Although the Cuban deposits have been studied only within the last ten years, a much more systematic chemical examination has been made of them than of laterites in any other part of the world. Indeed, practically the only published analyses of laterites at various depths in the deposits are those of Cuba. Writers on other deposits have been content, in most cases, to give analyses representing merely the upper parts of the weathered material, thus ignoring the fact that there is no sharp line of division between the more highly oxidized and leached capping and the underlying material. As shown in a following table of analyses, a high percentage of alumina, for example, is characteristic of only a foot or two of the uppermost part of some deposits, while in other cases it extends downward much farther. The most detailed analyses available, those of Cuban deposits, 35 or 40 feet in thickness, that have been made of samples, representing each foot in thickness, show clearly that the change in chemical composition is gradual. The name laterite should, therefore, not be applied merely to the red-coloured surface layers of the deposits. In Cuba the iron-ore deposits at Mayari are mined by steam-shovel methods to an average depth of about 19 feet. The upper layer, 5 or 6 feet in thickness, is of a crimson-brown hue: the middle layer, of greater thickness, is yellowish-brown, and the lower layer, also 5 or 6 feet thick, is of a lighter shade of yellowish-brown. The difference in colour of the layers is due chiefly to the state of oxidation of the iron, but is also influenced by the percentage of alumina.[1]

As a member of the Royal Ontario Nickel Commission, the author visited both Cuba and New Caledonia during the year 1917. The deposits of these two widely separated islands are the most important from the economic point of view of any of those yet exploited. It may be added that the cobalt deposits of New Caledonia, also of lateritic origin, controlled the world's markets for the ore of this metal, prior to 1903 when those of Cobalt, Ontario, were discovered.

In addition to those of iron, nickel and cobalt, other ores of lateritic origin that have been worked include certain manganese, aluminum (bauxite) and gold deposits. Lateritic ores emphasize the importance of the igneous rocks, especially, as a source of metals.

In discussions which have taken place as to the character of laterite, it has been generally agreed that the term should be applied to subaerial decomposition products that contain a low percentage of combined silica, existing as hydrated aluminum silicate, as contrasted with clays of similar origin. Fermor would limit the combined silica to 5 per cent. in pure laterite. It will be seen from following analyses of the Cuban materials, from the surface to a depth of twenty feet or more, table No. 4, that they fall within Fermor's classification of laterites. On the other hand, the New Caledonia nickel ores contain from 35 to 50 per cent. of silica, table No. 2, not in the form of clay but with much hydrated nickel magnesium silicate. The question then arises as to whether or not these New Caledonia materials should be classed as laterites as defined by Fermor and other writers. While they contain iron and aluminum in the form found in what have been called true laterites, they differ from them in the content

[1] A list of publications on the Cuban deposits is given in J. F. Kemp's instructive paper, The Mayari Iron-Ore Deposits of Cuba, A.I.M.E., Vol. LI, 1915.