various foreign colonies lining the Cape to Cairo Railroad on either side are being proceeded with, which will act as feeders to the trans-African trunk railroad; and as the country around the various towns such as Mafeking and Buluwayo is rising in importance and increasing in prosperity, short-distance roads are being linked up with the main artery in all directions at such points.

PEARY'S "FARTHEST NORTH."

On July 16, 1905, Commander Peary's polar steamship, specially designed for Arctic exploration, left New York on her quest for the North Pole. She had a crew of twenty men, under Capt. Bartlett. Commander Peary did not go with the ship from New York, but joined her later at Sydney, Cape Breton, where she took on coal and additional supplies. The "Roosevelt" left Sydney on July 26. She was next reported at Domino Run, Labrador, July 29, from which point she crossed to Greenland. The vessel was next heard from at Etah, North Greenland. She passed Cape York August 7, and reached Etah on August 16. The expedition's auxiliary steamer, the "Erik," in the meantime had visited various settlements in Greenland and obtained natives and dogs for the explorer and turned them over to the "Roosevelt" on August 13. At Etah the "Roosevelt" overhauled her machinery, took on board her last supply of coal from the "Erik" and thence proceeded north with twenty-three Eskimos and about two hundred dogs.

What Commander Peary did and his experiences during the last year in the frozen North are rather curtly but tellingly summarized in a communication received by Herbert L. Bridgman, secretary of the Peary Arctic Club. The communication follows:

Hopedale, Labrador, *via* Twillingate, Newfoundland, November 2.

"Roosevelt" wintered north coast Grant Land, somewhat north "Alert" winter quarters. Went north with sledges February *via* Heckla and Columbia. Delayed by open water between 84 and 85 degrees. Beyond 85 six days. Gale disrupted ice, destroyed caches, cut off communication with supporting bodies and drifted due east. Reached 87 degrees 6 minutes north latitude over ice, drifting steadily eastward. Returning ate eight dogs. Drifted eastward; delayed by open water; reached north coast of Greenland in straitened conditions. Killed musk oxen and returned along Greenland coast to ship. Two supporting parties driven on north coast Greenland. One rescued by me in starving condition. After one week recuperation on "Roosevelt," sledged west, completing north coast Grant Land, and reached other land near 100th meridian. Homeward voyage incessant battle with ice, storms, and headwinds. "Roosevelt" magnificent ice fighter and sea boat. No deaths or illness in expedition. PEARY.

The United States, therefore, holds the record of "farthest north," 87 degrees 6 minutes. The Arctic explorer failed to reach the North Pole, as he had confidently hoped to do with his specially-constructed vessel, the "Roosevelt," but he penetrated nearer to the Pole than the Duke of the Abruzzi's expedition, which had held the Arctic record, 86 degrees 34 minutes.

The best previous records are:

Duke of Abruzzi, 1900	86.34
Fritjof Nansen, 1896	86.14
Robert E. Peary, 1902	84.17
A. W. Greely, 1882	83.24
C. S. Nares, 1876	83.20
W. E. Parry, 1827	82.45
C. F. Hall, 1870	82.11
Julius Payer, 1874	82.05
Walter Wellman, 1889	82.00

Peary planned to have his headquarters 350 miles north of Cape Sabine. From that point he intended to make his actual journey to the pole, a distance of five hundred miles, across a desert of ice and snow. This final dash he expected to make in a month or six weeks from the time he left headquarters.

Peary's experiences will at least serve to dispose of Capt. Nares's views of a paleocrystic sea—views first formulated after Nares in 1876 had entered the ocean north of Grant Land, and based on the discovery of "floebergs" and floe ice as much as thirty miles in area and often fifty feet thick. It was argued that this sea, covered with enormously thick ice, was of great extent, and also that it was a shallow sea, and it was believed that most of the floes grounded on the bottom. Because of these formations, thought to be due to the unmelted accumulation of Arctic snows, this region of the Arctic Ocean was christened by Nares the "Paleocrystic Sea." Many of the floes were supposed to be centuries old. If sledges could be drawn over these floes, there would be a very stable foundation to travel over, not likely to float away and leave some explorer in the lurch who should happen to get between the paleocrystic ice and the North Pole.

The ice that Peary met was not grounded on the bottom of the sea, for anchored in this way it could not have drifted off to the southeast on the persuasion of a high wind, giving Peary and his belongings involuntary transportation to Greenland, which was just where he did not care to go.

We heard early last summer that the winter had been unusually mild in all parts of the Arctic from which reports had been received. Peary's report seems to show that these conditions prevailed very far to the north in the American Arctic. This fact may have had a large influence in disintegrating the Arctic ice, so that it was more easily broken up by great windstorms.

Peary, by actual experience, has put an end to this theory of enormously thick ice covering a large part of the Arctic Sea, to the north of America. He found the ordinary floe ice thick, but not ancient.

The ice of the sea to the north of Grant Land is no more stable than it is to the north of Asia and Europe, where the "Fram" drifted for many hundreds of miles to the northwest and where Capt. Cagni, of the Abruzzi expedition, drifted some sixty miles to the west when he was trying to make a straight road back to camp after reaching his highest north.

The failure of the ice in the American Arctic Ocean to afford a more or less stable highway for a sledge expedition to the North Pole will probably destroy the last illusions as to the advantages offered by polar ice anywhere for sledge travel poleward. The American Arctic sea ice had not been fully tested in this respect until Peary went on this last journey.

The ice was broken up into big and little islands and was floating off to the southeast.

Peary achieved the highest north in spite of the fact that in the long run the ice as a sledge route failed him utterly as a route to the pole.

BREAKFAST FOODS.

There is such a bewildering variety of cereal breakfast foods on the market, with such differences in appearance, taste, and claims to nutritive value, that it is hard to make an intelligent choice between them. For that reason the bulletin by Dr. Charles D. Woods and Prof. Harry Snyder recently issued by the Department of Agriculture should prove of interest. True economy here, as with other kinds of food, depends upon the amount of digestible nutrients which can be obtained for a given sum of money.

Of the five cereals most commonly used for breakfast foods, oats contain perhaps the largest quantities of the important nutrients, with a fairly low proportion of crude fiber. Wheat ranks very close to oats in all respects, however, and even when prepared with the bran is freer from crude fiber. Many persons consider that the bran contains so much protein and desirable mineral matters that it should be retained in spite of the crude fiber which it contains. Digestion experiments indicate, however, that the crude fiber makes the whole material so much less digestible that more protein is actually available to the body when the bran is excluded. Moreover, the ordinary mixed diet probably furnishes all the mineral matters which the healthy body needs, so bran is not needed for this purpose. The bran-containing preparations should be avoided by persons of weak digestion, but are often useful in cases of constipation. Such differences are, however, too small to be of importance to normal, healthy persons, and all the ordinary varieties of breakfast cereals are wholesome. Individual taste must determine which are most palatable. Appearance, palatability, and relative cost will always and rightly be important features in the selection of all these cereal breakfast foods. Corn and its preparations are rich in carbohydrates and fat, but are slightly less digestible than the other cereals. Rice is poor in protein, but remarkably free from crude fiber, and consequently furnishes a large proportion of digestible carbohydrates. Barley contains a fair proportion of nutrients and is moderately digestible. All these differences in composition and digestibility are comparatively slight and may be disregarded by healthy persons living on the ordinary mixed diet.

Thoroughness of cooking is a factor which has a bearing upon digestibility. It not only makes the cereals more palatable, but also breaks down the walls of indigestible cellulose which surround the starch granules and other nutrients and produces other changes so that the digestive juices can work on the nutritive ingredients more effectively. Poorly-cooked cereals are less palatable than the same dishes well cooked and may cause indigestion and be really harmful. When the partially cooked preparations are used care should be taken to insure sufficient recooking before serving. The majority of the ready-to-eat brands are apparently thoroughly cooked.

In choosing between the various breakfast foods it must be remembered that a novel appearance and a quasi-scientific name do not necessarily represent any unusual food value. Unless something is added during the process of manufacture, all brands must have just about the same composition as the cereals from which they are made, as manipulation cannot increase the amount of food material, though it may modify its appearance and flavor. As far as the claims to predigestion are concerned, it is safest to assume that in at least the majority of cases the goods do not contain a much larger proportion of soluble—i. e., partially digested—starch than any thoroughly cooked cereal. Fortunately, the matter is of little importance to healthy persons, since they are probably better off for doing their own normal work of digestion. If any one is so ill as to need predigested food, he should depend upon the professional advice of a competent physician in selecting it. The predigested and malted cereals should be judged by the same standards as the others.

It should not be forgotten that breakfast cereals of all sorts are usually free from harmful adulterants and that, especially in the case of package goods, they reach the consumer in a clean, fresh condition.

The investigations made at the agricultural experiment stations have thus far failed to discover any uniform relation between price and nutritive value. The retail prices of breakfast cereals run all the way from 3 cents a pound for some of the plain meals sold in bulk to 15 cents or more for some of the ready-to-eat brands. The proportion of nutrients supplied, pound for pound, does not differ greatly. The partially cooked brands, usually medium priced, are certainly easier to prepare than the raw grains and may be more truly economical in households where time, labor, and fuel are scarce. In general, the ready-to-eat brands are higher in price than the partially cooked goods, though they have practically the same nutritive value, pound for pound, as other classes of cereal breakfast foods. The extent to which they should be used for their special flavor and the variety they give to the diet must be decided according to individual circumstances. It is only fair to add, however, that, whatever the relative food values of malted and unmalted foods, the cost of the former to the manufacturer is greater, and the increased price is to this extent justified.

In the selection of cereal breakfast foods the consumer may be guided by the results of analyses of disinterested chemists, by the digestibility as determined by actual tests, by cost, by taste, by economy, or by the observed effects of the goods upon individuals. It seems fair to conclude that the chemical composition, considered in connection with digestibility and cost, furnishes a satisfactory guide for selection, due attention being paid to palatability and individual preferences.

All things considered, the cereal breakfast foods as a class are nutritious, convenient, and reasonably economical foods and worthy of an important place in the diet when judiciously combined with other foods.

THE CURRENT SUPPLEMENT.

A description of the mastless steamer "Teucer" for freight-carrying traffic opens the current SUPPLEMENT, No. 1611. Teeming with wholesome advice is President Alexander C. Humphreys's address on the engineer as a citizen. Mr. C. F. Jenkin discourses illuminatingly on the advent of single-phase electric traction. A new process for electrically depositing copper has been invented by Mr. Sherard Cowper-Coles, a well-known English metallurgical chemist. A full description of his process is published in the current SUPPLEMENT, accompanied by clear illustrations. Prof. R. S. Hutton gives a very excellent account of recent inventions in the electrical metallurgy of iron and steel. Mr. H. P. Fairchild takes up Shop Photography as his subject. A good description is given of how platinum is mined in Russia. Most valuable to the alcohol producer is Dr. H. W. Wiley's excellent discussion of the sources of industrial alcohol. "Coal Mine Explosions: Their Causes, Prevention, and Methods of Rescue," is the subject of a very clear article. Mr. Richard Schelies writes on some experiments with a beating-wing flying machine of his own invention. The work of the Weather Bureau and its relation to transportation is outlined by Mr. Edward H. Bowie.

THE NUMBER OF WORDS AND LETTERS IN THE BIBLE.

The number of words in the Bible and the number of letters was ascertained in three years' work of a painstaking compiler and given to the world in Horne's "Introduction to the Study of the Scriptures." The figures refer to the King James version:

	Old Testament.	New Testament.	Total.
Books	39	27	66
Chapters	929	260	1,189
Verses	33,214	7,959	41,173
Words	593,498	181,253	774,751
Letters	2,728,100	838,380	3,566,480

The similar record for the Apocrypha is: Books, 14; chapters, 183; verses, 6,031; words, 125,185; letters, 1,063,876. Similar statistics are the following: The middle line is found in II. Chronicles, iv., 16. The middle verse is Psalms, cxviii., 8; the middle chapter is Psalms cxvii., and that is the shortest chapter as well. The shortest verse is John, xi., 35. The longest verse is Esther, viii., 9. In Ezra, vii., 21 occur all the letters of the alphabet save j.