



Junco

➤ **JUNCO** sounds like the name of one of the newer international organizations affiliated with the United Nations. It is not, but it would not be inappropriate if it were.

For the slate-colored junco, or snow bird, is an international creature which in its own person is a fitting symbol of the amity that exists on both sides of the American-Canadian border which it flits across as the whims of the season dictate.

Juncos are small birds, somewhat resembling sparrows. In fact sparrows and juncos belong to the same family of birds, the fringillidae. The junco can be distinguished by its dark slate-gray color, marked with white on the abdomen and white outer tail feathers. The bill is whitish or pinkish, contrasting with the dark head.

The junco spends its summers in the north, breeding in a broad belt extending from Alaska to Labrador down to a line

just south of the Canadian border. In winter it moves south, and is found from New England to the Gulf of Mexico.

The name snowbird has been applied to the junco, apparently because it is one of the few birds that are seen when snow is on the ground. It feeds on weed seeds for the most part, and is frequently to be seen in weed patches which stand above the snow level.

Although the junco moves generally southward to escape the biting severity of the northern winter, it is an extremely hardy bird. One ornithologist captured some juncos and instead of letting them migrate south, he kept them in open aviaries throughout a Canadian winter.

He supplied them with food which they would have had difficulty finding on their own. The temperatures dropped as low as 52 degrees below zero and rarely rose above zero at any time. Nonetheless, the birds survived. The birds did seem to fatigue quickly and on one occasion during a blizzard their feet became encased in ice. They suffered no visible ill effects from this.

These were artificial conditions, of course. Left to their own devices the juncos would have lit out for less arduous climes long before the first blizzard struck. And if in their wintering ground, the weather should become too blustery, juncos know enough to take cover and not stand around till they become icebound.

According to Audubon, the great early American authority on birds, juncos burrow into haystacks when they sense an approaching storm. They must seek shelter of some sort, because they do survive, and each year they flit back and forth across the border in vast numbers.

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also found that polonium melts at 590 degrees Fahrenheit and has a density of 9.4 grams per cubic centimeter. That means that polonium weighs 9.4 times as much as the same volume of water.

Gauge of the radiation activity of an element is by means of its so-called half-life. This is the length of time required for half the radioactivity originally present to be shot out from the material. Polonium has a half life of 138.3 days.

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METEOROLOGY

Gaps in Upper Air Weather Information Need Filling

➤ **EXISTING** gaps in the world network of upper air weather reporting are causing worry to the International Civil Aviation Organization in Montreal. Serious attempts are now to be made to fill the gaps.

Modern airliners are now flying on scheduled routes through the upper atmosphere, 10,000 to 30,000 feet above sea level. North America and Western Europe are obtaining the information pilots need, but other parts of the world are not.

These upper air weather conditions are obtained with radiosonde balloons. They are unmanned balloons that carry recording-reporting weather instruments whose readings by radio automatically reach the earth constantly. The major difficulty in extending the network is financial. It costs about \$30,000 a year to maintain a single radiosonde station.

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WILDLIFE

Watch the Birds that Pass: A Duck May Hide a Bass

➤ **HERE'S** a tip for anglers. If you aim your cast a little to starboard of a feeding duck, you may get a lucky strike from a largemouth bass.

It seems the bass are a shrewd lot and they are in the habit of freeloading on the underwater delicacies stirred up by the duck as it cuts through the water looking for its own lunch.

Close observation of this kind of collaboration between the larger fish and certain swimming animals has convinced Dr. Frederick S. Barkalow, Jr., zoology professor at North Carolina State College of Agriculture and Engineering in Raleigh, N. C., that the fish take advantage of the stir caused by the other's swimming activity.

Trout as well as bass attach themselves in this way to surface swimmers, he believes. In a communication to the *JOURNAL OF WILDLIFE MANAGEMENT* (Jan.), he notes that other swimmers on whom the fish poach are beaver and swamp rabbit.

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PHYSICS

Heated Polonium Shrinks

➤ **DISCOVERY** of the first metallic element yet known that shrinks instead of expanding when heated has been made as a by-product of the atomic bomb.

The metal element is the highly radioactive polonium. This metal looks a lot like lead and resembles lead in its physical properties, Dr. Charles R. Maxwell, Dr. William H. Beamer and William E. Easton of the Atomic Energy Commission's Scientific Laboratory in Los Alamos, N. Mex., have found. They were investigating the physical properties of polonium for the first time.

Heretofore this metal, discovered by Madame Curie in 1898, has been available in such minute quantities that no measurements could be made of its physical properties. With the larger though still very small amounts available from the Manhattan Project during the war, these sci-

entists investigated the physical properties of polonium.

For the first time in a pure element they observed simple cubic crystal structure. The cubic structure is a basic crystal structure, yet has never before been observed in an element. There is no theoretical explanation yet to explain the cubic crystal form in polonium.

Polonium is often used in extremely small quantities to paint the figures on luminous watch dials. It is named in honor of Madame Curie's native country, Poland.

Lead is the element into which polonium decomposes when it shoots off alpha rays. Alpha rays, the most easily absorbed of all radioactive radiations, are actually the hearts, or nuclei of helium atoms.

Besides investigating the way that one form of the metal reacts when heated and the cubic crystal structure, the scientists