

of nutrition, are transferred to the vegetable kingdom. The greatest drafts are upon the group of Flagellata, which are so often provided with chromatophores. He does not take the Radiolaria, however, with their 'yellow cells,' probably for the reason that they are symbiotic forms. This will probably be the sticking point in such a classification, for even if the dividing principle be admitted, the difficulty will ever be to decide, in these low forms, what is true chlorophyl formation and what symbiosis. The discoveries of Famintzin and Entz show that in many of the lower forms the presence of chlorophyl is due to minute plant cells which live independently of the animals with which they are associated. Before the classification can be complete it must be determined for each form whether the chlorophyl is a symbiotic plant or a natural product.

GARY N. CALKINS.

GEOLOGY.

Kansas River Section of the Permo-Carboniferous and Permian Rocks of Kansas. CHARLES S. PROSSER. Bulletin Geol. Soc. America, Vol. 6, pp. 29-54. 1894.

In the above paper Professor Prosser considers the historic section of the Upper Paleozoic rocks as exposed along the upper course of the Kansas River. As is well known, the early geologists of the State engaged in a most animated controversy over the correlation of the geological formations of this region. Although the investigations of Meek, Hayden, Hawn and Swallow began more than thirty-five years ago and were vigorously conducted for a number of years, still the subject was not settled, and many of the points at issue between the disputants are still open for decision.

The author describes various typical geological sections as exposed in the steep bluffs of the Kansas river and its tributaries, giving the distinctive geological characters and fossils of the various divi-

sions. In connection with this description, there is a complete review of the previous geological work, followed by a chart of tabulated sections, on which the correlation of the early geologists is indicated.

Possibly the most interesting fact in the paper to a geologist familiar with the region, is the statement that the Cottonwood and Manhattan limestones are the same. This limestone, which is the most valuable stone in the State for construction, has been extensively used, and the author states that he has traced it across the country from Cottonwood Falls, on the Cottonwood River, to Manhattan, on the Kansas River. Another interesting fact in reference to the stratigraphical geology is the correlation of the buff, magnesian limestones near Fort Riley with those of Florence, in the Cottonwood Valley.

In conclusion, it is stated that this is only a preliminary paper and that the writer has in hand the preparation of a report in which a full description of the formations of Central Kansas will be given, with the distribution of their fossils and their general correlation.

NOTES AND NEWS.

FORESTRY AND ECONOMIC BOTANY.

THE steady increase of interest in forestry matters, so desirable and essential, has recently become evident in many ways, especially in the Eastern States. New York, Pennsylvania and New Jersey have taken long strides in the right direction in the shape of much needed legislation; and the establishment of forestry journals for the promulgation of knowledge respecting the nature and value of our native trees is a step that will receive commendation from thoughtful people everywhere. The South Jersey Woodmen's Association has shown wisdom in securing an official organ through which they may increase the scope of their influence. The first number of 'The New