No. XXIX.—THE MICROSCOPICAL EXAMINATION OF ROCKS. By
GEORGE R. THOMPSON, Lecturer on Geology in the Technical
College.

[Read 12th January, 1899.

[ABSTRACT.]

IN the course of his remarks the writer pointed out the province of the microscope in the study of rocks, and that through its use a vast field, which was otherwise hid away from our unaided senses, was opened out for investigation. In many instances, of course, the component parts of rocks could be identified by the naked eye—granite, for example, and the coarser grits—but very little could be made of the finer igneous rocks, such as basalt, without the use of the lens. In the case of many of the fine Silurian greywackés, it was almost impossible to distinguish them from igneous rocks without microscopic aid, but when it was invoked the component particles were at once seen to be of a clastic nature.

The author then proceeded to examine the composition of the clastic and crystalline rocks, which were shown to have a definite structure or arrangement of their substances, as might be seen from the regular shape of the crystals where they have had free space to grow. The genesis of crystals as shown in glassy rocks was explained, as also the formation of crystallites, microliths, skeleton crystals, &c.

Mr. Thompson next pointed out how the different minerals could be recognised in microscopic sections by means of their physical and crystalline properties, such as shape, cleavage, colour, refracting index, and others. He ended his paper by giving a full and lucid description of the form of microscope best adapted for petrological work, with the production and use of polarised light, which was specially required in such work for determining the amount of double refraction, of the glassy matter, and the crystals of the different systems.

Sections of many of the rocks referred to in the course of the paper were thrown on the screen by means of the oxyhydrogen lantern, and numerous microscopes were placed on the table to show the effect of polarised light. A number of hand-specimens of the rocks were also exhibited.