

over-presumptuous in so doing. I have the honour to be, Sir, your most obedient and humble servant,

W. A. HOLLAND,  
Chief Officer of Ship *Sarah Bell*  
Havre, January 21, Ship "Sarah Bell"

SIR WILLIAM THOMSON,

DEAR SIR,—In reply to your very kind letter of the 18th, I am most confident and very careful in what I have already reported to you. With this exception, that I myself estimated the spot on the sun to be  $\frac{1}{2}$  diam., but conferring with the captain he estimated it to be  $\frac{3}{4}$  diam., it was purely an estimate of the eye. The first time I observed it I could scarcely believe my own eyes; I immediately and properly adjusted my sextant and observed the sun constantly through the day. The spot appeared to move from the sun's upper limb to the lower limb, and nearly through the sun's centre. The captain and myself most particularly noticed the spot both with and without our telescopes, and we feel quite sure there could not have been any mistake, as I have been in the habit of observing the sun's altitude at the least six times during the day at sea; I add the spot appeared quite black. Weather squally, with a very troubled and confused sea; barometer 29°·93 steady. Trusting my notes may be of some use to you, and that you will hear a more explicit account from other navigators.

W. A. HOLLAND,  
Chief Officer *Sarah Bell*, Havre

#### On the Climate of Northumberland as Regards its Fitness for Astronomical Observations

IN May, 1880, I became possessed of the telescope, observatory, and astronomical instruments belonging to the late Rev. Henry Cooper Key, M.A., F.R.A.S., and I erected the telescope and observatory at my vicarage at Alnwick, Northumberland. The instrument is a silver-on-glass reflector, the speculum being by Mr. Calver, of Chelmsford, of 18 $\frac{1}{4}$  inches aperture; as regards perfection of figure, I believe it cannot be excelled. As a specimen of the work it is capable of performing under the best conditions I may say that last November I measured  $\gamma^2$  Andromedæ, the components of that exceedingly difficult double star being now separated by only 0"·28 according to the Washington observers. The weather, however, for observational purposes during the last six months of 1880 was so bad here, that I determined to keep a record, as far as possible, of every night in the year 1881, as regards its fitness for astronomical work, and this record I now lay before your readers. I may premise that no fault can be found with the situation of the observatory. It is 250 feet above sea-level, four miles from the sea, there are no mountains or streams sufficiently near to affect the definition, no collieries or manufactories in the immediate neighbourhood; and, if the definition be bad, no cause can be assigned for it but atmospheric disturbance. The following is the record for each month:—

*January*.—In this month there were 11 nights completely overcast; 4 partially overcast; and 16 clear. I opened the observatory on 5 nights, on 4 of which the definition was very bad, and on 1 bad. On 15 nights there was hard frost accompanied by deep snow.

*February*.—The nights were: Completely overcast, 22; partially overcast, 6. The definition was on 4 very bad, on 1 bad, and on 1 fair.

*March*.—Completely overcast, 24; partially overcast, 7. The definition was on 1 very bad, on 1 bad, and on 3 fair. On 2 nights hard frost prevented observations.

*April*.—Completely overcast, 25; partially overcast, 3; clear, 2. The definition was on 2 very bad, and on 2 nights wind, and on 1 snow prevented observations.

*May*.—Completely overcast, 10; partially overcast, 9; clear, 12. Definition on 15 nights was very bad, on 1 bad, and on 4 fair. One of the partially clouded nights was too cloudy for observations.

*June*.—Completely overcast, 14; partially overcast, 2; clear, 14. Definition was on 5 very bad. I was away from home on 9, and engaged on 2 nights.

*July*.—Completely overcast, 26; partially overcast, 1; clear, 4. Definition was on 1 very bad, on 3 bad, and on 1 I was away from home.

*August*.—Completely overcast, 25; partially overcast, 3; clear, 3. Definition was on 1 very bad, wind or cloud prevented observations on 4 nights, and on 1 I was away from home.

*September*.—Completely overcast, 25; partially overcast, 4;

clear, 1. Definition was on 4 very bad, and on 1 of the partially clouded nights there was too much cloud for observations.

*October*.—Completely overcast, 19; partially overcast, 6; clear, 6. Definition was on 4 very bad, on 1 very fine, wind prevented observations on 4 nights, and on 3 I was away from home.

*November*.—Completely overcast, 13; partially overcast, 5; clear, 12. Definition was on 7 very bad, on 2 bad, on 2 fair, and on 1 very fine. Wind prevented observations on 5 nights.

*December*.—Completely overcast, 15; partially overcast, 1; clear, 15. Definition was on 6 very bad, and on 4 fair. Wind prevented observations on 3 nights, on 2 I was away from home, and on 1 engaged.

The summary for the year is as follows:—229 nights were completely overcast; 51 were partially so (but of these 4 were too cloudy for observations); and 85 were clear. Thus 132 nights ought to have been available for observations. Of these the definition on 54 was very bad, on 9 bad, on 14 fair, and on 2 very fine. Wind prevented observations on 16 nights, frost and snow combined on 15, on 2 frost alone, and on 1 snow alone. On 16 I was absent from home, and on 3 engaged. Total, 132.

I need hardly point out to your readers that the above record is a somewhat melancholy one for the astronomical observer. Ours is a cloudy sky; but in addition to the great amount of cloud, the atmosphere here is almost perpetually in a state of violent disturbance, so that difficult and delicate telescopic work can very rarely indeed be attempted. Last year there were only two occasions on which I found the definition really fine, and on those it only continued so for a short while. When the stars are visible, they are, as a rule, when looked at through the telescope, seen to be flaring, flashing, fluttering, jumping, twirling, or waving—anything in short rather than remaining steady. This is clearly owing to atmospheric perturbation, because on some very rare occasions the images are still, and the definition is superb. I have not been in the habit of using a telescope for a sufficient length of time to say whether last year was an exceptionally bad one for the North of England, but from what I have heard and read, as well as from nine years' residence here, I am afraid it was not. Perhaps others of your readers can throw a little light on this point.

JEVON J. MUSCHAMP PERRY  
St. Paul's Vicarage, Alnwick, January 4

#### Primitive Traditions as to the Pleiades

MY conclusions as to the Pleiades having been believed to be in early ages the centre of the universe, were not in any way based upon the singular name *Alycone* for the principal star in that group. I can hardly account for my having so long forgotten the meaning of that name, and its connection with the belief I had found vestiges of, as to the Pleiades being the centre of all things. It is probable that at first I regarded its significance as a mere accident, as Dr. Tylor evidently does, and dismissed it from my mind. The best proof of the widespread traces of the belief in question is to be found in the fact that even since this correspondence took place I have met among the Berbers of Morocco a name for *Alycone*, which has precisely the same meaning, and which, they tell me, was given to that star because Paradise is in them, and they are the centre of all things. I have also found that the idea, which, as I stated in my last letter, I have for many years entertained, that those stars were observed by means of openings or passages in temples in early ages, is manifestly well founded.

I find that in the Sahara there are temples or ancient mosques, in which the year is still regulated in this way, there being a tube from the top of the building, very small above and larger below, through which the southing of those stars is observed. I have this not only from natives of the Sahara, but also from a European here who has often heard of the system, though he did not know which were the stars that were observed.

Even the Moors have a vestige of the practice in the singular belief that those stars "rest on the top of the mosques." In the feast of tabernacles, too, which is to be found in the Sahara as well as in far-distant quarters of the globe, the Berber tribes build their temporary tents with a hole at the top, so that the young men who are being instructed may see the Pleiades passing overhead. The Jews here have the same custom, and endeavour to explain it by a curious legend as to Jonah's journey to Nineveh. They forget apparently that Moses wrote a good many years before Jonah was swallowed by the whale.