present level, has been preserved, together with the older rocks immediately adjoining.

The immediate contact of the Quebec limestones and underlying sandstones and quartzites was seen but not closely examined. There can, however, be but little doubt that the quartzites of Bonne Bay, on the east shore of the east arm, lie as described by Richardson and mapped by Murray, directly underneath the Quebec limestones, and are conformable. Whether they are the equivalents of the Potsdam or not, can only be determined from Richardson's observations and collections.

Collections were made at Anse au Loup and Amour Cove in the so-called Potsdam sandstones and limestones of the Canadian survey. The observations made at these points indicate a fauna quite distinct from those of any of the limestones or slates of the west coast of Newfoundland. The absence of Cephalopoda and the prevalence of primitive forms of Archeocyathus show the rocks to be probably older than those of the Quebec group at Port au Choix and other localities. The primitive sponges, or Archeocyathi, have here replaced corals completely, and may be described as reef-builders, since numerous hummocks and masses and parts of the strata are formed entirely of their remains. Immediately below these limestones, and conformably with them, lie the red sandstones, several layers of which are perforated with Scolithus burrows.

The geological evidence brought forward by Sir William Logan in the report of Canadian geological survey, 1863, to prove that the straits of Belle Isle have been partly formed by a synclinal valley, appears to us to be very defective. It is more in accord with the evidence to consider that the whole of northern Newfoundland was once much more elevated, and has been sunk by faulting until at the straits the Quebec has been brought down to the same level as the red sandstones of the opposite Labrador shore. The origin of the straits would in that case be considered as due to the changes of level produced by one or more of the same great series of parallel faults already traced by Richardson, Murray and Howley along the west coast. These run parallel with the axis of the straits, and seem to account fully for all the phenomena.

Observations were made upon the raised beaches and terraces which occur along the shores of Newfoundland and Labrador; and here, as well as at Anticosti and the Mingan islands, the marks of the recent elevation of the land are abundant.

ALPHEUS HYATT.

An archeologist in trouble.

I am writing a book on American archeology, and as I cannot reconcile the accounts that are given of some of the most noted earthworks of the Mississippi valley, I naturally turn to you for help. Thus, for instance, I find that, according to one authority, Cahokia mound covers an area of fifteen acres; another puts it at twelve; whilst a third is content with six. All these gentlemen were practical explorers, and as they took the measurements 'carefully,' some of them even with mathematical instruments, there can, of course, be no mistake in the figures. In regard to the Serpent mound in Adams county, Ohio, there is a similar state of affairs. One practical explorer, who is nothing if not thorough, tells us that it is 1,415 feet long; another says it is 1,116; whilst a third, too wise to commit himself to any precise figures, merely says that, if extended, it would not be less than one thousand. To any but a practical explorer, these discrepancies may seem large, and, no doubt, they will deter a mere historical student from using these figures in any statement that aims at accuracy; but in reality they are not of much importance, since it is possible, by a judicious use of the system of averages, to arrive at conclusions that are certainly as near the truth as are most of the original measurements. One thing, however, does bother me, and that is the 'frog' which a recent explorer has discovered in front of the so-called 'egg' that lies between the serpent's jaws. It is 61 feet long, exclusive of the hind-legs, and is said to be in high relief (three feet); though another practical explorer, who visited the same work at about the same time, saw nothing of a frog, either jumping or sitting still, but does speak of a cow-path which may enclose an area of about that size. Now, Mr. Editor, what am I to do? I cannot go out there myself and 'step off' these distances; and if I did, some long-legged fellow would be sure to come along with *his* pair of mathematical instruments, and prove that my measurements were all wrong. Besides, I don't intend to give up that frog—it adds too much to the picture I am having prepared—and yet, I do not see how I am to average it so as to keep my measurements accurate.

R. R.

The spectrum of γ Cassiopeiæ.

Using a high dispersion, and the same precaution with regard to the eye as described upon a former occasion, in addition to the hydrogen lines, there are seen in the spectrumof γ Cassiopeiæ two lines and a dark space between C and D_3, five bright lines and three dark ones between D_3 and H_β, one bright line between H_β and H_γ, and perhaps another between H_γ and H_δ, with a dark space near H_δ. Changing the scale readings of these lines into wave-lengths, we obtain practically, with one exception, the same values as those of the bright lines observed in a solar protuberance in a total eclipse.

These lines apparently do not necessarily all appear at once, and afford an excellent field for study.

O. T. S.

New Haven, Oct. 21.

The care of pamphlets.

Mr. Goode asks, in *Science* of October 16, for the experience of others in regard to the care of pamphlets in scientific libraries. I give below a quotation from the publications of the Washburn observatory, vol. ii., which describes my plan, which was originally described in the *Library journal* for June, 1880.

"The pamphlets are kept in large drawers immediately below the book-shelves, and a drawer is devoted to a subject. As soon as a pamphlet is received, it is catalogued under its author's name, and placed in the drawer devoted to its subject. All the pamphlets on a given subject can therefore be at once consulted in one place; and all the works of a given author are to be found together in the card catalogue. I have used this plan for keeping pamphlets for [thirteen] years, in my own library, in the library of the U. S. naval observatory, and here, and I consider it to be an entirely satisfactory solution of the