banks of the Ohio and Mississippi rivers, then still largely unsettled. When the forests made way for cities and farms, the best nesting sites vanished, and the eagles vanished with them.

Oddly enough, although Audubon painted some magnificent pictures of the bald

eagle he had a rather low opinion of the bird itself. In this he seconded a still earlier great American, Benjamin Franklin, who denounced the eagle roundly and tried to get the turkey-gobbler adopted as the American national bird instead.

On the whole, however, most Americans are content that the majority sentiment favored the eagle, even though most of the heroic qualities attributed to it are legendary. When in good plumage, the eagle is a magnificent-looking bird, with his dark coat of feathers set off by his pure white head and tail. After all, the main business of an emblem is to look splendid.

We have become a trifle careless, of late, in the depiction of eagles on some of our coins—the George Washington twenty-five cent piece, for example. There the bird is shown with feathered "pants" coming right down to his feet, which is a mark of the golden eagle rather than of the American species. However, on the obverse of the Great Seal of the United States, shown on the dollar bill, the eagle, although shown in the anatomically impossible "displayed" pose, is unmistakably the white-headed, white-tailed American eagle.

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ASTRONOMY

No Atmosphere at Birth

► THE EARTH'S atmosphere as we know it today did not exist at the time our planet was created.

The water, nitrogen, oxygen and carbon dioxide that largely make up our atmosphere were formed by chemical processes that took place after the birth of the planet on which we live.

This is the conclusion reached by Dr. Harrison Brown, associate professor of chemistry at the Institute for Nuclear Studies at the University of Chicago. His study of the permanent gases, helium, neon, argon, krypton and xenon indicate that early in its history the earth lost all the gases it may originally have possessed.

The major constituents of the atmosphere during the process of earth formation were locked up chemically in the earth and subsequently released. Thus the earth's atmosphere is almost entirely of secondary origin, he reasons.

"It is perhaps too early to speculate as to the exact nature of the chemical processes involved," Dr. Brown reports, "but it seems reasonable to suppose that the marked differences in the composition of the atmospheres of these three neighboring planets (Venus, Earth, and Mars) may in the future be explained upon the basis of their differences in size, internal composition and temperatures."

The possibility that most terrestrial argon has been produced by the decay of radioactive potassium produces an interesting speculation concerning the atmospheres of

both Mars and Venus, Dr. Brown states in *THE ATMOSPHERES OF THE EARTH AND PLANETS*, University of Chicago Press book just issued, and edited by Dr. Gerard P. Kuiper, director of Yerkes and McDonald Observatories.

If we assume the surface potassium content of both these planets to be similar to that of the earth and neglect escape processes, Dr. Brown says, then both planets should have argon atmospheres similar to that of the earth. Thus argon might well be the chief constituent of Mars' atmosphere.

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Words in Science— ISOTOPE

► SOME atoms of the same chemical element may have different weights but otherwise be exactly alike. These chemical "identical twins" are called isotopes, pronounced I-so-top-es with the stress on the "I".

Isotopes have the same number of protons and electrons which are the particles in the atom that carry positive and negative electric charges. The difference in weight is caused by a difference in the number of neutrons, those particles that weigh about the same as a proton but which carry no electric charge.

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