	Rowley Regis		Western Ghâts	
	I	II	III	IV
SiO_2	49.3	57.0	50.4	.7
TiO_2	.4	1.8	.9	.4
P_2O_5	.2	.7	....	....
Al_2O_3	17.4	18.5	22.2	50.5
Fe_2O_3	2.7	14.6	9.0	23.4
FeO	8.3	....	3.6	....
MgO	4.7	5.2	1.5	....
CaO	8.7	1.5	8.4	....
K O	1.8	2.5	1.8	....
Na_2O	4.0	.3	.9	....
H_2O	2.9	7.2	.9	25.0
Total	100.4	99.3	100.5	100.0

This table shows the striking difference between the weathering of the Rowley Regis Dolerite and that of the Dolerite of Poonah, which so far may represent the whole of the Deccan Trap. Whilst the Rowley Regis Dolerite yields a product (column ii) which differs comparatively little from the original rock, this Dolerite of the Western Ghâts is altogether changed into a mixture of aluminum hydrate and ferric oxide, the most remarkable fact being the nearly perfect removal of the silica in the latter case. . . .

No chemical reaction is known which can account for such a complete removal of silica as has occurred in India, neither is there any explanation why such a reaction should work in India and not in England. The only hypothesis we have is the one based on Mr. T. H. Holland's novel and ingenious suggestion that the silica might be rendered soluble by lowly organisms which can thrive in the uniformly warm climate of the tropics, and not in a region of lower and varying temperature. However, there is as yet no actual proof for this hypothesis, and under the circumstances it may not be inappropriate once again to draw the attention of chemists to this remarkable phenomenon in case there might after all be a strictly chemical solution of the problem.

The weathered product from India may be classed as bauxite. In the Rowley Regis rock there is no tendency towards the formation of bauxite. The weathered material on the surface of the dolerite in the latter locality has a thickness of about twenty feet.

That very few chemical examinations of laterites have been made till recent years is shown by the following quotation from T. H. Holland's paper published in 1903.[1] Laterites had been frequently described as ferruginous clays. Holland says: "Dr. Warth's suggestion naturally occurred to me, and steps were taken to investigate the chemical constitution of laterite: but before any real progress in the work had been made, Dr. Bauer's paper appeared, and, as I think, practically settled the question. What is true of the Seychelle laterite must, so far as one can judge, be true also of the laterites in India which have not been sifted by running water."

Regarding the origin of laterites Holland says:[2]

Now, putting these facts together, I would suggest that we look for the explanation of laterite, not in simple chemical reactions, but in the action of some lowly organism having the power of separating the alumina, which, after the manner of many plants, it does not want, from the silica, which is necessary for its life, but which, being in a soluble form, is removed again by the alkaline solutions. Such a form of life might thrive in the moist climate of the tropics, even to a temperate altitude, but might find life intolerable in a land subject to severe winters, such as we get in the temperate zone and in North India, where

[1] Geol. Mag., 1903, p. 60.
[2] Ibid, p. 63.