

**STUDIES
IN
COAL WASHABILITY**



COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH

STUDIES
IN
COAL WASHABILITY
(PARTS 1, 2 & 3)

BY

J. W. WHITAKER

AND

G. G. SARKAR

FUEL RESEARCH INSTITUTE
JEALGORA, MANBHUM, BIHAR

FOREWORD

THE problem of coal-washing in India has to be faced. With the exhaustion of the better quality low-ash seams of the Jharia field, and with the growth of mechanical mining methods, purification of the coal to be used for coking becomes essential. It is desirable that the ash in coking coal shall be reduced to a definite figure, 15 to 17 per cent (depending on the volatile yield of the coal), and that it shall be uniform both in quality and quantity. This uniformity can be achieved most simply by coal-washing. Washed coal, however, is a valuable asset whether or not the coal is to be used for coking.

Before the installation of a coal washery, the washability of the coal has to be considered in the light of the results of sink and float tests of comparatively large laboratory samples. Broadly speaking, the coals of India are difficult to wash, and a clear understanding of the results of sink and float tests, and of washability curves, becomes of unusual importance. The present booklet has been prepared to help in this direction.

The treatment of the subject-matter of Part 1 is largely on orthodox lines, but special attention has been drawn to the value of the characteristic curve and also to its use as a yield/gravity curve. In Part 2 an "ash units" curve is developed as a supplementary method of showing the sink and float results. This curve has been found serviceable for demonstrating the proportionate distribution of pure coal and of foreign matter (and ash) in the washed coal, in the middlings, and in the rejects. It serves also as a check on the normal washability curves and deductions made therefrom.

In Part 3 there is an analysis of actual results obtained from sink and float tests on a particular seam, broken to different degrees—before carrying out the tests. The results utilized in Part 3 were obtained by various members of the testing staff of the Institute: we are indebted to them, and in particular to Mr. J. N. Majumdar, M.Sc., who has kindly helped in reading the proofs.

It is intended to follow these present studies, which are largely introductory, by further studies on the washability features of coals from the different coalfields of India.

J. W. W.
G. G. S.