On a few of the points touched upon in the valuable treatise before us, rectifications suggest themselves as desirable. Thus, at p. 242, the relations of aspect and brightness in the Pons-Brooks Comet are reversed. Normally faint and diffuse, it assumed stellar sharpness during its outbursts of light on September 22, 1883, and January 1, 1884 *. Moreover, Dr. Huggins's recognition of the true quality of cometary light as exemplified in Winnecke's Comet (1868) ought to have been, but is not, mentioned at p. 227; while the same observer is credited (p. 214) with holding the view, explicitly disavowed by him in 1867 †, that the red colour of Mars is of atmospheric origin. Dr. Scheiner makes no mention of the blue line at about 469$^{\mu\mu}$, recorded by Drs. Huggins and Copeland in three planetary nebulæ (Gen. Cat. 4964, and two in Cygnus). Yet it is of peculiar significance from its probable identity with the blue band of the Wolf-Rayet stars, as well as with a line temporarily radiated by Nova Cygni. Finally, the survival, in a work of such importance, of the nitrogen-association of the chief nebular line, is particularly unfortunate just now, when the question of its origin is under close investigation. Dr. Huggins in particular, cited as the leading authority for the identification, observed indeed in 1864 and subsequently, a "sensible coincidence" between the green ray common to all gaseous nebulæ and the brightest air-line, but never unreservedly adopted a chemical interpretation of an agreement which his own later researches have shown to be merely approximate; and for many years past has used the nitrogen-line equally with the adjacent lead-line, simply as a convenient standard of reference.

The occurrence, however, of a few minor blemishes does not seriously impair the usefulness of a production which ought to serve—either in the original or translated—as a text-book to every worker in sidereal physics. The want of such a one, long felt, is now ably supplied. A word of praise may be added for the simple and straightforward style in which it is written. The vices of cumbrousness and complication, too prevalent in German scientific literature, are happily avoided; there are few, or no "wounded snake" sentences to be found in it, nor any of the *mots d'enflure* which Pascal detested. Some really exquisite reproductions of photographed stellar spectra are exhibited in two plates at the end of the volume. A. M. Clerke.

Comet-seeking at Bristol.

The following summary for the last eighteen months may not be altogether without interest, though the results are meagre, the observations having been much interrupted by my ill-health. The instrument used was a 10-inch silver-on-glass reflector, powers 32, 40, and 60, with fields of 75′, 65′, and 50′ respectively.

* Astr. Nach. Nos. 2553, 2568. † Month. Notices, vol. xxvii. p. 180.

Number of nights of observation	78
Hours of observation	$155\frac{1}{2}$
Telescopic meteors observed	141
New comets discovered	1
New nebulæ discovered	10

During the progress of the work I also recorded 16 brilliant naked-eye meteors. It may be worth while referring more fully to the individual results.

Telescopic Meteors.—I find that during the last half of the year about one meteor per hour is seen in the comet-seeker, but during the first half the number is more scanty, the average being one in two hours. This accords with the relative frequency of naked-eye meteors, and proves that the two classes of these objects are identical as regards the variations in their distribution over the year. My former estimate that telescopic meteors are more frequent than naked-eye meteors in the proportion of about 22 to 1, is confirmed by these recent observations. The opinion that the former are at great heights in the terrestrial atmosphere, appears very probable from their slow motions and short courses. Many of them exhibit curved paths, though this feature is not often marked in regard to naked-eye meteors.

New Comet.—Comet *c*, 1890, was discovered on July 23. It was a small faint nebulosity, in about 228° +78°, and moving southwards nearly 1° per day. It was seen at Nice on July 24 and 25, at Mount Hamilton on July 25, and at many other observatories. The perihelion was attained on Sept. 24, at which time the comet was situated near δ Serpentis, and nearly twice as bright as on the date of discovery. Prof. E. E. Barnard, with the 12-inch refractor at the Lick Observatory, made a valuable and numerous series of observations extending over the period from July 25 to October 6, and his results were published in No. 228 of Gould's 'Astronomical Journal.' Prof. Barnard notes that "the comet remained a faint object throughout the observations. In July and August it had a small stellar nucleus of the 13th magnitude, and a faint diffused tail." Prof. Lewis Swift, with the 16-inch refractor at Rochester, N.Y., observed the comet on three occasions, and says that "it had a short, broad tail." Prof. W. R. Brooks, with the $10\frac{1}{8}$-inch refractor at Phelps, N.Y., saw the comet on August 12 and 16, and found it "faintish but not difficult." A parabolic orbit satisfies the observations. After its perihelion the comet passed rapidly into the southern hemisphere.

New Nebulæ.—Ten new nebulæ were discovered, all of them in, or on the borders of, Camelopardus, and not far from the north pole. A list of these objects was given in the 'Monthly Notices' of the R.A.S., December 1890, p. 96. Eight of the nebulæ enumerated are tolerably conspicuous with a power of 60, and might be seen with a much smaller aperture than 10 inches. I met with no new nebulæ in places far distant from the pole, and there is no doubt that the circumpolar region is a promising one

for further discoveries. It appears to have been much neglected owing to the difficulty of using large equatoreals upon it. Other portions of the firmament have been pretty thoroughly swept, and there are comparatively few nebulæ (plain enough to be picked up with the instruments and powers usually employed in comet-seeking) that still await detection. The space surrounding the pole certainly needs a closer examination than it has hitherto received, for although the more prominent objects are already catalogued, many others must remain which are fairly distinct in moderate apertures.

It is often the case that several nebulæ are clustered near together. Whenever a new one is discovered the surrounding region should therefore be carefully surveyed in search of others. The space immediately outlying known objects may also be regarded as prolific ground for new discoveries. Several of the nebulæ recently discovered at Bristol are close to known objects; thus, on Nov. 7, 1890, I encountered Tempel's pretty large, pretty bright nebula at R.A. $7^h\ 5^m\ 24^s$, N.P.D. $9^\circ\ 34'{\cdot}6$ (N.G.C. 2336), and on examining the region near, soon alighted upon another, 22′ SSf., which had been previously overlooked. I find that after several hours of comet-seeking, faint nebulæ, scarcely obvious at the commencement of work, become very easy objects, the eye being in a much better condition to receive feeble impressions.

Naked-eye Meteors.—Several fireballs and bright flashing meteors were seen casually, and their paths registered with as much accuracy as circumstances allowed. Some of these meteors were recorded at other places, but the published descriptions are not sufficiently definite to enable their real paths to be ascertained. If telescopic observers would always pause to record the large meteors which occasionally obtrude on their attention, we should soon possess a valuable mass of materials. Nearly all the fireballs escape satisfactory investigation owing to the lack of details in the accounts of observers. The apparent course amongst the strs and the duration of flight should always be given as correctlyas possible.

W. F. Denning.

Bristol, 1891, Jan. 9.

The Chromosphere in 1889 *and* 1890.

The following tables taken in conjunction with the corresponding table for 1888, communicated to the 'Observatory' by the late Father Perry (March 1889), show that the period of least disturbance of the chromosphere covered the 12 months of the year 1889, at least so far as the small number of observations allow.

A marked change appears in January 1890, with a decided tendency to a rapid increase of activity, especially in extent, on the limb. But unfortunately the last two months of the year