This greater closeness of texture at the surfaces of contact forms one of the distinguishing marks of an intrusive as contrasted with a contemporaneous sheet (pp. 952, 979). Microscopic examination of these marginal parts from many of the intrusive sheets in central Scotland, shows that even where no distinct glass remains, the rock is crowded with black opaque microlites arranged in a delicate geometric network. Back from the surface of contact, the microlites disappear, and the magnetite or titaniferous iron assumes its ordinary crystalline and often indeterminate or imperfect contours. These bodies, developed along the marginal portions of the intrusive mass, probably belong to conditions of rapid cooling.[20]

Another lithological characteristic of the intrusive, as compared with the interbedded sheets, is the considerable variety of composition and structure which may be detected in different portions of the same mass. A rock which at one place gives under the microscope a crystalline-granular texture, with the mineral elements of diabase, will at a short distance show a coarsely crystalline texture with abundant orthoclase and free quartz—minerals which do not belong to normal diabase—or may be traversed by veins of fine-grained siliceous material. These differences, like those above referred to as noticeable among amorphous bosses, seem to point to successive stages in the consolidation of a molten magma of which the more basic constituents separated first. But sometimes they suggest that great intrusive sheets have here and there involved and melted down portions of rocks, and have thus acquired locally an abnormal composition.[21]

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[20] See Fouqué and Michel-Lévy, "Synthèse des Minéraux."

[21] Trans. Roy. Soc. Edin. xxix. p. 492. Clough, Geol. Mag. 1880, p. 433. See also J. J. H. Teall, Q. J. Geol. Soc. xl. p. 247, xlviii. p. 104. Stecher, paper cited on p. 937.