and pressure, and the saturation of the magma with gases and heated vapours. The latter play the chief *rôle* in the acid rocks, producing pegmatitic, micro-pegmatitic, and other structural types, and also determining a definite sequence of eruption. On the other hand, the structure of the basic rocks depends almost exclusively on temperature, *i.e.*, on the greater or less rapidity of the process of cooling.

After this adverse criticism of the classification advanced by Rosenbusch, Michel-Lévy proceeds to discuss the varieties of rock-structure, and shows the frequent agreement between the views of Rosenbusch and his own; he also points out that the differences of nomenclature are more apparent than real, and tries to bring the French and German terminology into harmony by means of a list of synonyms. In most cases, Michel-Lévy claims the priority for his own terms.

Only a few minerals come into question in the composition of eruptive rocks. Fouqué and Michel-Lévy had classed these minerals as original and secondary, sub-dividing the secondary minerals in groups corresponding with the order of formation. According to Rosenbusch, there are just two fundamental laws controlling the order of formation—the one, that the magma is always more acid than the sum of the mineral constituents already solidified in it; and the other, that the separation of the elements which occur in less profusion has generally been concluded before the separation of the more richly distributed elements takes place. Michel-Lévy questions the correctness of these laws, and makes an elaborate inquiry into the order of separation of the mineral constituents. He devises a code of symbols by which the structure, composition, and genesis of the massive rocks may be represented by a short formula; and finally arrives at the conclusion that the classification and the nomenclature of eruptive rocks must be kept free from any hypothesis regarding their origin, and consequently that structure and mineralogical composition form the only basis of a rational classification.

Zirkel assumed a similar standpoint in the second edition of his *Lehrbuch der Petrographie* (1893-94). This large three-volume work is the only complete handbook of petrography. All varieties of eruptive, schistose, and sedimentary rocks are treated according to their macroscopic, microscopic, and chemical constitution, their structure, and their geological