

ducts of the alteration of cordierite, the first four by its absorbing water and losing silica, the next four by absorbing water and losing magnesia, and the last by again losing its water and appropriating potash. (Felsgemengtheile p. 551). These alterations with the exception of the one said to yield mica are well authenticated. It is however worthy of remark that Senft failed to discover cordierite in any granite containing pinitite. It is unnecessary here to specify the numerous minerals regarded as altered scapolite as it is very seldom that they are found in altered rocks.

None of the auxiliary minerals of original rocks yield so readily as the sulphurets to the decomposing influences of the atmosphere, in the process of weathering, but they seem to have entirely escaped the more subterraneous process of alteration. Iron pyrites, markasite, magnetic pyrites, copper pyrites and galena which are frequently found in fine particles impregnating rocks readily decompose in contact with the atmosphere and weather in a very noticeable manner. At greater depths in similar rocks they appear entirely unchanged although in close contact with thoroughly altered minerals. This is owing to the exclusion of atmospheric oxygen in the process of alteration. That element is very potent in the weathering process and readily oxidises these sulphurets, but the water containing carbonic acid which alone penetrates to greater depths is altogether without action on them.

XIII.—CONCLUSION.

We have endeavoured in the foregoing pages to set forth some of the more interesting relations which exist among the various families of original and altered rocks, and have also attempted to make use of these for their better classification. Whether or not the system advanced be regarded as satisfactory, it will perhaps be admitted, at any rate, that Petrology as at present developed is not the very confused department of Geology which some have represented. This could be rendered even more evident by describing singly each rock species, and showing more minutely its various relationships. This would however carry us much beyond our proposed limits, and go far towards making our paper a regular treatise on petrology. It is hoped, however, that the preceding pages will be found to contribute a little towards a better understanding of the subject, in which case our object in writing them will have been accomplished.