

at this institute was the number of lessons given to classes before the institute. The following officers were elected: James McIntosh, President; Mary Nicol, Vice-President; J. E. Lanteigne, Secretary-Treasurer; C. H. Cowperthwaite, A. B., and Theodore Langis, additional members of managing committee.

#### VICTORIA AND MADAWASKA, N. B.

The second meeting of this institute was held at Edmundston, on the 23rd and 24th of October. Thirty-seven teachers were present. Inspector O'Brien in the chair. Papers were read by Mr. Henderson, Mr. Brundage, Miss Truswell and Miss McGill. They were thoroughly practical and showed careful preparation. Some spirited discussions were engaged in, and the institute, which is the first held in the county of Madawaska, was a decided success. On Thursday evening a public meeting was held, and addresses were made by Inspector O'Brien, Rev. Mr. Armstrong, Dr. Cameron, B. R. Plant, Esq., and others.

The following officers were elected: Inspector O'Brien, President; Mr. Henderson, Vice-President; Miss McGill, Secretary-Treasurer, and Miss Costello and Mr. Martin, additional members of committee of management.

#### ST. JOHN COUNTY, N. B.

The St. John County teachers' institute met in the Centennial School, St. John, October 30th and 31st, President, Edward Manning, M. A., in the chair. 160 teachers were present. Papers on "Animal Life", as taught in the first four grades, were read by Miss O'Sullivan, Miss H. D. Gregg, Miss Belle Thompson, and Miss C. M. Hogan. Mr. Manning read an excellent paper on "Physical Geography"; Miss Grace Orr read a paper, "Gleanings from Glen Falls, N. Y."; and Miss Murphy, Mrs. Dieuaide, and Mr. Hay gave an account of the work done at the summer school at Parrsboro, N. S. A resolution, moved by Inspector Carter, favoring compulsory education, was unanimously adopted. Chief Superintendent Crocket was present and took an active part in the proceedings of the institute. The following officers were elected: President, James Barry; Vice-president, Miss Etta Barlow; Secretary-treasurer, W. C. Simpson; additional members of committee of management, Miss Grace Orr, W. H. Parlee.

The Kings County, N. B., teachers' institute was held at Sussex, October 30th and 31st, but we have received no account of its proceedings.

#### Astronomical Notes.

Somebody sends the editor the following question, and the editor has sent it to me:

On Oct. 21, by a St. John almanac, the sun sets at 5 o'clock, and is 15m. 21s. fast. What time should the clock show?

The answer to what I take the question to mean is 5 o'clock. But I don't feel at all sure that I know just exactly what it is that the inquirer wishes to know.

There are a few assumptions associated with my answer. As to the almanac, I have assumed that, since it is a St. John almanac, its "sunsets" are calculated for the latitude of St. John, and are given in St. John mean time. And as to the clock I have assumed that it is expected to show St. John mean time. It is with some reluctance that I make this assumption about any clock in this civilized age, but as late, at least, as last August I found the clocks of St. John and Fredericton still keeping this old-fashioned time, and I have not heard since that any change has been made.

With an almanac and a clock, as assumed — and supposing the almanac man to have done his figuring correctly — it ought to be clear that, at the moment of the happening of what the almanac calls "sunset" on the given day, the clock should show 5 o'clock.

That the sun was 15m. 21s. fast on that day has nothing to do with this matter. That does not mean that the sun sets 15m. 21s. before it should set. It means that on that day the sun passed the meridian of St. John 15m. 21s. before the St. John clock showed 12 noon: or, if it suits you to be very precise, it means that when the St. John clock showed 12 noon, the sun dial at St. John — or those clocks there, which are so wonderfully constructed as to keep true sun time — showed 12h. 15m. 21s. That the sun takes such liberties with the St. John meridian at this time of the year must not be taken as an insult specially directed against that city. He does the same sort of thing — and does more of it — even with those cities that have adopted standard time. How it is that he comes to behave in this way is a something you will not fully understand until you have given some time and thought to the study of what goes by the name of the equation of time.

The question above — or something like it — is one that may at some time or other have occurred to more than one reader of the REVIEW. As I have said, I am not quite sure that I know just what it was that the inquirer wished to know. I don't know who he or she is, and there is not time to make inquiries through the editor. So, I have done what