return with his boat loaded with clams, the meat of which was given to the country-people in return for opening the shells, as they were ruined by boiling. The blue 'heart' of the clam, as it was called, was cut out, and made up into the beads used for the ground-work of belts. My informant said, further, that he had often paid out thousands of dollars per week, buying the beads of the white country-people, who manufactured them in their several homes. The hole of the bead was made with an 'arm drill,' and the beads were polished or rounded on grindstones. He says the white beads cannot be made from clam, but from conch shells, which they have always imported from the West Indies. The young clams cannot be used, and the old have so decreased in number that this branch of the industry has been greatly reduced.

I had with me an Iroquois wampum belt, bearing the marks of age, which they immediately pronounced to have been made after their manner. Although they had been familiar with Indians, they had never known of their making the beads. They had always depended upon the trappers for their market, and related incidents connected with their dealings with 'fur companies,' etc. The conch-shell is used also in the manufacture of the pipe beads, rosettes, etc. The holes in the pieces composing the rosettes are drilled, some of them, by the country-women in the vicinity. Specimens of the latter I shall take to New Orleans to represent a minute branch of the industry.

If desired, I will resume this subject at a future time, and will present other proofs which go far towards supporting the statement made by the director of the Bureau of ethnology.

Erminnie A. Smith.

Was it imagination?

The note on artificial auroras, in *Science* for Nov. 14, reminds me of an experience which occurred to myself and party on a mountain summit two or three years ago. There was an unusually brilliant aurora, and it was remarked by several that the streamers seemed to be very near us; and presently, as we stood in the open air with heads uncovered, we began to feel the sensations produced by proximity to a body charged with electricity. The fact that such a sensation had actually been produced by the aurora, was doubted by some scientific men to whom I mentioned it; and it was attributed to *imagination*, which, I fear, is guilty of much, and often accused of more. My object now is chiefly to inquire whether others have had a similar experience. If, during the exhibition of an aurora, such an artificial pillar of light can be formed, I see no reason for doubting the evidence of my own senses; which, by the way, was so definite, and so distinctly perceived, that I could not doubt it if I desired to do so. E. T. Quimby.

THE MANAGERS TO THE READERS.

It is not often that the managers of this journal feel disposed to address their readers with editorial directness. Our principal duty is to record with fidelity and promptness the progress of science, and to make such comments upon its achievements as will enable intelligent people to follow with ease the course of inquiry in departments which are remote from their daily avocations. But the opening of a fifth volume furnishes us an opportunity for a few retrospective and prospective observations.

We have successfully passed what is sometimes called 'the dangerous second year.' A more intimate acquaintance with our staff of contributors, and a more accurate knowledge of the requirements of our readers, have enabled us from time to time to modify our original plans, and to adapt them more closely to the actual scientific condition of the country.

We are constantly exposed to contrary tendencies. The cry often reaches us for 'more popular' articles. The public appetite, which has been whetted for half a century by museums, lectures, magazines, books, and tracts, revealing the 'wonders of science,' 'the curiosities' of nature, the mysteries of the microscope, the magnitudes of the telescope, and other like marvels, calls upon us to give more entertaining and sometimes more sensational papers. When this desire is somewhat moderated, it still looks for novelties, surprising discoveries, extraordinary announcements, and is liable to disappointment if our weekly issue appears with 'nothing striking in it.' On the other hand, the teachers and leaders of science would generally be glad to have this journal become more scientific, and less popular, by printing longer papers than we commonly offer, more abstracts of important memoirs, more elaborate discussions of controverted points. Between these two opposing tendencies, it is no easy task to keep a steady course. A brief recapitulation of our principles may enable our readers to understand our position.

In the first place, *Science* aims to gather from original American sources early and trustworthy information in respect to the scientific work which is in progress in every part of this land and under all the various agencies, governmental, institutional, social, and individual. We do all in our power to elicit from the universities, the learned societies, the laboratories, the surveys, the observatories, and the national scientific departments, accurate

and frequent communications in respect to matters which come under their cognizance.

Second, *Science* aims to gather like reports from the best British and foreign sources in respect to the advancement of knowledge in other countries. In respect to work which is done abroad, where there are so many excellent journals, we cannot be so full as we are in respect to the investigations of our own countrymen; but, as science knows no geographical restrictions, our columns are open to intelligence from every part of the globe.

Third, in presenting what we have to say, our purpose is to be brief, as becomes a journal published weekly; alert in selecting those topics which are of the most immediate interest; accurate, or we should soon lose all standing in the scientific world; and readable, by which we mean that the articles written by specialists in their several domains shall be phrased in terms comprehensible, without a dictionary, to those whose studies and pursuits are in very different fields.

Fourth, in the discussion of important questions, or in the expression of opinions on disputed points, *Science* endeavors to be free from the influence of any school or clique, to speak only in the interests of advancing truth, and to suggest such methods as will promote the economical employment and enlargement of scientific funds, the diffusion of sound ideas among the people at large, and the suppression of all needless animosities.

As for the future, we are hopeful. Our arrangements for receiving and printing such communications as we wish to lay before our readers were never better than now. Our contributors, many of whom we have never personally seen, and who are scattered far and wide over this land, have never been in better accord with the editorial staff. Our subscription list is enlarging, and our pages now come before the principal workers in all departments of science. But we are free to add, that if *Science* is to be all that it should be, all that we desire to make it, there must be a more liberal financial support. Those who have furnished the capital requisite to begin and to sustain for a period the publication of a journal which they believed would be of the greatest utility cannot be expected to continue their support indefinitely, unless they are sustained by the cordial support of individuals and associations who are interested, quite as much as the directors of *Science*, in the perpetuation of the influences which we now represent.

We therefore ask our readers and friends, and especially our contributors and subscribers, to continue during a third year their hearty and outspoken good will.

THE KONGO.

TEN years ago Stanley left Zanzibar for the great lakes of eastern Africa, intending, if possible, to cross the continent, and ascertain if the Luluaba of Livingstone was the Kongo. We then knew little of central or western Africa. The courses of the streams and mountains dotted on the map were derived from imagination or the vague reports of natives. Schweinfurth had explored Sudan and Darfur and the western branches of the Nile; but nearly all of Africa south of Algeria, and west of the Nile and the great lakes, was unknown. Since then, Stanley has followed the course of the Kongo nearly two thousand miles, from the great lakes of western Africa to the ocean.

The English have explored the Niger and its tributary, the Benue, nearly to Lake Tschad; while Capt. Cameron has crossed from Zanzibar, south of the watershed of the Kongo, to the Atlantic at Benguela. The Portuguese, under Messrs. Capello and Ivens, and De Serpa Pinto, starting from Benguela, 12° south latitude, about three hundred miles south of the Kongo, have traversed the continent between the 12th and 15th degrees of south latitude, and explored a vast tract of country and the valley of two great rivers running north, but were prevented by the natives from following them to their junction with the Kongo.

We have now a general knowledge of Africa from 10° north of the equator to the Cape of Good Hope, including central and south Africa; leaving only the territory south of Algeria, the western Sudan beyond Darfur, *terra incognita*. Into this region the French are travelling from Algeria, and the Germans from Egypt; and soon the whole of Africa will be explored, so far as its general features are concerned.

The western coast of Africa has long been