

AVIATION

World Flight Not Yet Made

A real round the world flight is yet to be made. This is the opinion of Denis F. Cashman, of Wright Field, Dayton, Ohio. He makes this statement with full knowledge of the achievements of the flight around the Northern Hemisphere by Army planes several years ago.

His reason for making this statement is that this flight was not made along what is called a "great circle." In an article in the aeronautical journal *Slipstream* he quotes the famous explorer, Vilhjalmur Stefansson, in support of his views as follows:

"Many records will be made by what really amounts to dodging the issue. For it is essentially incorrect to speak of these successive record-breaking journeys as being around the world. They are, rather, made in a circle on the world. For a strictly round the world journey, you would have to follow what is called a great circle, so that if the earth were sawed in two right along the line of your travel, it would be divided into halves, as, for instance, if the equator were your road the whole way, or if you flew straight south over the south pole, and came back by way of the north pole. An absolute round the world trip, then, has to be a great circle, or else by a longer route, for no one could object to that."

Mr. Cashman further points out that unless this criterion is set, Commander Byrd and his pilot, Floyd Bennett, unquestionably hold the record, for in their north pole flight they "went around the world" in a few minutes as they circled the pole.

Two routes are outlined by Mr. Cashman that are truly round the world. One starts from Ecuador, near Quito, then to Natal, Brazil; across the South Atlantic to Free-town, in western Africa; across Africa with a stop at Malakal to British Somaliland; thence to Bombay; Calcutta; Rangoon; Darwin, Australia; Sydney; Auckland, New Zealand; Tahiti; Easter Island, and back to Quito. This he says would make a total distance of about 26,045 miles, the greatest distance from the equator would be 35 degrees south latitude and the longest single jump, that from Tahiti to Easter Island, about 3,150 miles, would be less than the present world's distance record.

If a flyer did not care for the hot weather that might accompany a flight so near the equator, he might choose to run over an alternative route suggested by Mr. Cashman. This is by

way of the two poles, and follows the 75th west and 105th east meridians of longitude. One jump on this route exceeds the present distance record. It is the one across the South Pole, from Cape Horn to Wilkes Land. This route is along the east coast of North America, the west coast of South America, skirting the west coast of Australia and diagonally across Asia and Europe to North Cape, Norway, from which the north pole jump is made to Wolstenholme, Greenland.

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ZOOLOGY

The Coyote Hunt

"One tam I t'ink I mak dose rug
Or mebbly cap for head
By go an' shoot dat coyote pup
An' keel heem so she's dead.

So, me, I tak dat beeg snow-shoe
For put on bot' de feet;
An borrow gun, shoot eight ten tam,
For go w'ere coyote eat.

Mos' all dat days I walk an' walk
Before I came for stop,
An' jus' can clam one leetle heel
For look, me, down from top.

By gar, t'ree tam it scratch ma eye
For can' believe ma sight—
So much coyote shes roun' dat horse
Some an' got room for bite.

I t'ink, 'W'ich one dose dog I shoot?'
An' look, me, for to see.
Deres one shes beeg lak timbaire
wolfs—
I t'ink I shoot heem, me.

Dat gun shes keek, I an' prepare
For dat, an' fall down heel.
W'en I com back dat dogs all gone
But one, dats w'at I keel.

By gar, sacre, shes mak me mad
Lak heel, for w'at you 'spose?—
Dose dog I peek for mak me rug,
Shes in trap on hees toes.

Queek comes to me dat ranger Jones
An' say, 'Batees, hello,
I t'ank you for to shot ma dog,—
You t'ink shes gon' to snow?'"

—E. J. Sawyer, in *Yellowstone Nature Notes*.

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Clothes of children three years old should be designed so that they can dress themselves, government home economics experts declare.

BACTERIOLOGY

Electric Charges of Germs

The ability of a living diphtheria bacterium to pour poisons into the blood stream of humans bears a relation to the size of the charge of electricity which each bacterial cell carries, according to Drs. I. S. Falk, L. B. Jensen and J. H. Mills of the University of Chicago.

Their electrical measurements can be made in a few minutes and with simple apparatus on cultures thought to be capable of producing toxin. The results are obtained much more rapidly than by time-consuming methods of animal experimentation.

The electrical method is based on the fact that the power of the bacterium to excrete poisons depends on the porosity of its outer wall. This, in turn, affects the electrical charge on the cell as a whole.

The observation is made by placing the suspected organisms in a small chamber between metallic plates charged to a definite electrical potential. The rate at which the bacteria cross the electrical field is then watched through a microscope. The virulence of the germs can be calculated by reference to the rate of "migration" of a strain of diphtheria of known toxin-producing power.

This new method is expected to speed up detection of cases of diphtheria, and to facilitate release from quarantine.

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BIOLOGY

Rabbits and Calves Grow Fast

Mothers who are appalled at the bean-stalk speed with which children seem to grow out of their clothes can be thankful that little boys do not sprout up as fast as rabbits, cows, and guinea pigs.

Charts comparing the growth of children with that of farmyard animals have been worked out by Dr. Samuel Brody, of the Missouri Agricultural Experiment Station. Reporting his results in *Science*, Dr. Brody shows that a child between four and fourteen years of age grows at the rate of only ten per cent. a year, whereas young farm animals grow at the rate of 1,000 per cent. in a year. Reduced to days, this means that in less than four days the young animal gains as much as the child gains in a year.

The juvenile period in man spreads over an enormously long period of time compared with that in domestic animals, Dr. Brody states.

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