

The work closes with a lecture treating "The notion of cause, with applications to the free-will problem." The discussion is very acute, the finest in the book. Hume's classical analysis is resumed and shown to require extension and this is undertaken. The vulgar notion of a cause as compelling its effect must be abandoned as having no warrant in logic and no essential rôle in natural science. A cause may as well accompany or follow its effect as precede it. Far more important than the notion of cause is that of causal law, which has been above stated in one form. It is acutely contended that, as causes do not compel, the acts of will may be caused without being externally coerced, and that omiscience, including knowledge of the entire future, is consistent with every thing in freedom that is worth preserving.

The book as a whole must be judged as an important contribution to the science of philosophy even if the reader must remain convinced that much that is destined to continue to be called philosophy will not, through logical analysis or other means, yield solid, scientific, objective knowledge. Personal idiosyncrasies are themselves facts and they are often more interesting than, and quite as important as, generic results that ignore them. In the future, as in the past, the value of philosophy will consist, not wholly in propositions established by it, but largely in philosophizing. Let the two kinds flourish side by side, but let them not be confounded.

CASSIUS J. KEYSER.

SHORTER NOTICES.

Combinatory Analysis. By Major PERCY A. MACMAHON.
Volume 1. Cambridge University Press, 1915. 300 + xix pp.

THE author states that "the object of this work is, in the main, to present to mathematicians an account of theorems in combinatory analysis which are of a perfectly general character, and to show the connection between them by as far as possible bringing them together as parts of a general doctrine. Little attempt has been hitherto made either to make a general attack upon the territory to be won or to coordinate and arrange the ground that has been already gained. The combinatory analysis as considered in this work occupies the ground between algebra, properly so