

posed by Klein, Bréon, Rohrbach, and others, and have been used for the purposes of separation.

The important results of microscopical and micro-chemical search were incorporated in the German text-books of Lasaulx (1875) and O. Lang (1877); while the admirable work of Rosenbusch more especially gave an impulse to the study of petrography in other countries. In France, two illustrious petrographers, Fouqué and Michel-Lévy, adopted the improved methods and advanced scientific research by many valuable contributions. From the year 1873, both devoted themselves to the artificial preparation of silicates, and made a comparison of the artificial products with the natural occurrences in rocks; while Fouqué developed principally the crystallographical aspects of microscopic investigations, Michel-Lévy devoted himself more to the microscopic study of the petrographical relations. In 1879, their conjoint work on the French Eruptive Rocks appeared in the form of an explanatory text to the detailed geological map of France.

In this work MM. Fouqué and Michel-Lévy followed the general arrangement of the *Microscopic Physiography* of Rosenbusch. The French authors distinguished original and secondary minerals in rocks; the former are said to be present sometimes as essential, sometimes as accessory constituents; the secondary are sub-divided according to the time of their generation into two main groups, and these are again divided into sub-groups. The rocks are classified with respect to their origin, their geological age, their mineralogical composition, and their structure. The massive rocks of pre-Tertiary epochs are held distinct from those of Tertiary and recent ages, and certain differences are indicated between them. MM. Fouqué and Michel-Lévy recognise two leading types of structure among the massive crystalline rocks, the granitoid and trachytoid; these terms almost correspond to the use of the terms granular-crystalline, and porphyritic in the works of the German petrographers.

The French authors bring into pre-eminence the mutual development attained by the several elements in the rocks. Their special study of this feature has led them to believe that many massive rocks give evidence of the generation of crystals or crystalline material in successive phases of consolidation. In both the granitoid and trachytoid types, the larger crystals are generated during the first phase of consolidation.