

and microstructure; sometimes, as in the case of otoliths of fish, Foraminifera, and Mollusc shells, one observes between crossed nicols the black cross of spherulitic aggregation.

**CHLORITE.**—Under this name are included all the minerals of the chlorite group. Lamellæ or scales more or less curved, with irregular outlines, often with parallel structure, sometimes forming fibro-radiated aggregates. Also observed in the form of minute amorphous particles attached to various minerals or coating rock fragments; perfect cleavage parallel to the basal plane; colour green, more or less dark, index of refraction low. The lamellæ parallel to the cleavage are isotropic, extinction parallel to the cleavage, interference colours bluish, pleochroic, fibro-radiated aggregates give the interference cross of spherulites, easily acted upon by acids, microchemical reaction of magnesia, iron, and alumina; becomes opaque, brown, or blackish when heated on a platinum foil. Generally found with debris of schistose and of older crystalline rocks, principally amphibolic or gneissic, also as coating of some specimens of continental rocks and minerals.

**CHROMITE.**—Often in small octahedral crystals, more usually as irregular grains; fine splinters are transparent, reddish brown, or brown. In reflected light black metallic lustre, not magnetic, not attacked by acids, reaction of chrome before blowpipe. Found with debris of crystalline rocks, especially of olivine rocks.

**DELESSITE.**—Fibrous or fibro-radiated aggregates, often zonary structure, green, yellowish green, brownish, double refraction weak, slightly pleochroic. Often observed on fragments of basaltic rocks, of tachylite, or of palagonite. Easily acted upon by acids, when heated becomes black or brownish.

**DOLomite.**—Sometimes found as aggregations of crystals, which have almost always the outlines of the fundamental rhombohedron R, forming small rock fragments, with saccharoidal structure; colourless or brownish, not acted upon by acetic acid or cold dilute hydrochloric acid, microchemical reaction of magnesia. Occurs in the deposits as fragments of dolomitic rocks associated with blocks or gravel of older crystalline and sedimentary rocks transported by icebergs.

**EPIDOTE.**—Generally occurs as fragments of crystals, mostly prismatic, rarely with sharp crystallographic faces, elongated parallel to the axis of symmetry, cleavage cracks following M. Several crystals often found attached parallelly, sometimes more or less radiated aggregates or grains. Yellowish green colour, sometimes almost colourless, uneven surface and strong relief, high interference colours, strong pleochroism: yellow, brown, green; extinction parallel to the cleavage, unattacked by cold acids. Occurs with debris of eruptive or schistose rocks.

**FELSPARS.**—(a) *Monoclinic.*—Generally fragments bounded by the cleavage planes, following P and M, intersecting at right angles, colourless or coloured by interpositions, dull or sometimes opaque, in other cases glassy. Weak double refraction, low interference colours, no pleochroism nor differences in absorption, extinctions of the monoclinic system, twins following the Carlsbad, Baveno, or Manebach laws. *Sanidine*, often in crystals more or less fragmentary, with glassy habit, colourless and transparent, presenting the ordinary crystallographic form, tabular parallel to M or prismatic parallel to the edge P/M, separation-planes parallel to the orthopinakoid, glass inclusions often regularly disposed. Associated with recent volcanic products, often covered entirely or partly with a glassy coating. *Orthoclase*, fragments bounded by cleavage planes, often irregular grains, no glassy habit, dull and milky, no glass inclusions, intergrowth with quartz or with triclinic feldspar, decomposition into kaolin or muscovite, microchemical reaction of potash. Associated in the deposits with debris of crystalline schists and of older eruptive rocks.

(b) *Triclinic.*—*Microcline*, colourless or dull grains or fragments often bounded by the cleavage planes parallel to P and M, polysynthetic lamellæ following the albite and pericline laws. In parallel polarised light characteristic cross-hatched appearance produced by twin lamellæ parallel and perpendicular to P/M. Extinction of 15° 30' on P, alterations as for orthoclase. Associated with debris of older eruptive and schistocrystalline rocks. *Plagioclase*, under this designation are included all the triclinic feldspars with the exception of microcline. As a rule, in the deposits, the specification of plagioclase by optical determination is difficult or uncertain; when a specification of the plagioclases has been made it is stated in the descriptions. They occur in deep-sea deposits in most cases as fragments of crystals often bounded by the cleavage planes; when they are imbedded in glassy or palagonitic matter, as is frequently the case in the true pelagic deposits, they present the ordinary crystallographic forms or are crystallised in very thin tables parallel to M. Polysynthetic twinning following the albite law with frequent repetition, and following the pericline law, sometimes Carlsbad