

RESULTS  
OF  
OBSERVATIONS OF THE FIXED STARS

MADE WITH THE  
MERIDIAN CIRCLE

AT THE  
GOVERNMENT OBSERVATORY, MADRAS,

IN THE YEARS  
1868, 1869 AND 1870,

UNDER THE DIRECTION OF

NORMAN ROBERT POGSON,  
C.I.E., F.R.A.S., & F.M.U.

GOVERNMENT ASTRONOMER AT MADRAS.

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## INTRODUCTION.

The observations of fixed stars, made with the Meridian Circle during the three years 1868, 1869 and 1870, are given in this volume. The work was carried on steadily throughout, by the same two observers as before, *viz.*, C. Ragoonatha Chary and T. Moottoosawmy Pillay; the methods of observation and reduction being precisely the same as described in the volume for 1862, 1863 and 1864. The flexure correction applied in those years was however exactly double of what has been adopted since 1865, *viz.* :—

$$0''.85 \times \sin \text{Zenith Distance.}$$

The tables of adopted instrumental corrections show the fluctuations to which the transit circle and clock were subject during the three years. Heavy rain almost always caused sudden changes in the index and inclination corrections. Determinations of the meridian correction were made whenever possible, and for intermediate nights, when polar stars were not observable, the adopted values were simply interpolated between the preceding and following results of observation.

Bisections of the nearest division were always made for circle readings, except when the minutes fell between 2 and 3 or 7 and 8, when both divisions were bisected and a run observation obtained; the mean of all such determinations during each observer's watch being adopted for his "Run in 5'."

All corrections used were found during the hours of observation, none being made during the day time or when the instrument was under different conditions of exposure and temperature. Neither were those found by one observer used by the other, as natives have greater and more constant personalities of observation than generally prevail among Europeans.

The references for stars, in the Separate Results and Mean Position, are as explained on page XII of the Introduction to the first volume.

It would have been better to have published all the Separate Results for the twenty-six years, 1862 to 1887, in a more condensed form, in one or two volumes, instead of extending them over eight; but in India little is left to one's own discretion and the publication of the results of three years at a time was an Order which had to be obeyed. Weeding out the errors of reduction made by the old assistants, especially in the nearly seven thousand star constants, was an unforeseen personal task for the