

be so long deferred as to qualify their usefulness to us. We were therefore compelled to incur the unexpected expense of engraving these maps on the quadrangle scale and to have a special report prepared to accompany them. In the work on the Elmira quadrangle, it was my desire and plan to cover continuously therefrom in this areal survey the adjoining territory to the north and east, as therein were involved some interesting questions of classification of the rocks and faunas concerning which we had been diligently acquiring data for many years. The outcome of that work in 1902 was disappointing. No data were acquired by the stratigraphers on which even a preliminary areal map could be constructed and I was unable that year to send our more experienced workers into this rather difficult field to check up the determinations of the stratigraphers. In consequence therefore we decided to hereafter execute such work ourselves. It is hardly to be expected that geologists whose experience has been restricted to broad reconnaissance in imperfectly known regions can enter anywhere in this State where the rocks have been continuously studied for nearly 70 years and achieve the results required in New York. It is not our desire to encourage such enterprises. We have therefore made a new start this season beginning with the Elmira quadrangle and extending the work in detail north to the Watkins quadrangle. The undertaking has been essentially in charge of D. D. Luther, whose skill in the careful stratigraphic determination of the older rocks in New York is in my judgment not to be surpassed. This work has occupied essentially all of Mr Luther's time, with that of H. S. Mattimore, during the field season of 1903, with the result that the Elmira and Watkins maps are essentially complete and the Ithaca and Waverly sheets fairly covered.

#### Office work

#### *Publications*

During the past year the following publications have been issued by the department.

**Memoir 5.** Guelph Fauna in the State of New York. Q. 196p. 21 litho. pl. This is an exposition of a virtually new or heretofore un-