

CANADIAN ARCHÆAN OR PRE-CAMBRIAN ROCKS AND THE IRISH
METAMORPHIC ROCKS.

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AS introductory to the subject of this paper, some observations made in Ireland on foliation, or the structure induced by metamorphism, with other phenomena connected therewith, will be submitted.

Students of Petrology and Lithology seem now in general to allow that there are three kinds of metamorphism, namely Regional and Contact, for which I have proposed respectively the terms *Metapepsis* and *Paroptesis*,¹ and Chemical change, to which King of Galway gave the name *Methylosis*, while more recently the Americans called ~~it~~ *Paramorphosis*. At the present time it is not intended to refer to the latter, as these preliminary remarks refer specially to the others.

In one and the same area Paroptesis or Contact metamorphism must necessarily occur at a different time to Metapepsis or Regional metamorphism; and the first may take place either before or after the other; or possibly there may have been two or more successive actions which affected the rock or rocks of one area; as, for instance, first in places there may have been Paroptesis, while subsequently these altered rocks were included in a Metapepsis area, while afterwards in portions, or the whole of the area Paroptesis or Metapepsis may again have taken place; because, as long ago pointed out by Lyell, vulcanicity often occurs over and over again, even with ages between, in one place or one area. In places the present structure of some of the Canadian Archæans would suggest that they were subjected to a succession of periods of alteration, some due to Paroptesis, others to Metapepsis; to this subject we will hereafter return.

¹ Geology of Ireland, p. 175.

Is some what allied change