Hence, collecting and arranging, it will be found that the sums of the corrections in R.A. and in North Polar Distance will be respectively,

$$\begin{aligned}
\text{In R.A.} \quad &= 120{\cdot}0 + \text{E}\,e + \text{F}f + \text{G}\,g + \text{H}\,h \\
&\quad - (1{\cdot}2\,\text{E} + 1{\cdot}2\,\text{F} + 25\,\text{G} + 1{\cdot}2\,\text{H}) \\
&\quad - (25\,e + 25f + 1{\cdot}2\,g + 25\,h) \\
\text{In N.P.D.} &= 120{\cdot}0 + \text{E}\,e' + \text{F}f' + \text{G}\,g' + \text{H}\,h' \\
&\quad - (1{\cdot}2\,\text{E} + 1{\cdot}2\,\text{F} + 25\,\text{G} + 1{\cdot}2\,\text{H}) \\
&\quad - (25\,e' + 25f' + 1{\cdot}2\,g' + 25\,h')
\end{aligned}$$

Where the numbers are seconds of time in the first group and seconds of space in the latter.

It will be seen that the second line in each group is identical, and depends solely on E, F, &c.; that is, on A, B, C, and D. This, therefore, could be tabulated in the *Ephemeris* for the day, under one symbol K. The third lines depend on a, b, &c, and a', b', &c.; and therefore admit of tabulation in the *Catalogue* as k and k' respectively for each star. The *corrections* could now be in this form:

$$\text{In R.A.} \quad = \overset{\text{s}}{120{\cdot}0} + \text{E}\,e + \text{F}f + \text{G}\,g + \text{H}\,h - (\text{K} + k)$$

$$\text{In N.P.D.} = \overset{\prime\prime}{120{\cdot}0} + \text{E}\,e' + \text{F}f' + \text{G}\,g' + \text{H}\,h' - (\text{K} + k')$$

The greatest possible value of K is about 182, and the greatest values of k and k' are about 170. Let

$$\text{L} = 190 - \text{K},\ l = 170 - k,\ l' = 170 - k'$$

then substituting these values in the last equations, the corrections are,

$$\text{In R.A.} \quad = \text{E}\,e + \text{F}f + \text{G}\,g + \text{H}\,h + \text{L} + l - 240{\cdot}00$$

$$\text{In N.P.D.} = \text{E}\,e' + \text{F}f' + \text{G}\,g' + \text{H}\,h' + \text{L} + l' - \overset{\prime\prime}{240{\cdot}0}$$

in which every symbol is necessarily positive.

The Astronomer Royal finds that logarithms with five decimal places would be wanted for the corrections in R.A., and that four would be sufficient in N.P.D.

An additional column would thus be required for the Ephemeris and two columns for the Star Catalogue, but there would be no sign employed either in the tabulation or computation. The trouble of deducing E, F, &c., e, f, &c., L, l, &c., is trifling, and might be made still easier by subsidiary tables. The change proposed is not recommended for uncatalogued stars observed only once. Stars which are nearer the pole than $3^{\circ}\ 45'$ require special treatment.

Orbits of Double Stars. Computed by Capt. W. S. Jacob, B.E.

These orbits have been computed from all the observations accessible to the author, including his own for the current year. The orbit of *Castor* has only been roughly deduced, as the observations are not yet sufficient to define the elements with precision. It was undertaken by Captain Jacob for the purpose of ascertaining what alteration was required in Mr. Hind's elements to make them represent his own observations, and those of Captain Smyth, in 1838 and 43.

In computing the orbits of the other stars, the method of least squares has been employed to correct the elements which were obtained in Sir J. Herschel's manner.

The stars which Capt. Jacob has computed are *Castor*, ξ *Ursæ*, γ *Virginis*, and 70 *Ophiuchi*.

Notice respecting a pair of Chinese Planispheres brought from Chusan, and presented to the Society, by Capt Sir E. Home, Bart. R.N. By Mr. Woolgar.

The hemispheres are of 25 inches internal diameter, projected stereographically on the plane of the ecliptic. The magnitudes of the stars are represented *conventionally* by a method which makes a star of the 1st magnitude less conspicuous than one of the 3d or 4th. There are six magnitudes. The principal stars are connected by right lines. The groups thus formed sometimes do, and sometimes do not, agree with those found in some European maps.

The map is executed coarsely by block printing. The positions and magnitudes are incorrect. There is no appearance of European origin. The selection of stars of the 5th and 6th magnitude could not well have been copied, and some stars are inserted which are not to be found in any common catalogue or map. The epoch seems to be about A.D. 1735.

A Historical Survey of Comets. By Dr. Michelsen.

The author commences with a general review of the early history of Cometary Astronomy, and notices the uncertainty attaching to ancient European accounts of comets: the information given us by the Chinese annalists, Ma-tuon-lin, as sketched by Mailla, Gaubil, and De Guignes, presenting a more definite aspect. He remarks that the comet which appeared in the time of Anaxagoras may be considered the first established historically, though as yet unconfirmed by any astronomical calculation.

The author then proceeds to give a detailed description of the most celebrated comets, commencing with Halley's, which he endeavours to trace back as far as the year 426 B.C. The various confirmed appearances of the comet since 1456 are then described, and also circumstances relating to comets in previous centuries, which might possibly be identical with Halley's.

The comet of Encke is traced from its discovery by Mechain, in 1786, to the present time. The detection of a resisting medium in space from the motion of this comet, and the determination (from its perturbations) of the mass of *Mercury*, are also noticed.

Biela's Comet is described at its different appearances since the year 1772. The author notices the supposed identity of the comets