portions, he yet concludes that this will not account for the observed facts, which in his opinion point to an actual addition of silica.[39] It is very desirable that similar careful chemical and microscopic investigation should be undertaken with a special view to the determination of the difference in chemical constitution between the peripheral and central portions of intrusive masses, and to ascertain whether any such difference can be traced to the influence of the rocks through which these masses have been erupted.

Summary of Facts.—The foregoing examples of the alteration superinduced upon stratified rocks in proximity to granite or other eruptive masses might be largely increased; but they may suffice to establish the following deductions in regard to contact-metamorphism.

1. Groups of ordinary sedimentary strata, likewise eruptive rocks associated with them, where they have been pierced by granite or other plutonic rock, have undergone an internal change, whereby their usual lithological characters have been partially or wholly obliterated. This alteration, however, is not always observable at the contact of intrusive masses, and we do not yet know the precise conditions that have determined its development.

2. The distance to which the change extends varies within wide limits, being in some cases scarcely traceable for more than a few feet, in others continuing for two miles or more. The subterranean surface of the plutonic rock, however, being unknown, may frequently lie nearer the surface of the ground than might be supposed. Detached minor areas of metamorphism may thus be connected with

[39] Stecher, "Contact-Erscheinungen an Schottischen Diabasen," Tschermak's Mittheil. ix. 1887, pp. 145–205.