

The situation as regards manganese, especially in the United States, is now serious, and is likely to continue so long as the war lasts. By far the most important producers of manganese ores are Southern Russia, British India and Brazil. As is the case of nickel, a very few countries supply the greater part of the world's requirements for manganese.

Aluminum Ores

That in India extensive deposits of bauxine, the chief ore of aluminum, are of lateritic origin is seen from the following:

Some years ago it was discovered that many of the lateritic deposits of India are highly aluminous, such aluminous varieties being identical with the substance known as bauxite. Field-work carried out since 1903 by the officers of the Geological Survey has revealed the existence of extensive deposits of this mineral substance in various parts of India, and chemical investigation in the Geological Survey Laboratory and at the Imperial Institute has shown that certain of the Indian bauxites compare very favourably with the Irish, French, and American bauxites placed on the English market. . . . Eight analyses of specimens and samples of the Balaghat bauxites have given results ranging between the following limits:—

Al ₂ O ₃	51.62 to 58.83
Fe ₂ O ₃	2.70 to 10.58
TiO ₂	6.22 to 13.76
SiO ₂	0.05 to 2.65
Combined water ..	22.76 to 30.72
Moisture	0.40 to 1.14

Corresponding to 71.2 to 80.8 per cent. of Al₂O₃ after calcination. With these may be compared the following figures showing the range of analysis of some Irish, French, and American bauxites of commerce analysed at the Imperial Institute:—

Al ₂ O ₃	42 to 63
Fe ₂ O ₃	2 to 21
TiO ₂	2 to 6
SiO ₂	3 to 13
H ₂ O	12 to 28
Moisture	5 to 16

Two Katni bauxites gave the following analyses:—

	No. 1	No. 2
Al ₂ O ₃	64.48	52.67
Fe ₂ O ₃	3.7	7.04
TiO ₂	11.61	7.51
SiO ₂	0.38	1.26
H ₂ O	19.38	29.83

From these figures it will be seen that the Balaghat and Jabulpore bauxites are of very high grade. There seems also to be little doubt that large quantities of the mineral are available, and the commercial feasibility of making use of these deposits has consequently been under investigation for some years.¹

While not dealing specifically with the character or origin of laterites, W. J. Mead² in his paper on the "Occurrence and Origin of the Bauxite Deposits of Arkansas," furnishes data that make the attempt to define and classify laterites still more difficult. It will be seen from the following notes from Mead's paper that the bauxite is a product of weathering of nepheline syenite. Moreover, the analyses show that the upper layers of the deposits, formed in situ, are to be

¹ Records Geol. Surv. of India, Vol. XLVI, 1915, pp. 228, 229.

² *Ee. Geology*, 1915, pp. 28-54.