

P. 59, line 14, for 'distortional' substitute 'condensational.'

P. 296, in the two expressions for  $\psi$ , given in equation (17), insert ' $\tan i$ ' before ' $\frac{(\mu^2 - 1)^2}{\mu^2 + 1}$ '; also in the expression for ' $\tan e$ ' and ' $\tan e_1$ ', of equation (20), insert ' $\tan i$ ' before ' $\frac{(\mu^2 - 1)^2}{\mu^2 + 1}$ '. The formula from which these expressions are deduced is correctly given at the foot of p. 295.

P. 296, in line 13 from top of the page, and in the left-hand members of equations (20) and (21), for ' $w$ ' and ' $w_1$ ,' read ' $\omega$ ' and ' $\omega_1$ ,' respectively.

WILLIAM THOMSON.

The university, Glasgow, March 26.

### The cold weather of February and March.

During the past two months the cold weather has been of unusually long duration; so much so, that in many places in and about the city the water and gas pipes, which are placed about four feet under the ground, have been frozen. This being the case, I have thought that it would be interesting to see, from the records of Draper's continuous self-recording thermometer of this observatory, what was the difference in the duration of the cold in this year, as compared with last. The following table shows the comparison of temperature every ten degrees, from the lowest to the highest, for the years 1884 and 1885, during the months of February and March, and also the number of times or hours the temperature was below or above 30°, which has been taken as a temperature of neither freezing nor thawing.

| Degrees.            | 1884.            |        | 1885.            |        |
|---------------------|------------------|--------|------------------|--------|
|                     | Hours' duration. |        | Hours' duration. |        |
|                     | February.        | March. | February.        | March. |
| -10 to 0 . . . . .  | -                | -      | 2                | -      |
| 0 to 10 . . . . .   | 14               | 11     | 44               | 5      |
| 10 to 20 . . . . .  | 30               | 71     | 191              | 139    |
| 20 to 30 . . . . .  | 97               | 105    | 250              | 157    |
| Hours of cold . . . | 141              | 187    | 487              | 301    |
| 30 to 40 . . . . .  | 375              | 223    | 155              | 362    |
| 40 to 50 . . . . .  | 152              | 225    | 30               | 62     |
| 50 to 60 . . . . .  | 28               | 102    | -                | 19     |
| 60 to 70 . . . . .  | -                | 7      | -                | -      |
| Hours of heat . . . | 555              | 557    | 185              | 443    |

Hours of cold, in 1885, for February . . . . . 487  
 Hours of cold, in 1885, for March . . . . . 301 788  
 Hours of cold, in 1884, for February . . . . . 141  
 Hours of cold, in 1884, for March . . . . . 187 328  
 Difference of hours of cold between the two years . . . . 460

There were therefore, during these two months, 460 hours more of cold in 1885 than in 1884.

DANIEL DRAPER, PH.D.,  
*Director.*

### CIVIL AND ASTRONOMICAL TIME.

THERE seems to be a good deal of doubt whether the recommendations of the Prime-meridian conference are going to be very gener-

ally accepted. France, and the nations under French influence, certainly will not adopt the new anti-Greenwich meridian for many years, if ever. The matter is really one of comparatively little importance; that is to say, it will make no very great practical difference to any one if different nations continue to use different meridians: still there can be no question that there would be a real and considerable convenience in the establishment of a single meridian, and consequently of a time-system, which, like our present railroad-time in the United States, would be identical as to minutes and seconds all over the earth. It is probable that the gentle pressure of this convenience will, after a while, bring about the desirable concurrence, especially as the increasing extent and rapidity of travel and communication will all the time bring out more forcibly the inconveniences of the present state of affairs, and tend to weaken mere local feeling and prejudice, which, after all, is the main obstacle at present to the universal adoption of the meridian proposed.

The recommendation that astronomers should come into agreement with other folks, and begin their day at midnight instead of the following noon, as at present, seems especially likely to fail. The Greenwich observatory, indeed, adopted the new plan on Jan. 1; but, so far as we know, no other important astronomical establishment has yet done so. Commodore Franklin, of the U. S. naval observatory, proposed to follow the example of Greenwich, and issued an order to that effect; but it excited so much opposition from certain eminent and influential astronomers, that the order was suspended before the time came for it to go into operation.

The objections of Professor Newcomb, who has formulated more fully and forcibly than any one else the reasons why the change should not be made, relate not so much to the fact that astronomers would find it inconvenient to change the date of their observations at midnight, as to the confusion that would be likely to result in the combination and comparison of observations taken before the introduc-