general the sectors of divergence). If η_1 is negative then (15) represents a curve of t branches lying within the aforementioned sectors within which the first member of (15) denotes a negative quantity; and each branch approaches asymptotically the rays of the sector including it. In this case the region of convergence consists in general of t separated regions each bounded by a curve somewhat resembling one branch of an hyperbola. In case η_1 is positive the branches of the curve denoted by (15) lie in the aforementioned sectors within which the first member of (15) is positive; and again each branch approaches asymptotically the rays of the sector including it. In this case the region of convergence is in general the portion of the plane excluded by the t branches, which again resemble branches of hyperbolas.

UNIVERSITY OF ILLINOIS,
April 14, 1917.

SHORTER NOTICE.

Interpolated Six-place Tables. Edited by HORACE WILMER MARSH. New York, John Wiley and Sons, 1916. xii + 155 pp.

THIS volume contains logarithms of numbers and the natural and logarithmic trigonometric functions, also tables of length, area, volume, weight, metric conversion, decimal equivalents, and specific gravity. In view of the many logarithmic tables on the market, a new compilation is expected to present valuable improvements. Only one such is evident in this book, viz., the use of a heavy ruling to denote "the change in leading figures when occurring in the line, thereby making the use of the wrong leading figures possible only by 'jumping the fence.'" Unfortunately on page 39, an omitted "fence" gives wrong values for log tan 3° 0′, 20″, 30″, 40″, and 50″.

In the logarithms of numbers no horizontal spacings or rulings are used and the number of rows on a page varies from 13 to 31, so that the position of the desired logarithm on the page is never known "a priori." In the logarithmic trigonometric tables the lines are separated into groups of ten for 6 pages only, though this grouping is used throughout the

table of natural functions. In no case is the last line of a page reproduced on the next page, so that in numerous cases one portion of a mantissa is at the bottom of the page and the remainder on the next page, in one instance requiring the leaf to be turned.

The natural function tables read down the page, while the log function tables read across, making the differences for the latter difficult of computation mentally. In the preface on page v, exponent is used for power, and 10^5 is given as 10000, also on page vii log 83.19 should be 1.920071. On page ix is found the objectionable form of negative characteristic with positive mantissa, also the symbol of identity to express "whose anti-log equals." On page x the reader learns that a negative number has no logarithm and that there are two kinds of logarithms, tabular and non-tabular; finally in these tables log cos 72° 25′ must be taken as log cos 72° 24′ 60″.

These tables are characterized by the almost complete absence of mechanical aids to the eye and are entirely unsuited to the use of the student or professional computer.

The following corrections should be noticed: broken type in log tan 37° 48′ 50″; log 8.140 should be .910624, a correction in the second digit which affects 170 logarithms following; log 8.760 should be .942504, similarly affecting 110 logarithms following. Isolated corrections are:

log sin	24° 52′ 20″	9.623865	log tan 65° 3′ 20″ 10.332428
" "	31° 22′ 10″	9.716466	" " 68° 34′ 20″ 10.406210
" "	38° 38′ 50″	9.795549	nat sin 46° 1′ .719542
" "	48° 54′ 50″	9.877212	" " 59° 3′ .857616
" "	50° 2′ 10″	9.884483	" tan 57° 36′ 1.57575
" "	61° 3′ 0″	9.942029	" " 80° 6′ 5.72974.
" "	81° 14′ 30″	9.994906	

F. H. SAFFORD.

NOTES.

THE April number (volume 18, number 2) of the *Transactions of the American Mathematical Society* contains the following papers: "Differential equations and implicit functions in infinitely many variables," by W. L. HART; "On the equivalence of écart and voisinage," by E. W. CHITTENDEN;