From this it follows that the critical temperature of hydrogen is 40°·4 or −232°·6 C., which is not far from the value which was found for it experimentally, viz. −234°·5 C. (*loc. cit.*).

From these researches it also appears that it is possible to liquefy hydrogen by the method of free expansion without cooling the gas to −200° C. Provided the heat insulation were sufficiently perfect, it should be necessary to cool the apparatus only to −100°, a temperature which could be attained by means of solid carbonic acid evaporating under reduced pressure, before allowing the hydrogen to expand. M. W. T.

THE RADIANT POINT OF THE APRIL LYRIDS.

THE moon being full on the evening of April 22 this year there is little prospect that the shower of Lyrids will assume prominence as a visible spectacle. It should, however, be carefully looked for on the night following April 21, for, notwithstanding the bright moonlight, it is probable that a few fine Lyrids may be observed if the weather is clear. The maximum formerly occurred on April 20, but 1900 not having been a leap year, the epoch of the shower has advanced one day, and must be looked for on April 21.

There is strong evidence to show that the radiant, like that of the Perseids, moves eastwards with the time, but the Lyrid display is always short-lived and frequently of very feeble character. Moreover, cloudy weather sometimes hides the meteors, or moonlight may practically obliterate them, so that it is extremely difficult to determine the exact place of the radiant on several succeeding nights. The April meteors are rarely as abundant as the August Perseids, though there is always the possibility of a brilliant return of the former as in 1803, when they fell so plentifully that they could not be counted.

I have collected together all the determinations of the Lyrid radiant which I have met with during the last nine years, and they form a curious medley of positions from which it seems impossible to derive any very exact results :—

Date.	Radiant.	Meteors.	Observer.
1893 April 20 ...	257 +46	47	A. A. Nijland, Utrecht.
	271 +42		
	278 +39		
	292 +39		
April 20–21...	267 +37	15	H. Corder, Bridgwater.
	276 +34	10	
April 20–21...	266 +37	—	E. R. Blakeley, Dewsbury (reduced by Corder).
	276 +34		
April 20–21...	265 +34	—	F. H. Ferrington, Shrewsbury (reduced by Corder).
	275 +32		
April 20 ...	272 +33	7	W. F. Denning, Bristol.
21 ...	273 +33	8	
1895 April 13–27...	268 +45	20	H. Corder, Bridgwater.
	270 +29		
	274 +33		
	285 +32		
April 19 ...	269 +37	9	E. R. Blakeley, Dewsbury.
21 ...	274 +36	8	
23 ...	280 +35	4	
1896 April 17–21...	263½ +40	8	A. A. Nijland, Utrecht.
	271 +36	14	
April 18–19...	271 +36	5	H. Corder, Bridgwater.
	284 +32	—	
April 10–22...	275 +38	6	A. S. Herschel, Slough.
1898 April 20 ...	271 +36	22	A. A. Nijland, Utrecht.
	280 +27	13	
April 21–24...	272 +41	9	
April 19 ...	268 +36	4	E. R. Blakeley, Dewsbury.
April 19–21...	268 +25	5	J. H. Bridger, Farnborough.
April 21–22...	273½ +32½	12	W. E. Besley, London.
April 12–22...	270 +40	5	A. S. Herschel, Slough.
April 20 ...	268 +37	7	J. A. Hardcastle.
1899 April 19 ...	253 +13	5	A. A. Nijland, Utrecht.
	277 +39	6	
1900 April 20–21...	273 +34	8	J. H. Bridger, Farnborough.
April 20–21...	266 +26	5	A. King, Leicester.
	274 +33	8	
April 18–24...	268 +38	14	A. A. Nijland, Utrecht.
	277½ +40	19	
	302 +54	8	
April 16–21...	255 +37	12	A. S. Herschel, Slough.
	255 +27		
	275 +35	23	
1901 April 18–23 ..	266 +30	30	A. S. Herschel, Slough.
	271 +30		
April 12–22...	268 +28	32	J. C. W. Herschel, Cambridge.
	273½ +28		
	274½ +33½		
	278 +31		
	278 +37		
	280 +33½		
April 18 ...	266 +33	4	W. F. Denning, Bristol.
April 21 ...	270 +33	25	
April 18-21 ..	261 +36	8	

It will be noticed that some of the observers give a multiple radiant, but that the individual positions compared from year to year do not present a good agreement. At Bristol the radiant has usually been very sharply defined, when the true Lyrids have been sifted from the large number of other meteors directed from showers in nearly the same region of the heavens. The position of the radiant on April 20–21 is at 271° + 33°, and presents a perfect agreement with the radiant point of Comet 1 1861, with which the Lyrids have long been supposed to be associated.

Some of the positions included in the list represent showers in Hercules and other contemporary streams. Mr. J. C. W. Herschel, from his observations in 1901, regards the radiant as decidedly multiple, but I believe that further observation will negative this conclusion. There are a considerable number of other meteoric systems in play at the same epoch as the Lyrids, and these, combined with unavoidable errors of observation, must sometimes give rise to apparently scattered radiation and multiple radiants. W. F. DENNING.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

AT the annual graduation ceremonial of the University of Edinburgh on April 11, Prof. MacGregor, who delivered an address, stated that the suggestion to found a laboratory in memory of the late Prof. Tait had taken practical shape, and that a subscription of 1000*l.* towards this object had been received from an anonymous donor.

SCARCELY a week passes without the announcement in *Science* of generous gifts to institutions for higher education in the United States. The following are among the gifts recorded during the past few weeks :—Mr. J. D. Rockefeller has given 1,000,000 dollars toward the general endowment fund of the University of Chicago, and 250,000 dollars for the general needs of the University during the present academic year. He promised a gift to the Harvard Medical School of 1,000,000 dollars on the condition that 765,000 dollars were collected to meet the sum required for the removal and rebuilding of the school. About 600,000 dollars were subscribed in two weeks, and this was quickly increased to 821,225 dollars, which was more than sufficient to make Mr. Rockefeller's gift available. Mrs. Collis P. Huntington has given 250,000 dollars to the Harvard Medical School to erect a laboratory of pathology and bacteriology in memory of the late Mr. Huntington. Mr. J. Stillman has given 100,000 dollars for the establishment of a chair of anatomy in the same school. Mr. Rockefeller has given 5000 dollars to Washington and Lee University, thus completing the fund of 100,000 dollars for a memorial to the late President William L. Wilson, in the form of an endowment for the chair of economics and political science. Barnard College, Columbia University, has added 500,000 dollars to its endowment, one half having been given by Mr. Rockefeller and the other half having been collected as a condition of this

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