

The Commoner.

ISSUED WEEKLY.

Entered at the Postoffice at Lincoln, Nebraska, as second-class matter.

WILLIAM J. BRYAN Editor and Proprietor
RICHARD L. METCALFE Associate Editor
CHARLES W. BRYAN Publisher
Editorial Rooms and Business Office 324-330 South 12th Street

One Year.....\$1.00
Six Months......50
In Clubs of Five or more, per year... .75
Three Months..... .25
Single Copy......05
Sample Copies Free.
Foreign Post. 5c Extra.

SUBSCRIPTIONS can be sent direct to The Commoner. They can also be sent through newspapers which have advertised a clubbing rate, or through local agents, where sub-agents have been appointed. All remittances should be sent by postoffice money order, express order, or by bank draft on New York or Chicago. Do not send individual checks, stamps or money.

DISCONTINUANCES—It is found that a large majority of our subscribers prefer not to have their subscriptions interrupted and their files broken in case they fail to remit before expiration. It is therefore assumed that continuance is desired unless subscribers order discontinuance, either when subscribing or at any time during the year.

PRESENTATION COPIES—Many persons subscribe for friends, intending that the paper shall stop at the end of the year. If instructions are given to that effect they will receive attention at the proper time.

RENEWALS—The date on your wrapper shows the time to which your subscription is paid. Thus January 21, '09, means that payment has been received to and including the last issue of January, 1909. Two weeks are required after money has been received before the date on wrapper can be changed.

CHANGE OF ADDRESS—Subscribers requesting a change of address must give old as well as new address.

ADVERTISING—Rates will be furnished upon application.

Address all communications to

THE COMMONER, Lincoln, Neb.

bald simplicity of the narrative deepened the favorable impression of the genuineness of Cook's feat.

Any journalist could have embroidered with thrilling, sensational passages his plain narrative, but Cook abjured purple patches and ignored chances to tell exciting anecdotes. Nevertheless, the statement, although necessarily unintelligible to many, was followed with eager attention throughout.

The British and American ministers were conspicuous to the right and left of the crown prince's chair. Cabinet ministers, admirals, Arctic explorers and leading members of the Geographical society occupied front seats.

Cook's convincing narrative described the expedition from start to finish. He paid a tribute to Bradley, without whose money, and to Sverdrup, without whose discoveries, his rush to the pole would have been impossible. His description of the pole as an area of polar ice one kilometre in diameter, wherein the center of the Arctic region is located, disappointed some, who seemed to have expected that he ought to have found something that would afford material for a cinematograph exhibition.

When lecturing for popular audiences Cook will do well to indulge in thyrambics and garnish his talk with stories of hairbreadth escapes of which he had plenty. The lecture was a model of modesty and simplicity.

No details of Peary's success have yet arrived whereupon the Danish Geographical society can base its judgment, but from Cook downward, every one hopes Peary has succeeded.

Peary's alleged contention that Dr. Cook did not reach the pole because he went west of the route of previous explorers is regarded as absurd. As all roads led to Rome, so all routes, whether west or east, lead to the pole.

Dr. Cook maintains that for a three-man expedition to the pole through the game country he could not have been better outfitted if a million dollars had been expended. The contrast between the generous enthusiasm of Cook for Peary, and Peary's jealous attempt to discredit Cook excites obvious remarks.

Taxes Already

A London cablegram to the Chicago Record-Herald follows:

"The question of the ownership of the land of the north pole came up in the house of commons when Premier Asquith replied to Sir Gilbert Parker, and led to some playful badinage. The premier wanted to know if the latest in-

(Continued on Page 5)

WASHE W. BRIDGES

EDUCATIONAL SERIES

How the Explorers' Claims Will Be Verified

Father William F. Rigge, professor of astronomy at Creighton University, has written for the Omaha World-Herald the following instructive and timely article:

Dr. Cook's discovery of the north pole is most deservedly called one of the most daring and successful exploits of discovery ever undertaken in all history. It owes its success to the fixed and inflexible determination of the will which was not deterred by any difficulties or dangers whatever, not less than to the clear and practical intellect which quietly and securely studied the method to be employed, and provided for every possible contingency that might occur on the way.

While the glory of the undertaking and of the planting of the stars and stripes on the north pole will be sufficiently presented by the press, it may be of interest for us in this place to examine a little into the scientific and practical side of the achievement.

Could Cook Deceive Us?

The assertion has been made that Dr. Cook has no corroborative evidence of his discovery, and that we have only his unsupported word.

It is not possible for Dr. Cook to wilfully deceive us in his claim of having reached the pole. His observations will show a regular variation in the date, which no man could possibly put down in bad faith without being detected.

Dr. Cook must have kept a double record of his journey, an astronomical one, and the one by dead reckoning, each of which was a check upon the other. By the latter method he noted the direction in which he was traveling and his rate of progress. This would give him his positions differentially with respect to previous positions, and would enable him to find his way in cloudy weather, in the same way exactly as is done at sea under the same conditions.

As the latitudes and longitudes of his previous position were known, those of his subsequent stations became known also.

By the astronomical method he found his positions from the sun by means of his sextant, or small transit, and his chronometer. These observations would give his position absolutely without reference to other stations.

The difference between his stations found in this way ought, of course, to be practically the same as by the method of dead reckoning.

It would be a practical impossibility for Dr. Cook to deceive us in the original data and figures which he will show us in his note books.

First of all, there are his sextant or transit readings. These readings are affected by instrumental errors, by the sun's actual position and motion, and especially by the unusual refraction of the air at such low temperatures as his thermometers recorded.

Secondly, there are the chronometer readings, which are subject to the errors of a variable rate caused by traveling under such severe conditions, and by the usual temperature mentioned, and also to some extent, by the barometer.

Thirdly, his barometer readings must be consistent with those observed at other stations. While these stations were, of course, pretty far away, still it would not be very difficult for an expert weather man to trace his barometer gradient to American or Siberian stations.

Fourthly, Dr. Cook's thermometer readings should also, to some minor extent, tally with those observed elsewhere, and should at least be consistent with themselves, with the weather he recorded, the violence and direction of the winds, the probable effect of weeks of isolation and the like.

Fifthly, his data concerning the variation of the magnetic needle, of its declination and of its inclination, if he observed them, should also be consistent, and not too wildly at variance with known or supposed data.

Sixthly, the low temperatures he experienced, the rough handling his instruments were exposed to, and unavoidable accidents which no human ingenuity could foresee and provide for, must have introduced many accidental errors of observation, which may tax an expert to the

limit of his ability when he investigates their effects upon the recorded data.

That any one mortal man should be able to design such a journey; such a connected series of observations; that he should introduce into the theoretically correct data a host of practical errors of observation; and especially that he should devise such a consistent chain of figures that all the experts of the world should not be able to detect the forgery, is surely an undertaking that immensely surpasses the genius of the greatest mathematician, the greatest abstract and practical scientific man, and of the greatest and shrewdest detective that ever lived.

No living man would surely expose himself to such a searching examination before the entire world, without having the intrinsic conviction of the actual truth of his figures as he saw them, and as he noted them down under his conditions.

Has No Doubt Personally

So far as I am personally concerned I never for an instant doubted the genuineness of Dr. Cook's reported discovery of the north pole. While, of course, there will always be some people whom no evidence can convince, I am certain that the scientific world will unanimously accept Dr. Cook's data and credit him with the glory of being the first known human being to have reached the earth's north pole.

The north pole is the north end of the earth's axis of revolution. The earth is a big ball and is turning much like a colored ball that children throw up into the air. As it turns it brings successively some parts of its surface into the sunlight and takes others away, and thus causes day and night.

In thus turning it must spin about a line or an axis passing through its center. The ends of this axis are called the poles, the north pole and the south pole.

At the same time that it is turning on an axis the earth is moving forward as a whole and its center moves in a well defined orbit about the sun. The time it takes the earth to complete its course about the sun and return to the same point is our definition of the length of a year.

The earth's axis is set at an angle to the plane of its orbit. The consequence of this is that the sun in the course of a year appears to change its position in the sky, running high and large circles in the spring and summer and low and small ones in the fall and winter. All these diurnal circles of the sun, as well as the apparent circles traced by the stars at night, are the consequences of the earth's rotation on its axis. They are only apparent the same as the backward movement of trees and houses and other objects seen from a railway car.

All the circles have the same center, or rather they have two common centers, the north and south poles of the heavens, both of which are visible at the equator, but only one anywhere else on earth. These celestial poles are the points in the sky where the earth's axis produced would cut them.

Height of Pole

The height of the pole is equal to the latitude of the place. At the equator both poles are in the horizon, but as we travel northward, for example, the north star, which is very near the pole, appears to ascend in the sky until if we should ever reach the north pole on the earth, as Dr. Cook did, it would be directly overhead.

This is the way, therefore, that Dr. Cook knew that he was at the north pole. He saw the north star directly overhead. In principle this is very easy. In practice it is one of the most difficult of all problems to solve. The eye is no guide whatever, except in the roughest possible way. One must use an angle-measuring instrument, such as a transit or a sextant. Practically, this instrument must be small, or it could not be transported, and therefore it can not give an observer's position very accurately. At sea sailors are generally satisfied with the nearest mile or half mile.

Then again the pole star is not exactly at the pole, but more than a degree away. It moves