THE CANADIAN JOURNAL.

REMARKS ON THE NEGATIVE INDEX OF A FUNCTION.

BY THE REV. E. K. KENDALL,
LATE PROFESSOR OF MATHEMATICS IN TRINITY COLLEGE, TORONTO.

In the consideration of indices, whether used to denote powers of numerical or algebraical expressions, or the successive performance of some operation or function on a quantity, it is usual in examining the meaning of negative or fractional indices to state that *it is convenient* to assign certain interpretations, because of a certain generality which then obtains in the results. In the words of a recent author,* " Experience will prove that the notation here given is often convenient, and we may shew that it is not altogether an *arbitrary* notation but one that naturally presents itself." It appears to me that this, at any rate in the case of negative indices, is an inadequate mode of expressing the ground on which these indices are interpreted, and that the meaning to be assigned to the index is not only one that *naturally presents itself,* not only *not altogether arbitrary,* but *the* meaning which *must* be assigned, exclusive of any other meaning, and no more arbitrary than the use of the notation for positive integral indices. With respect to fractional indices even, I am of opinion that the above would be an insufficient account of the reasons by which we are led to accept an interpretation of the index since it would leave an impression that we are guided rather

---

* See Todhunter's " Plane Trigonometry."