$$\pi_m = 4\cdot738 \times \frac{\tau_m}{V_m}$$

should give too small rather than too large a value for the mean parallax.

In treating the corrected v components by the same formula

$$\pi_m = 4\cdot738 \ \frac{v^1{}_m}{V_m}$$

the effect will depend on the distribution of the stars. If nearly all the stars were found near the vertices, $V^1{}_m$ would be increased while $v^1{}_m$ would remain about the same. If on the other hand most of the stars were midway between the vertices, then $v^1{}_m$ would be increased and V_m remain constant. A symmetrical distribution should leave the results of the application of this formula entitled to as much weight as the value from the τ components.

As regards the adjusted value which removes the parallactic effect, it depends directly upon the velocity of the sun adopted. The higher the velocity of the sun chosen, the smaller will be the value of the parallax. If we had used a velocity of the sun about twenty-five kilometres per second, the observed and computed values of the mean parallax from this source would have been in agreement.

The parallactic method of determining the mean distance of a group of stars is applicable without a knowledge of the radial velocities and so could have been applied to a much larger number of stars. This solution has been practically carried out by Lewis Boss.* From 559 stars with mean proper motion over 31″·9 per century he determined the parallactic motion and assuming the parallaxes to be correct, reversed the problem to determine the speed of the sun. It is very interesting that the velocity obtained was 24·5 kilometres; a value which is undoubtedly too high, but which is almost in exact agreement with the speed that would have to be assumed for the present list of stars to make the observed and computed mean parallaxes agree.

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*Astronomical Journal, vol. 26, 118.