

responsibility and profit. On every ground, therefore, we hope that Sir John Lubbock's proposal will at no distant time be adopted by Parliament; but in the meanwhile there is a still more important department of teaching which is wholly neglected, and concerning which the deficiencies of home instruction are at least equally manifest. We refer to a proper knowledge of the influence of conduct upon life. It should be the duty of every schoolmaster to try and make his pupils understand how production—that is to say, industry—leads to wealth, and how destruction—that is to say, idleness—leads to poverty. The reason why confidence in others is necessary to all enterprise, and the reason why honesty, in the largest sense of the word, is the only root of confidence, should in like manner be enforced by precept and illustrated by example; and such teaching, if it could only be made general, would do more to heal the breach between capital and labour than all the panaceas of all the politicians who have ever sought to figure as the "friends of the working man."

OUR ASTRONOMICAL COLUMN

TEMPEL'S COMET, 1873, II.—Up to the time of writing it would appear that this comet has escaped detection. Even if there be no great error in the calculated position, its faintness must render discovery difficult in the summer skies, but it may be hoped nevertheless that a vigorous effort will be made in the next period of absence of moonlight to recover the comet, as in the event of want of success in the present year, it will be probably lost, or in the same case as the short-period comet of De Vico of 1844, which, being missed at the second return in 1855, has not been again observed. M. Schulhof has communicated to the French Academy a further ephemeris of Tempel's comet, from which are extracted the places subjoined:—

At Paris midnight.			R.A.			N.P.D.			At Paris midnight.			R.A.			N.P.D.		
	h.	m.		°	'		°	'		h.	m.		h.	m.		°	'
July 13	...	15	31	'6	...	93	18	July 29	...	15	47	'6	...	100	8		
„ 17	...	15	34	'4	...	94	55	Aug. 2	...	15	53	'8	...	101	57		
„ 21	...	15	38	'0	...	96	36	„ 6	...	16	0	'8	...	103	46		
„ 25	...	15	42	'4	...	98	21	„ 10	...	16	8	'6	...	105	36		

During this interval the comet's theoretical intensity of light will be only three times that it possessed at the date of the last observation in 1873, when it was the faintest object that could be observed in a dark field with a 7-inch refractor. A few days' difference in the date of perihelion passage, which is probable enough, changes the geocentric path materially, so that the search must be extended to some distance on each side of the calculated place for the day of observation.

In its present orbit the comet cannot approach the planet Jupiter within 0.62, and with M. Schulhof's period of revolution it is easy to see that there will be no near approximation of the two bodies during the next twenty years—in such case the perihelion passages must always occur at a season of the year when observations of the comet would be barely, if at all, practicable. Hence an additional reason for a very close search in the present summer.

THE "TEMPORARY STARS" OF KEPLER AND ANTHELM.—The objects observed by Kepler in 1604 and by Anthelm in 1670, which Sir John Herschel was wont to describe as "temporary stars," but which there is, nevertheless, reason to believe to be still visible as telescopic stars, will not escape the attention of observers who are interested in the variables, at this season. As mentioned some time since in this column, Prof. Winnecke remarked, in 1875, a star of the twelfth magnitude on his scale, which is very near the calculated place of Kepler's famous

Star, and to the place of a star entered upon Chacornac's Chart, No. 52, as a tenth magnitude. We are able to state that no star was discernible in this position with 7-inches aperture on several occasions in 1872-74. The position of Winnecke's star for 1855.0 is in R.A. 17h. 21m. 49.3s., N.P.D. 111° 19' 3"; it therefore precedes No. 16,872 of Oeltzen's Argelander by 33s. and is north of it 2': Argelander's star is of 8.9m. and the best reference point in examination of the neighbourhood. For 1870.0 we have:—

	R.A.	N.P.D.	
	h. m. s.	°	
Kepler's star 1604	...17 22 51	...111.22'0	Schönfeld's reduction from observations of Fabricius.
Chacornac's star 10m.	...17 22 43	...111 22'5	
Winnecke's star 12m.	...17 22 43	...111 20'8	Observed at Strasburg.
Argelander's star 8.9m.	...17 23 16	...111 22'8	

There is also a star of about 12m. in R.A. 17h. 22m. 57s., N.P.D. 111° 24' 4", and therefore as near to the calculated position of Kepler's star as Winnecke's object, which has not shown any variation during several years. The difference of magnitude noted by Chacornac and Winnecke rather points to their star as the one to be closely watched.

The place of the star discovered by Anthelm in 1670 has been calculated from the observations of Picard and Hevelius by Prof. Schönfeld, and from those of Picard only (as given in the *Histoire Céleste* of Lemonnier) by Mr. Hind, their results differing only 2s. in R.A., and 0.4 in N.P.D. The telescopic star 11.12m., which is now visible almost in the same position, was meridionally observed at Greenwich in 1872, the result for 1880.0 being R.A. 19h. 42m. 45.1s., N.P.D. 62° 58' 32". Variation extending to more than one magnitude has been remarked in this object, during the last twenty-five years, thus, with the near coincidence of position affording strong indication that it may eventually prove to be the star which suddenly brightened up in 1670. A star of similar magnitude follows it 12.5s., about 3' to the north, and another follows at 22.5s., about 2' northerly. In the years 1872-74 the presumed star of Anthelm was judged to be at times sensibly equal to the first of these stars following it, at others decidedly fainter—even at the first glance.

JEREMIAH SHAKERLEY.—The transit of Mercury on November 2, 1651, it will be remembered, was predicted by Jeremiah Shakerley, a young devotee of astronomy, who, finding by the tables in his hands, apparently founded upon the observations of Horrox, that it would not be visible here, undertook the, at that period, great voyage to India for the purpose of witnessing the phenomenon, which he observed at Surat. Vincent Wing mentions this circumstance in his *Astronomia Britannica*, where the following passage occurs:—"Hanc conjunctionem prædixit idem D. Shakerlæus in *Colloquio seu Disceptatione, De Mercurio in Sole Videndo*, et postea ipse transmigrans in *Indiam*, conjunctionem hanc insignem ibi videbat, eamque amicis in *Anglia* communicavit, ut patet ex Literis ad *Christophorum Townleum, Henricum Osbornum, Londinensem*, aliosque missis."

No work of Shakerley's exists in the libraries of the British Museum, the Royal Observatory, or the Royal Astronomical Society. His *Tabula Britannica* are in the possession of the Royal Society, and we believe are also found in the Cambridge University Library. The immediate object of this note is to inquire if any reader of NATURE has met with the other works of Shakerley mentioned by Lalande in his *Bibliographie*, or with a publication in which the transit of Mercury in 1651 was predicted.