

relating to astronomy having been made, there has resulted a keen interest in experimental science; so that he is a welcome addition to the membership who takes interest in any branch of what was formerly styled natural philosophy.

During the years 1893 and 1894 the subject of magnetism and electricity engaged a large portion of the time spent at the regular meetings. Spectroscopy, quite apart from its bearing upon astronomy, has also been a subject of interest. A valuable note, by Mr. A. F. Miller, on the spectrum of the light emitted by insects, appeared in the volume of Transactions for 1893.

In the earlier years of the Society's existence the meetings were held at the residences of members, but it was ultimately found that one central place of meeting would be preferable, and for some time past the regular meetings have been held in the rooms of the Young Women's Christian Guild building. Here the library is kept and the secretary has his office. The Society suffered another loss in October, 1894, by the death of the president, Mr. Carpmael, whose health had been impaired for some time previously. A short sketch of Mr. Carpmael's very active life is appended to the Transactions for 1894.

Dr. Larratt W. Smith, Q. C., succeeded Mr. Carpmael in the presidential chair, and the office vacated by the former is now ably filled by Dr. E. A. Meredith, formerly Deputy Minister of the Interior, and the predecessor of Sir Wm. Dawson in the presidential chair of McGill University, Montreal. The great work always before the Astronomical and Physical Society of Toronto is the founding of a popular observatory, in the true sense of the term; not being too sanguine, it is still hoped that steps will soon be taken to this end. It is a matter of regret that there is no astronomical equipment in Canada able to meet all the requirements of modern astronomy.

Two of the members of the Society, Messrs. Z. M. and J. R. Collins, have been very successful in making silver-on-glass specula, and have figured several of eight-inch; having recently fitted up apparatus for the work, it is confidently expected that they will soon be able to undertake the construction of very large reflectors. It is not too much to hope that they will be able to execute the telescope when the public spirit of the Toronto people demands a great observatory, and this may be in the near future, for, in regard to popularizing science, the Toronto Society has been eminently successful. A branch of the association at Meaford, Ont., has recently been formed, and other similar societies are already spoken of.

THOMAS LINDSAY.

CORRESPONDENCE.

THE RIVERS OF EDEN.

TO THE EDITOR OF SCIENCE: Referring to a note on the 'Garden of Eden' in SCIENCE (May 3, 1895), I desire to point out that in a series of articles, under the heading 'Gold, Bedolach and Shoham Stone,' in the 'Expositor' (London, 1887), I showed that the only possible scientific explanation of the geography of Eden in Genesis is that based on the geological explorations of Loftus, and now advocated by Prof. Haupt, namely, that the four rivers are the Kherkhat, Karun, Tigris and Euphrates. Farther I showed that the geography and geology of this ancient author are more accurate than those of modern maps and popular statements until within a very recent time, and that the local standpoint of the original writer was on the Euphrates, and his date not long after that of the historical deluge, whatever views may be held by critics as to the ultimate editing of the book. Delitsch and others have been misled by their want of knowledge of the condition of the district in the earliest human (Palanthropic) age, whereas this was evidently known

to the original writer, though the geographical conditions must have been somewhat changed in his time.

I rejoice that a scholar like Dr. Haupt has advocated a view which will almost for the first time bring this very ancient and very accurate geographical description before the notice of modern biblical scholars in a manner which will be intelligible from their point of view.

I may add that a popular view of the geological argument on the subject will be found in my work, 'Modern Science in Bible Lands,' published in 1888,* where will also be found a sketch-map of the region, illustrating the bearing of the geological and geographical researches of Loftus and others on this much vexed and much misunderstood question.

J. WILLIAM DAWSON.

MONTREAL, May 7, 1895.

COLOR-ASSOCIATIONS WITH NUMERALS, ETC. (THIRD NOTE).

TO THE EDITOR OF SCIENCE: In SCIENCE, old series, Vol. vi., No. 137, p. 242, I printed the results of some experiments upon the association of colors with letters of the alphabet, with numerals, etc., in the case of one of my daughters. In *Nature* for July 9, 1891, I gave a table exhibiting the results of these experiments in the years 1882, 1883, August, 1885, December, 1887, June, 1889, and June, 1891, a period of about nine years. The table can be readily consulted by anyone interested, so that it need not be reprinted here. In February, 1895, I again questioned my daughter on the subject, and I find that the colors given in her replies of June, 1891, are unchanged except in two cases. The figure 8 was visualized by her as white (August, 1885), cream color (December, 1887), white (June, 1889), cream (June, 1891), and is again seen as white (February, 1895). The figure

*Harpers, New York.

10 was noted as brown (1885), brown (1887), black ? (1889), black or brown (1891), and black (1895). With these exceptions there are no material changes. My remarks on the table, given in *Nature*, do not seem to call for any additions or subtractions. The present note, taken with the others cited, seems to be of value, as it records the results of experiments made under exceptionally good conditions and now extending over a period of some thirteen years.

EDWARD S. HOLDEN.

MOUNT HAMILTON, May, 1895.

UNIVERSITY OF KANSAS STATE GEOLOGICAL SURVEY.

IN conformity with the law under which the University of Kansas is now working, the Board of Regents at a recent meeting formally organized the University Geological Survey of Kansas with Chancellor F. H. Snow, ex-officio Director; Professor S. W. Williston, Paleontologist; Professor Erasmus Haworth, Geologist and Mineralogist, and Professor E. H. S. Bailey, Chemist.

In addition to these, other members of the University Faculty will be engaged upon the work of the Survey, as well as the advanced students of the departments of Geology and Paleontology. An effort will also be made to centralize and unify the energies of different geologists in the State who have been doing valuable work along different lines of geological investigations. Already a considerable start has been made and the coöperation of different geologists of the State has been secured.

The policy of the Survey will be conservative, with the expectation that it will be continued and eventually include all other branches of the natural history of the State. The general stratigraphy of the State will first be elaborated in order that it may be used in the further study of various questions of economic and scientific importance, all of which will be taken up as rapidly as