

associations of many of these deposits with clearly intrusive rocks that their origin is more closely related to these latter than to any organic agencies as is the case with the recent iron ore deposits.

Of late years the microscope has come to the aid of the field geologist and has been of wonderful assistance in solving the problem pertaining to the structure and origin of many rocks, concerning whose genesis much doubt had long existed. By the increased light thus furnished, many new facts have been adduced which have, on certain lines, almost entirely revolutionized our earlier ideas as to rock structure and by the union of the forces of the field and the laboratory much more satisfactory conclusions have been reached. It may be safely said that by this means, the progress in accurate geological investigations during the last ten years has been far greater than in any previous similar period, and the results obtained have been much more reliable.

The vicinity of Ottawa is excellently adopted for the study of many rock formations. Along the line of the Gatineau railway many beautiful sections of the early crust are exposed in the form of granite, gneiss and crystalline limestone, and their intersections by dyke-like masses of deeper seated rocks are well seen, as syenites, diorites, pyroxenes, feldspars, etc. The Ottawa, Arnprior and Parry Sound and the Canada Atlantic Railways both traverse areas occupied by the lower Palaeozoic rocks and many instructive outcrops of sandstone, shale and limestone are easily available to the geological student. Some of the strata of the Chazy and Trenton are wonderfully rich in organic remains. The former of these two great rock divisions illustrate the conditions which prevailed when the earliest ocean waves dashed against the oldest outlines of our continent, and strewed the debris of sand and pebbles throughout the Ottawa area, while the limestones and shales of the Chazy and Trenton show the prevalence of deeper water conditions and the abundance of the animal life even in those early days of the world's history. The most recent deposits of clays, sands and gravels can also be studied at many points along the river Ottawa as well as over the country adjacent on either side, and their contained organisms, in the shape of bones of seals and fishes, as well as marine shells, are familiar to many of the