wave-lengths determined, in the cases where there are no entries in the two succeeding columns, by the process outlined above, and in the other cases where the lines have been identified, by taking the corresponding wave-lengths from Rowland's table.

These identifications have been made as consistently as possible, using only those elements which it was considered probable from the similarity of *o Ceti* to third type stars, would be present in the star. The third column contains the displacement of the line in tenth-metres from its normal position due to motion, and is obtained by subtraction of the second column from the first. The fourth column contains the velocity corresponding to this displacement, obtained by multiplying by 299,860 λ.

Let us consider in the first place the radial velocity of *o Ceti* as determined from the displacements of the absorption and emission lines. The mean velocity from the absorption lines in No. 486 is + 90·43 kms. per second, which, on applying the correction for the orbital and diurnal movement of the earth, and for the curvature of the spectral lines, reduces to 65·61 kms. per sec., recession, compared with the sun. For plate 515 the velocity is + 65·3 kms., in good agreement with the first. Professor Campbell*, from his determinations in 1897 and 1898, obtained a mean velocity of + 62·3 kms., and Stebbins in 1902, of 66 kms. This shows that the motion of the star is constant, as the variation between the Lick and Ottawa determinations can readily be accounted for by the uncertainty in the identification of the lines, and in the intensity to be assigned to them in the blends, in a star so different from the sun in its absorption. Campbell's value of the velocity is probably more nearly the true one on account of the greater dispersion and resolving power of the Mills spectrograph, which admits of the resolution of lines much closer together than is possible with the Ottawa instrument.

The errors in identification and blending are plainly shown by the very high mean error $\epsilon = \pm 5{\cdot}2$ of the determination

* *Astrophysical Journal*, IX., p. 31.