DIARIA BRITANNICA;

OR, THE

BRITISH DIARY:

AN

A L M A N A C K,

FOR THE

Year of OUR LORD 1790.

BEING THE SECOND AFTER

BISSEXTILE, or LEAP-YEAR.

CONTAINING,

A VARIETY of useful and entertaining MATTER in ARTS and SCIENCES:

Calculated, in a particular Manner, for the Improvement of the CURIOUS.

The third Almanack published of this Kind.

Hail learned Friends, all that intends in Diary for to shine,
With enigmas, and algebras, and queries that's divine;
Likewise charades, for learned blades, with other works of truth,
Are here in store, there needs no more, to instruct the British youth.
Works of merit, shall inherit, a crown of verdant bays,
And laurels too, if they will do, t' insert for future days.

BIRMINGHAM,
Printed and sold by THOMAS PEARSON.
Price Nine-Pence stitched.

Chronological Notes for the Year 1790.

The Julian period	6503	Septuageſſima Sunday	Jan. 31
Roman Indiction	8	Shrove Sunday	Feb. 14
Golden number	5	Eaſter Day	April 4
Cycle of the ſun	7	Whit Sunday	May 23
Dominical letter	C	Trinity Sunday	May 30
Epact	14	Advent Sunday	Nov. 28
Number of Direction	14	Years of the Milennium	139

Aſtronomical Characters uſed in this Diary.

♈ Aries	♎ Libra	♄ Saturn	☽ Moon	☌ Conjunction	
♉ Taurus	♏ Scorpio	♃ Jupiter	☊ N. Node	✶ Sextile	
♊ Gemini	♐ Sagitary	♂ Mars	☋ S. Node	□ Square	
♋ Cancer	♑ Capricorn	♀ Venus	⊕ Earth	△ Trine	
♌ Leo	♒ Aquarius	☿ Mercury	♇ Paſt-fortune	☍ Oppoſition, or 6 ſigns	
♍ Virgo	♓ Piſces	☉ Sun			

Of the Four Quarters of the Year.

Spring Quarter begins	March 20, at 38 m. paſt 9 morning
Summer Quarter begins	June 21, at 40 m. paſt 7 morning
Autumn Quarter begins	Sept. 22, at 17 m. paſt 9 at night
Winter Quarter begins	Dec. 21, at 52 m. paſt 1 afternoon

Beautiful Venus will be an evening Star till March the 18th, at which time ſhe becomes a morning ſtar to the year's end.

Jupiter is a morning ſtar till the 14th Day of February, then an evening ſtar till the 4th day of September, at which time he becomes a morning ſtar again to the Year's end.

ECLIPSES for the Year 1790.

IN the courſe of this year, there will be, to the earth's inhabitants, ſix eclipſes of the two luminaries, namely, four of the ſun, and two of the moon, whereof thoſe of the moon will be viſible, and total, to our iſle of Great Britain, according to the following order.

The firſt is an inviſible eclipſe of the Sun, on Wedneſday, the 14th day of April, at 29 m. paſt noon, in lon. ♈ 24° 43′, and moon's latitude 1° 24′ north.

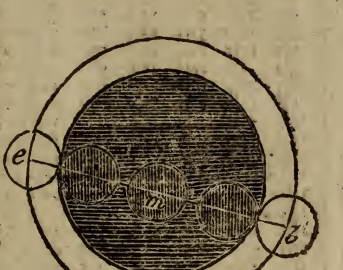
The ſecond is a viſible and total eclipſe of the moon, on Wedneſday the 28th Day of April, according to the following calculation, by Mr. George Dixon, Maſter of the Mathematical School, Goſport, Hants.

Within the circle of the year,
Twice will the moon eclips'd appear,
And will, each time, loſe all her light,
She borrows from gay phœbus bright.

The

The times, for *Greenwich*, you will find,
From calculations here fubjoin'd;
The tables which I do prefer,
Are thofe in *Royal Aftronomer*.

D.	h.	m.	f.
Beginning April 28	10	23	37
Beg. of total darknefs	11	15	33
Middle	12	2	33
End of total darknefs	12	49	43
End of the eclipfe 29	1	41	39
Duration of total dark.	1	34	10
Total duration	3	18	[illegible]
Digits eclipfed	19	45	0



The fame from our M S. Tables.

Beginning April 28	10	2	24
Total dark. at -	11	0	20
Middle - -	11	53	59
End of total darknefs	12	47	38
End of the clipfe 29	1	45	34
Duration of darknefs	1	47	18
Total Duration	3	43	10
Digits eclipfed -	20	48	55

The third is an inviſible eclipſe of the ſun, on Friday the 14th day of May, at 4 h. 36 morn. in ♉ 23° 30′ moon's lat. 1° 14′ ſouth.

The fourth eclipſe is of the ſun, inviſible, on Friday the 8th day of October, at 8 h. 36 m. morn. in ♎ 15° 14′, moon's lat. 1° 27′ ſo.

The fifth is a total and viſible eclipſe of the moon, on Friday the 22d day of October, by Mr. George Dixon, from R. Aſtr.

D.	h.	m.	f.
Begins Oct. 22	10	40	46
Beg. of total darknefs	11	47	4
Middle - -	12	36	19
End of total dark. 23	1	25	34
End of the eclipfe	2	31	52
Duration of total dark.	1	38	30
Total Duration -	3	51	6
Digits eclipfed -	18	45	0

The fame from our M S. Tables.

D.	h.	m.	f.
Beginning Oct. 22	10	57	48
Total dark. at -	12	1	34
Middle - -	12	55	0
End of total dark. 23	1	48	26

	h.	m.	f.
End of the eclipfe	2	52	12
Duration of total dark.	1	46	52
Total duration -	3	54	24
Digits eclipfed -	19	48	37

The ſixth and laſt is an inviſible eclipſe of the ſun, on Saturday the 6th of Nov. at 6 h. 22 m. at night, in ♏ 24° 34′, moon's lat. 1° 14′ north.

A TABLE *of the* MOON's fouthing, *or Times when fhe paffes the Meridian of* Greenwich Obfervatory, *for the Year* 1790.

M D	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m	h. m	h. m.	h. m.	h. m.	h. m.
1	morn	1 0	morn	1 14	2 0	3 28	3 34	4 19	5 21	5 52	7 13	7 33
2	0 38	1 54	0 35	2 12	2 58	4 16	4 17	5 2	6 10	6 43	8 4	8 26
3	1 33	2 47	1 31	3 11	3 55	5 2	5 0	5 47	7 1	7 35	8 57	9 22
4	2 27	3 41	2 27	4 10	4 42	5 46	5 43	6 34	7 53	8 28	9 51	10 20
5	3 19	4 35	3 23	5 6	5 38	6 29	6 26	7 23	8 46	9 21	10 47	11 19
6	4 10	5 29	4 20	5 59	6 25	7 11	7 10	8 14	9 39	10 14	11 45	0 a 20
7	5 1	6 24	5 16	6 50	7 9	7 54	7 56	9 6	10 33	11 0	0 a 46	1 20
8	5 52	7 19	6 11	7 38	7 52	8 37	8 44	9 59	11 27	0 a 6	1 48	2 17
9	6 44	8 13	7 5	8 23	8 34	9 21	9 34	10 53	0 a 22	1 4	2 48	3 11
10	7 38	9 5	7 56	9 6	9 16	10 8	10 26	11 47	1 18	2 3	3 45	4 1
11	8 33	9 55	8 45	9 49	9 59	10 57	11 19	0 a 41	2 14	3 3	4 40	4 49
12	9 28	10 43	9 32	10 31	10 43	11 48	0 a 12	1 34	3 12	4 2	5 3[illegible]	5 34
13	10 22	11 29	10 17	11 14	11 29	0 a 40	1 5	2 27	4 9	5 0	6 18	6 17
14	11 14	0 a 13	11 0	11 57	0 a 16	1 32	1 57	3 21	5 6	5 55	7 3	6 59
15	0 a 4	0 56	11 42	0 a 42	1 6	2 24	2 49	4 15	6 3	6 47	7 47	7 41
16	0 52	1 38	0 a 24	1 28	1 57	3 16	3 40	5 10	6 58	7 36	8 30	8 25
17	1 37	2 20	1 7	2 16	2 48	4 7	4 31	6 6	7 51	8 22	9 12	9 10
18	2 20	3 3	1 51	3 6	3 40	4 57	5 23	7 3	8 41	9 6	9 59	9 56
19	3 2	3 47	2 36	3 57	4 31	5 47	6 17	7 59	9 29	9 49	10 39	10 43
20	3 44	4 32	3 2[illegible]	4 49	5 22	6 38	7 12	8 53	10 15	10 32	11 24	11 32
21	4 26	5 20	4 11	5 41	6 13	7 31	8 8	9 45	10 59	11 15	morn	morn
22	5 9	6 19	5 2	6 33	7 4	8 26	9 5	10 35	11 43	11 59	0 11	0 22
23	5 53	7 3	5 54	7 2[illegible]	7 56	9 23	10 1	11 23	morn	morn	0 59	1 12
24	6 40	7 5[illegible]	6 47	8 17	8 50	10 21	10 56	morn	0 26	0 44	1 48	2 1
25	7 30	8 52	7 41	9 1[illegible]	9 45	11 19	11 48	0 9	1 9	1 29	2 37	2 50
26	8 22	9 48	8 35	10 5	10 43	morn	morn	0 53	1 53	2 16	3 27	3 39
27	9 17	10 44	9 29	11 2	11 42	0 16	0 38	1 36	2 38	3 4	4 16	4 28
28	10 13	11 39	10 24	morn	morn	1 10	1 25	2 19	3 25	3 53	5 5	5 17
29	11 9		11 2[illegible]	[illegible]	0 41	2 1	2 10	3 3	4 13	4 43	5 54	6 7
30	morn		morn	1 0	1 39	2 49	2 53	3 48	5 2	5 33	6 43	6 59
31	0 5		0 17		2 35		3 36	4 34		6 22		7 53

A TABLE *of the* Seven Stars fouthing, *or Times when they pafs the Meridian.*

	A.	A.	A.	A.	A.	M.	M.	M.	M.	M.	M.	A.
1	8 44	6 32	4 44	2 51	1 0	10 57	8 54	6 49	4 54	3 6	1 10	11 5
7	8 18	6 8	4 21	2 29	0 37	10 33	8 29	6 26	4 32	2 44	0 46	10 35
13	7 52	5 45	3 59	2 7	0 13	10 8	8 5	6 3	4 11	2 22	0 21	10 9
19	7 26	5 22	3 38	1 45	11 50	9 43	7 49	5 41	3 49	2 0	11 a 56	9 42
25	7 1	4 59	3 16	1 [illegible]	11 26	9 18	7 16	5 10	3 28	1 37	11 31	9 16

Ufe of the Tables. To find the Time of High Water.

EXAM. On Jan. 1ft Moon fouths at	-	12 38 p.m
Add for N. and F. Moon for London	-	2 30
Time of High Water at London, Jan. 2		3 8 m.
Ex. 1.) On Jan. 1, Seven Stars fouths at		8 44 a.
Semidiurnal arc. fubtract and add	-	8 17
Seven Stars rifes Jan. 1ft Aft.	- - -	0 27 a.
Seven Stars fets next morning Jan. 2,	-	5 1 m.
Ex. 2.) Seven Stars fouths Jan. 1ft at	-	8 44 a.
Sirius fouths after the Seven Stars	-	3 1
Sirius fouth Jan. 1ft afternoon	-	11 45 a.
Semidiurnal arc. fubtract and add	-	4 37
Sirius rifes Jan. 1ft afternoon	- - -	7 8 a.
Sirius fets Jan. 2d morning	- -	4 22 m.

Na. of Stars.	f. a 7*	f. d. a
Aldebaran	0 49	7 29
Capella	1 26	——
Betelgeufe	2 8	6 41
Sirius	3 1	4 37
Alphord	5 42	5 24
Regulus	6 21	7 11
Upp. point.	7 15	——
Virg. fpike	9 39	5 12
Arcturus	10 29	7 55
Antarus	12 41	3 34
Lyra	14 52	——
Atair	16 5	6 46
Fomalhaut	19 8	1 52
Pole ftar	21 13	——
Almach	22 16	——

Full moon 1 day, 7 morn.
Laſt Quart. 8 day, 2 morn.
New moon 15 day, 8morn.
Firſt Quart. 23 day, 11 mor.
Full moon 30 day, 7 night.

D	☉ de. ſouth	♄ de. ſouth	♅ de. north	♂ de. north	♀ de. ſouth	☿ de. ſouth
1	22 59	6 39	12 8	14 5	13 6	24 49
7	22 19	6 27	12 17	14 23	10 24	24 2
13	21 24	6 14	12 28	14 50	7 38	22 18
19	20 14	6 1	12 41	15 26	4 51	19 57
25	18 50	5 46	12 56	16 10	2 5	16 5

M D	W D	Feſtival Days.	Aſpects & Weather.	☽ riſes	☉ ♒	♄ ♌	♅ ♍	♂ ♍	♀ ♒	☿ ♒	☽ ♋	☽ de. north
1	F	Circumcif.	Snow, or	4 46	11 23	9 1	℞	29 10	14 4		18 31	
2	S		cold rain,	6 8	12 24	9 1	2	♓ 11	28 9		15 51	
3	C	2 S. af. Chr.	☌ ☽ ♄	7 25	13 25	9 1	2	1	13	12♌27	12 13	
4	M		☌ ☉ ☿	8 43	14 27	8 1	2	2	15	26 51	7 51	
5	T	Old Chr. d.	☌ ♅ ♀	10 1	15 28	8 1	2	3	16	11♍16	3 2	
6	W	Epiphany	☌ ☽ ♅ ♂	11 18	16 29	8 1	2	4	18	25 36	1 ♋56	
7	T		☌ ♂ ♀	Morn	17 30	8 1	2	5	20	9♎49	6 45	
8	F	Lucian	✶ ♄ ☿	0 33	18 31	8 1	2	6	21	23 53	11 10	
9	S		✶ ☉ ♄	1 48	19 32	8 0	2	7	23	7♍47	14 56	
10	C	1 S. af. Epi.	☌ the be-	3 3	20 34	8 0	1	8	25	21 31	17 48	
11	M	Plow Mon.	ginning,	4 10	21 35	8 0	1	9	26	5♐5	19 39	
12	T		with briſk	5 10	22 36	8 0	1	10	28	18 30	20 21	
13	W	Hil.C.T.b.	gales of	6 5	23 37	8 0	1	11	♒	1♑45	19 55	
14	T	Ox. T. beg.	wind.	☽ ſets	24 33	8 0	1	12	1	14 48	18 24	
15	F		☌ ☽ ☿	4 49	25 39	8 0	1	12	3	27 39	15 59	
16	S		Wind,	5 56	26 40	8 0	0	13	5	10♒18	12 52	
17	C	2 S. af. Epi.	with ſnow	7 1	27 42	8 0	0	14	6	22 43	9 14	
18	M	Qu. birth d.	☌ ♄ ☿	8 5	28 43	8 0	0	15	8	4♓55	5 17	
19	T	Priſca.	☌ ♅ ♂	9 9	29 44	8 0	0	16	10	16 57	1 11	
20	W	Fabian. 1re.	☌ ☽ ♀	10 13	♒ 45	8 ♌	0	17	12	28 50	2n55	
21	T	Agnes	or cold	11 16	1 46	8 29	♌	18	13	10♈39	6 54	
22	F	Vincent	rain.	Morn	2 47	8 29	29	19	15	22 28	10 37	
23	S	Hil. T. beg.	☌ ♄ ♀	0 19	3 48	8 29	29	20	17	4♉22	13 56	
24	C	3 S. af. Epi.	Rain and	1 21	4 49	8 29	29	21	18	16 27	16 43	
25	M	Con. St. Pa.	ſleet to	2 23	5 50	8 29	28	21	20	28 49	18 48	
26	T		the end.	3 23	6 51	8 29	28	22	22	11♊33	20 1	
27	W	Pr.Au.F. b.	☌ ☉ ♄	4 18	7 52	8 29	28	23	23	24 41	20 11	
28	T	[1773. 2 ret.		5 9	8 53	7 29	27	24	25	8♋17	19 13	
29	F			5 53	9 53	7 28	27	24	26	22 20	17 3	
30	S	K. Ch. I M.	☌ ☽ ♄	☽ riſ.	10 54	7 28	27	25	28	6♌46	13 48	
31	C	Septuageſ.	☌ ☽ ☌ ♅	6 11	11 55	7 28	26	26	29	21 29	9 30	

D	D. L beg.	Sun riſe	Sun ſet.	D. L ends	leng. of D.	Day inc.	Clock be. ☉	♄ ſet night	♅ riſ. night	♂ riſ. night	♀ ſet night	☌ ☍
1	5 57	8 2	3 58	6 3	7 56	0 6	4 15	10 2	8 12	8 10	8 13	16 36
7	5 53	7 57	4 3	6 7	7 56	0 16	6 57	9 38	7 45	7 41	8 23	16 17
13	5 49	7 51	4 9	6 11	8 18	0 28	9 21	9 15	7 16	7 9	8 33	15 58
19	5 44	7 45	4 16	6 16	8 32	0 42	11 22	8 52	6 47	6 36	8 41	15 39
25	5 38	7 36	4 25	6 23	8 50	1 0	12 55	8 30	6 17	6 1	8 47	15 20

Last Quart. 6 day, 11 morn.
New moon 14 day, 1 morn.
First Quar. 22 day, 6 morn.

D	☉ de. south	☽ de. south	☿ de. north	♂ de. north	♀ de. north	♄ de. south
1	16 57	5 29	13 15	17 8	1 1	11 20
7	15 8	5 13	13 31	17 58	3 28	7 47
13	13 11	4 56	13 43	18 44	5 40	6 11
19	11 5	4 39	14 5	19 25	7 29	7 17
25	8 54	4 22	14 21	19 56	8 46	9 50

M D	W D	Festival Days.	Aſpects & Weather.	☽ riſes	☉ ♒	☽ ♌	☿ ♌	♂ ♌	♀ ♓	♄ ♓	☽ ♍	☽ de. north
1	M		Rain and	7a31	12 56	7	28	26	27	1	6 21	4 52
2	T	Pur. or C.d.	ſleet.	8 52	13 57	7	28	25	27	2	21 13	of 13
3	W	Blaſe. 3 ret.		10 13	14 58	7	28	25	28	3	5 ♎ 56	5 14
4	T			11 31	15 58	7	28	25	29	4	20 26	9 53
5	F	Agatha.		Morn	16 59	7	28	24	29	5	4 ♏ 38	13 53
6	S		Windy	0 45	18 0	7	27	24	♈	6	18 31	17 1
7	C	Sexageſſima	with ſnow,	1 57	19 1	7	27	24	1	7	2 ♐ 8	19 6
8	M		☌ ♄ ☿	3 1	20 1	7	27	23	1	7	15 27	20 5
9	T	4 return	rain,	3 56	21 2	7	27	23	2	7	28 33	19 57
10	W	Dies Sco. O.	☽ ☉ ♂	4 42	22 3	7	27	22	2	8	11 ♑ 27	13 46
11	T	Collop Th.	and thun-	5 24	23 3	7	27	22	3	℞	24 9	16 40
12	F	Hil. T. ends	der like.	5 53	24 4	7	27	22	3	7	6 ♒ 41	13 49
13	S	Old Can. d.	☽ ☉ ♃	☽ ſets	25 4	7	27	21	4	7	19 3	10 24
14	C	Quin. Val.	☌ ☽ ☿	5a50	26 5	7	26	21	4	6	1 ♑ 16	6 35
15	M		☌ ☽ ♄	6 54	27 6	7	26	20	4	6	13 20	2 33
16	T	Shrove Tu.		7 55	28 6	7	26	20	5	5	25 16	in 32
17	W	Aſh Wedn.	Rain and	9 1	29 7	7	26	20	5	4	7 ♈ 7	5 32
18	T	C. C. B. A.	ſleet, with	10 4	♑ 7	7	26	19	5	3	11 54	9 18
19	F		☌ ☉ ☿	11 6	1 7	7	26	19	6	2	0 ♉ 42	12 43
20	S		C. T. di. m.	Morn	2 8	6	26	19	6	1	12 34	15 38
21	C	1 S. in Lent	briſkwinds	0 8	3 8	6	25	18	6	♒	24 37	17 55
22	M		to the end.	1 7	4 8	6	25	18	6	29	6 ♊ 55	19 25
23	T	Pr. Octa. b.		2 4	5 9	6	25	17	6	28	19 34	20 0
24	W	St. Matt.	Em. Week	2 57	6 9	6	25	17	℞	27	2 ♋ 38	19 33
25	T		△ ♄ ♀	3 43	7 9	6	25	17	6	26	16 11	17 58
26	F		☌ ☽ ♄	4 24	8 9	6	25	16	6	25	0 ♌ 14	15 17
27	S		☌ ☽ ☍ ♃	5 32	9 10	6	25	16	6	25	14 45	11 35
28	C	2 S. in Lent	☌ ♃ ☿	6 1	10 10	6	25	16	6	24	29 38	7 5
		Hare-hunt- [ing ends.										

D	D. L. beg.	Sun riſe	Sun ſet.	D. L. ends	Leng. of D.	Day inc.	Clock be. ☉	♄ ſet night	♃ hou morn	♂ hou morn	♀ ſet night	☋ ♏
1	5 29	7 25	4 30	6 32	9 11	1 21	14 6	8 6	12 32	12 55	3 52	14 58
7	5 21	7 14	4 47	6 40	9 33	1 43	14 35	7 45	12 32	12 22	3 54	14 39
13	5 12	7 3	5 8	6 49	9 55	2 5	14 36	7 25	12 5	11 49	3 59	14 20
19	5 0	6 52	5 9	7 1	10 17	2 27	14 11	7 7	11 30	11 16	4 11	14 1
25	4 47	6 41	5 20	7 12	10 39	2 49	13 21	6 43	11 13	10 44	4 26	13 42

MARCH hath XXXI Days. 7

Full moon 1 day, 6 morn.
Laſt Quart. 7 day, 10 night
New moon 15 day, 7 night
Firſt Quart. 23 day, 10 night
Full moon 30 day, 3 after.

D	☉ de. ſouth	♄ de. ſouth	♃ de. north	♂ de. north	♀ de. north	☿ de ſouth
1	7 23	4 10	14 31	20 12	9 15	11 24
7	5 5	3 53	14 45	20 26	9 17	12 5
13	2 44	3 35	14 57	20 31	8 26	13 2
19	0 21	3 18	15 8	20 27	6 54	12 8
25	2 n 0	3 0	15 17	20 15	4 47	10 17

M D	W D	Feſtival Days.	Aſpects & Weather.	☽ riſes.	☉ ♓	♄ ♌	♃ ♌	♂ ♍	♀ ♒	☿ ♒	☽ ♍	☽ de. north
1	M	St. David	Cold rain	6a26	11 10	6	24	16	6	24	14 46	2 4
2	T	Chad	or ſnow,	7 49	12 10	6	24	15	6	23	29 58	3 f 6
3	W		with wind	9 12	13 10	6	24	15	6	23	15 ♎ 3	8 3
4	T		and ſtormy	10 31	14 10	6	24	15	5	23	29 54	12 2
5	F		variable	11 45	15 10	6	24	15	5	D	14♏23	15 57
6	S		weather	Morn	16 10	6	24	14	5	23	28 29	18 24
7	C	3 S. L. Perp.	all the fore	0 53	17 10	6	24	14	4	23	12 ♐ 11	19 42
8	M		☌ ♃ ☿	1 53	18 10	6	24	14	4	23	25 30	19 50
9	T			2 43	19 9	6	24	14	3	24	8♑30	18 55
10	W		part of the	3 26	20 9	6	23	14	3	24	21 12	17 3
11	T		month.	4 0	21 9	6	♒	14	2	25	3♒41	14 25
12	F	Gregory M.	☌ ☽ ☿	4 28	22 9	6	23	13	2	25	15 59	11 11
13	S			4 55	23 9	6	23	13	1	26	28 7	7 32
14	C	Midlent Su.	Cold rain	5 18	24 8	6	23	13	1	27	10♓ 8	3 37
15	M		☌ ☽ ♄ ♀	☽ ſets	25 8	6	23	13	0	28	22 4	on 24
16	T		☌ ☉ ♄	0a57	26 8	6	23	13	♓	28	3♈55	4 23
17	W	St. Patrick	or ſleet.	8 1	27 7	6	23	13	29	29	15 43	8 12
18	T	Cam. lat. act	☌ ☉ ♀	9 4	28 7	6	23	13	28	♓	27 31	11 42
19	F			10 0	29 6	6	23	13	28	1	9♉20	14 44
20	S	Cuthbert	☌ ♄ ♀	11 5	♈ 6	6	22	13	27	2	21 16	17 10
21	C	5 S. L. Ben.		Morn	1 5	6	22	13	27	4	3♊20	18 52
22	M		Moremild	0 3	2 5	6	22	13	26	5	15 38	19 43
23	T		with ſhow-	0 55	3 4	6	22	13	25	6	28 14	19 36
24	W		ers of rain	1 43	4 3	6	22	D	25	7	11♋13	18 28
25	T	An. Lad. d	☌ ☽ ♄	2 24	5 3	6	22	13	24	8	24 38	16 18
26	F	Cam. T. en.	△ ☉ ♄	3 2	6 2	6	22	13	24	10	8♌32	13 8
27	S	Oxf. T. ends	☌ ☽ ☌ ♃	3 35	7 1	6	22	13	23	11	22 54	9 5
28	C	5 S. L. Palm	Sunday	4 5	8 0	6	22	13	23	12	7♍40	4 24
29	M			4 34	9 0	6	22	13	22	14	22 46	0 f 40
30	T		to the	☽ rif.	9 59	6	22	13	22	15	8♎ 1	5 45
31	W		end.	8 10	10 58	5	22	13	21	16	23 15	10 28

D	D. L. beg.	Sun riſe	Sun ſet.	D. L. ends	leng. of D.	Day inc.	Clock be. ☉	♄ ſet night	♃ ſou night	♂ ſou night	♀ ſet. night	☌ ☍
1	4 41	6 33	5 28	7 20	10 55	3 5	12 35	6a 35	10 56	10 25	8a 12	13 29
7	4 28	6 21	5 40	7 33	11 19	3 29	11 13	6 18	10 31	9 56	7 43	13 10
13	4 15	6 9	5 52	7 46	11 43	3 53	9 37	5 59	10 7	9 30	7 6	12 51
19	4 2	5 57	6 4	7 59	12 7	4 17	7 52	rifes	9 43	9 6	rifes	12 32
25	3 40	5 46	6 15	8 12	12 29	4 30	6 1	5m41	9 20	8 44	6m34	12 13

	D	☉ de. north	♄ de. south	♃ de. north	♂ de. north	♀ de. north	☿ de. south
Last Quart. 6 day; 10 morn.	1	4 44	2 40	15 24	19 51	2 26	7 3
New moon, 14 day at noon	7	7 0	2 23	15 28	19 24	0 49	3 28
First Quart. 22 day, 9 morn.	13	9 13	2 7	15 30	18 52	0 ♌ 12	0n47
Full moon, 28 day, midn.	19	11 20	1 51	15 30	18 14	0 39	5 35
	25	13 20	1 36	15 27	17 31	0 54	10 45

M D	W D	Festival Days.	Aspects & Weather.	☽ rises.	☉ ♈	♄ ♌	♃ ♌	♂ ♌	♀ ♓	☿ ♓	☽ ♍	☽ de. south
1	T	All Fool's	Maunday	9 29	11 57	5	22	13	21	18	8 19	14 28
2	F	Good Frid.	△ ☉ ♂	10 43	12 56	5	22	13	21	19	23 4	17 26
3	S	Richard	♂ ♀ ☿	11 51	13 55	5	22	13	21	21	7 ♐ 25	19 12
4	C	Easter Day	St. Ambr	Morn	14 54	5	22	13	21	22	21 19	19 44
5	M	Easter Mon.	Old L. D.	0 45	15 53	5	21	14	21	24	4♑47	19 6
6	T	Easter Tue.	Showers	1 32	16 52	5	21	14	20	25	17 50	17 27
7	W		of rain.	2 9	17 51	5	21	14	20	27	0♒33	15 0
8	T		♂ ♄ ☿	2 41	18 49	5	21	14	20	29	12 57	11 55
9	F		Brisk gales	3 7	19 48	5	21	14	D	♈	25 8	8 22
10	S		△ ☉ ♃	3 31	20 47	5	21	14	20	2	7♓ 8	4 32
11	C	1 S. af. East.	♂ ☽ ♀ ♄	3 53	21 46	5	21	14	20	4	19 2	0 34
12	M		△ ♄ ☿	4 15	22 44	D	21	15	21	5	0♈52	3n24
13	T		♂ ☽ ☿	4 38	23 43	5	21	15	21	7	12 42	7 15
14	W	O. & C. T. b.	of wind,	☽ sets	24 42	5	21	15	21	9	24 25	10 46
15	T		with show-	8a 6	25 41	5	21	15	21	11	6♉20	13 58
16	F		ers of	9 6	26 39	5	21	16	22	13	18 16	16 34
17	S		rain.	10 5	27 38	5	D	16	22	14	0♊20	18 27
18	C	2 S. af. East.	△ ♂ ☿	10 59	28 36	5	21	16	22	16	12 33	19 30
19	M	1 return	△ ♃ ☿	11 18	29 35	5	21	16	22	18	24 50	19 38
20	T			Morn	♉ 33	5	21	17	23	♌	7♋40	18 47
21	W	East. T. be.	windy,	0 32	1 32	5	21	17	23	22	20 40	16 56
22	T		♂ ☽ ♄	1 9	2 30	5	21	17	24	24	4♌ 1	14 9
23	F	St. George	♂ ☽ ♂ ♃	1 42	3 28	5	21	17	24	26	17 46	10 32
24	S	[Prs. Ma.	b. 1776.	2 11	4 27	5	21	18	25	28	1♍54	6 13
25	C	3 S. af. East.	St. Mark	2 41	5 25	5	21	18	25	8	16 24	1 26
26	M	2 return	□ ☉ ♄	3 7	6 23	☾	21	18	26	2	1♎13	3f32
27	T		□ ♄ ☿	3 37	7 21	☾	21	19	26	5	16 14	8 22
28	W		with	☽ rii.	8 20	6	21	19	27	7	1♍20	12 42
29	T		♂ ☉ ☿	8225	9 18	6	22	20	27	☾	16 21	16 11
30	F		showers.	9 36	19 16	6	22	20	28	11	1♐ 9	18 32

D	D. L. beg.	Sun rise	Sun set.	D. L. ends	Leng. of D.	Day inc.	Clock be. ☉	♄ rii. night	♃ lou night	♂ lou night	♀ rii. morn	☿ ♍
1	3 32	5 32	6 29	8 29	12 57	5 7	3 50	5 17	8 53	9 20	4 12	11 50
7	3 17	5 20	6 41	8 44	13 21	5 31	2 34	57	8 30	3 2	3 58	11 31
13	3 2	5 8	6 53	8 59	13 45	5 55	0 24	1 36	8 7	7 44	3 45	11 12
19	2 44	4 57	7 4	9 17	14 7	6 17	1aft 2	4 15	7 45	7 27	3 34	10 53
25	2 25	4 46	7 15	9 36	14 20	6 30	2 15	54	7 23	7 12	3 24	10 34

Last Quart. 5 day, midnig.
New Moon 14 day, 5 morn.
First Quart. 21 day, 5 after.
Full moon 28 day, 8 morn.

D	☉ de. north	☽ de. south	♃ de. north	♂ de. north	♀ de north	☿ de north
1	15 13	1 21	15 22	16 44	0 0	15 54
7	16 56	1 8	15 15	15 52	0 57	20 23
13	18 30	0 55	15 6	14 56	2 14	23 34
19	19 52	0 43	14 56	13 56	3 46	25 14
25	21 2	0 32	14 43	12 52	5 30	25 35

M D	W D	Festival Days.	Aſpects & Weather	☽ rife.	☉ ♉	☽ ♑	♃ ♋	♂ ♋	♀ ♓	☿ ♉	☽ ♐	☽ de. ſouth
1	S	St. Philip &	James	10 38	11 14	6	22	20	29	13	15 37	19 37
2	C	S. af. Eaſt.	Turbulent	11 31	12 12	6	22	20	29	15	29 40	19 26
3	M	In. of the C.	air and	Morn	13 10	6	22	21	♈	17	13♍17	18 6
4	T		□ ♃ ☿	0 12	14 8	6	22	21	1	20	26 28	15 50
5	W		♂ ♃ ♂	0 47	15 6	6	22	22	2	22	9♏15	12 51
6	T	John P. La	♂ ♄ ♀	1 16	16 4	6	22	22	2	24	21 42	9 22
7	F		perhaps	1 40	17 2	6	22	22	3	26	3♐52	5 35
8	S		thunder,	2 3	18 0	6	22	23	4	28	15 51	1 37
9	C	Rogation S.	♂ ☽ ♄ ♀	2 26	18 58	6	22	23	5	♊	27 42	2n22
10	M	4 return	then more	2 46	19 56	6	22	23	5	2	9♈29	6 15
11	T		△ ♄ ♀	3 10	20 54	6	22	24	6	4	21 18	9 54
12	W	Old May d.	✱ ♄ ☿	3 35	21 52	6	22	24	7	♉	3♉10	13 11
13	T	Aſcenſion	✱ ♀ ☿	☽ ſets	22 49	6	22	25	8	8	15 8	15 57
14	F	5 return	mild with	8 a 2	23 47	6	22	25	9	10	27 15	18 3
15	S		♂ ☽ ☿	8 58	24 45	6	23	25	10	12	9♊32	19 20
16	C	1 S. af. Aſc.	ſhowers of	9 49	25 43	6	23	26	10	13	22 0	19 42
17	M		rain.	10 34	26 41	6	23	26	11	15	4♋42	19 5
18	T		Pleaſant	11 13	27 38	6	23	27	12	17	17 37	17 29
19	W	Q. Char. b.	♂ ☽ ♄	11 46	28 36	6	23	27	13	18	0♌48	14 56
20	T	Oxf. T. en.	♂ ☽ ♃ ♂	Morn	29 34	6	23	28	14	20	14 14	11 33
21	F		for the	0 16	♊ 31	6	23	28	15	21	27 57	7 30
22	S	Prs. Eliz. b.	moſt part.	0 44	1 29	6	23	28	16	23	11♎56	2 58
23	C	Whit Sund.		1 11	2 27	6	23	29	17	24	26 11	1f50
24	M	Whit Mon.		1 39	3 24	6	23	29	18	26	10♏40	6 36
25	T	Whit Tueſ.		2 8	4 22	6	23	♏	19	27	25 19	11 3
26	W	Auguſtine	Emb. week	2 41	5 19	6	24	0	19	28	10♐m 3	14 51
27	T	Ven. Bede	✱ ☉ ♄	3 20	6 17	6	24	1	20	29	24 46	17 41
28	F		Showers to	☽ rif.	7 14	6	24	1	21	♎	9♑22	19 20
29	S	K.C.II.Ref.	the end.	9a18	8 12	6	24	2	22	1	23 43	19 42
30	C	Trin. Sun.	C.T.d.m.	10 6	9 9	6	24	2	23	2	7♑45	18 49
31	M	1 return	△ ♃ ♀	10 45	10 6	6	24	3	24	3	21 24	16 52

D	D. L. beg.	Sun riſe	Sun ſet.	D. L. ends	leng. of D.	Day inc.	Clock aft. ☉	♄ riſ. morn	♃ ſet morn	♂ ſet morn	♀ riſ. morn	☿ ♏
1	2 1	4 35	7 26	10 0	14 51	7 1	3 10	3 32	2 28	2 31	3 13	10 15
7	1 44	4 25	7 36	10 17	15 11	7 21	3 45	3 9	2 5	2 12	3 2	9 56
13	1 15	4 15	7 46	10 46	15 31	7 41	4 0	2 47	1 43	1 52	2 51	9 37
19	0 37	4 6	7 55	11 24	15 40	7 59	3 53	2 24	1 20	1 33	2 40	9 18
25	all	3 50	8 2	Day	16 3	8 3	3 28	2 1	0 57	1 13	2 28	8 59

Last Quart. 4 day, 4 after.
New moon, 12 day, 6 even.
First Quart. 19 day, 10 night
Full moon, 26 day, 5 even.

D	☉ de. north	☽ de. south	♃ de. north	♂ de. north	♀ de. north	☿ de. north
1	22 8	0 21	14 26	11 33	7 41	24 4
7	22 49	0 13	14 10	10 22	9 37	23 25
13	23 15	0 6	13 53	9 7	11 35	21 40
19	23 27	0 0	13 33	7 49	13 30	20 16
25	23 24	0 n 5	13 13	6 28	15 20	19 9

M D	W D	Festival Days.	Aspects & Weather.	☽ rises.	☉ ♊	☽ ♌	♃ ♌	♂ ♍	♀ ♈	☿ ♋	☽ ♐	☽ de. south
1	T	Nicomede	□ ☽ ☿	11 15	11 4	7	24	3	25	4	4 33	14 4
2	W	Oxf. T. be.	Tri. T. b.	11 42	12 1	7	24	4	26	5	17 20	10 41
3	T		Windy at	Morn	12 50	7	24	4	27	6	29 53	6 54
4	F	K.Geo. III.	born 1738	0 5	13 56	7	25	5	28	6	12 ♐ 10	2 56
5	S	Pr.Er.A. b.	☌ ☽ ☽	0 28	14 53	7	25	5	29	7	24 9	1 n 6
6	C	1 S. aft. Tri.	the begin-	0 50	15 51	7	25	6	8	7	♑ 1 5	3
7	M	2 return	ning.	1 12	16 48	7	25	6	1	8	17 40	8 48
8	T		☌ ☽ ♀	1 37	17 46	7	25	7	2	8	29 30	12 13
9	W		Overcast	2 2	18 43	7	25	7	3	9	11 ♒ 35	15 10
10	T	Prs. Am. b.	for rain.	2 34	19 40	7	25	8	4	9	23 41	17 30
11	F	St. Barnabas	with brisk	3 11	20 38	7	25	8	5	9	♉ 0	19 4
12	S		□ ☽ ♀	☽ sets	21 35	7	26	9	7	♓	18 33	19 44
13	C	2 S. aft. Tri.	✶ ☌ ☿	8a29	22 32	7	26	9	8	9	1 ♊ 21	19 24
14	M	3 return	☌ ☽ ☿	9 10	23 30	7	26	10	9	9	4 24	18 3
15	T		✶ ♀ ☿	9 46	24 27	7	26	10	10	9	27 42	15 43
16	W		☌ ☽ ♄	10 17	25 24	7	26	11	11	9	11 ♋ 12	12 30
17	T	St. Alban	△ ☌ ♀	10 45	26 21	7	26	11	12	9	24 53	8 34
18	F		☌ ☽ ♃	11 12	27 18	7	27	12	13	8	8 ♌ 45	4 9
19	S		✶ ☉ ♃	11 38	28 16	7	27	12	14	7	22 45	of 32
20	C	3 S aft. Tri.	☌ ☽ ☌	Morn	29 13	7	27	13	15	7	6 ♎ 52	5 14
21	M	4 return	Longeſt d.	0 5	♋ 10	7	27	13	16	6	21 5	9 42
22	T		□ ☽ ☿	0 35	1 8	8	27	14	17	6	5 ♍ 23	13 38
23	W	Tri. T. ends	gales of	1 11	2 5	8	27	14	18	5	19 43	16 45
24	T	St. John Ba.	wind.	1 53	3 2	8	28	15	19	5	4 ♐ 1	18 50
25	F	St. J. Col. el.	☽ ☉ ☿	2 43	3 59	8	28	15	20	4	18 14	19 43
26	S		Windy.	☽ rit.	4 56	8	28	16	21	4	2 ♑ 16	19 21
27	C	4 S. aft. Tri.	□ ☉ ☽	8a34	5 53	8	28	17	23	3	16 4	17 50
28	M		with ſhow-	9 0	6 51	8	28	17	24	2	29 33	15 21
29	T	St. Pet. and	St. Paul	9 33	7 48	8	28	18	25	2	12 ♒ 42	12 9
30	W	Buck-hunt.	ers of rain	10 3	8 45	8	29	18	26	1	25 31	8 28
		comes in.	and hail.									

D	D. L. beg.	Sun riſe	Sun ſet.	D. L. ends	Leng. of D.	Day inc.	Clock aft. ☉	☽ rit. morn	♃ ſet morn	♂ ſet morn	♀ rit. morn	☿ ♍
1		3 51	8 9		16 18	8 28	2 36	1 35	12 30	12 49	2m15	8 37
7		3 45	8 15		16 30	8 40	1 36	1 11	12 20	12 20	2 2	3 17
13	all	3 43	8 17	Day	16 34	8 44	0 24	0 46	12 8	12 8	1 52	7 58
19		3 41	8 19		16 38	8 48	0b53	0 23	11 48	11 48	1 42	7 39
25		3 42	8 18		16 36	de. 2	2 10	11 50	11 28	11 28	1 22	7 20

JULY hath XXXI Days. 11

Last Quart. 4 day, 9 morn.
New moon 12 day, 5 morn.
First Quart. 19 day, 3 morn.
Full moon 26 day, 3 morn.

D	☉ de. north	♄ de. north	♃ de. north	♂ de. north	♀ de. north	☿ de. north
1	23 7	0 8	12 52	5 5	17 2	18 42
7	22 34	0 9	12 29	3 40	18 34	19 0
13	21 48	0 9	12 5	2 13	19 52	20 8
19	20 48	0 8	11 40	0 44	20 55	21 20
25	19 36	0 6	11 14	0 ♌ 47	21 40	22 6

M D	W D	Festival Days.	Aſpects & Weather	☽ riſes.	☉ ♋	♄ ♌	♃ ♍	♂ ♎	♀ ♉	☿ ♋	☽ ♓	☽ de. ſouth
1	T			10 26	9 42	8	29	19	27	1	7 59	4 29
2	F	Viſit. V. M.	Mild and	10 48	10 39	8	29	19	28	1	20 12	0 25
3	S	Dog d. beg.	☌ ☽ ♄	11 10	11 37	8	29	20	29	0	2♈11	3n36
4	C	5 S. aft. Tri.	St. Martin	11 33	12 34	8	29	20	♊	0	14 2	7 27
5	M		pleaſant	11 59	13 31	8	29	21	1	0	25 51	11 0
6	T	Cam. Com.	all the ſore	Morn	14 28	8	♍	22	3	D	7 ☌ 43	14 7
7	W		✶ ♃ ☿	0 28	15 25	8	0	22	4	0	19 42	16 41
8	T		☌ ☽ ♀	1 5	16 23	8	0	23	5	0	1♊55	18 32
9	F	Cam. T. en.	✶ ♄ ♀	1 45	17 20	8	0	23	☾	0	14 23	19 32
10	S		☌ ☽ ☿	2 34	18 17	9	0	24	7	0	27 10	19 35
11	C	6 S. aft. Tri.	part of the	☽ ſets	19 14	9	1	24	8	1	10♋17	18 36
12	M	Oxford Act	✶ ♄ ♀	7a38	20 12	9	1	25	9	1	23 42	16 33
13	T		☌ ☽ ♄	8 14	21 9	9	1	26	10	2	7♌24	13 34
14	W		☌ ☽ ♃	8 46	22 6	9	1	26	12	2	21 20	9 47
15	T	Swithin	month,	9 14	23 3	9	1	27	13	3	5♍24	5 25
16	F		☌ ☽ ☌	9 41	24 1	9	2	27	14	4	19 34	0 44
17	S		with ſome	10 8	24 58	9	2	28	15	5	3♎45	4 1
18	C	7 S. aft. Tri.	□ ♄ ☿	10 36	25 55	9	2	29	16	6	17 55	8 32
19	M		ſhowers of	11 9	26 53	9	2	29	17	7	2♍3	12 34
20	T	Margaret	rain.	11 47	27 50	9	2	♎	18	8	16 7	15 52
21	W		Wendy	Morn	28 47	9	2	0	20	9	0♐7	18 13
22	T	Magdalen	and ſhow-	0 29	29 44	9	3	1	21	11	14 2	19 28
23	F		ers, and	1 25	♌ 42	9	3	2	22	12	27 40	19 31
24	S	Mag. C. ele.	✶ ☉ ☌	2 25	1 39	9	3	2	23	13	11♑28	18 26
25	C	8 S. aft. Tri.	St. James	3 32	2 36	9	3	3	24	15	24 54	16 20
26	M	St Ann	towards	☽ riſ.	3 34	9	3	3	25	17	8♒5	13 26
27	T		the end	3 a 4	4 31	9	4	4	26	18	21 1	9 56
28	W		rain and	3 28	5 28	10	4	5	28	20	3♓39	6 3
29	T		thunder.	8 51	6 26	10	4	5	29	22	16 2	2 0
30	F		☌ ♄ ☌	9 13	7 23	10	4	6	♋	24	28 10	2n 3
31	S		☌ ☽ ♄	9 35	8 21	10	5	6	1	25	10♈8	5 59

D	D. L. beg.	Sun riſe	Sun ſet.	D. L. ends	leng. of D.	Day dec.	Clock be. ☉	♄ riſ night	♃ ſet night	♂ ſet night	♀ riſ mor.	☌ ☍
1		3 44	8 16		16 32	0 6	3 22	11 34	10 34	11 8	1 23	7 1
7	all	3 48	8 12	Day	16 24	0 14	4 26	11 10	10 12	10 40	1 16	6 42
13		3 52	8 7		16 15	0 23	5 17	10 45	9 50	10 20	1 12	6 23
19		3 59	8 0		16 1	0 37	5 50	10 21	9 28	10 10	1 10	6 4
25	0 52	4 7	7 52	11 9	15 45	0 53	6 4	9 57	9 5	9 53	1 10	5 45

1790.

Last Quart. 3 day, 2 morn.
New moon 10 day, 3 after.
First Quar. 17 day, 8 morn.
Full moon 24 day, 4 after.

D	☉ de. north	☽ de. north	♃ de. north	♂ de. south	♀ de. north	☿ de. north
1	17 57	0 1	10 43	2 34	22 7	21 32
7	16 20	0 ♂ 5	10 15	4 6	22 8	19 22
13	14 34	0 12	9 47	5 30	21 47	15 55
19	12 40	0 20	9 19	7 11	21 4	11 43
25	10 38	0 29	8 40	8 43	19 50	7 11

M D	W D	Festival Days.	Aspects & Weather.	☽ rises	☉ ♌	☽ ♌	♃ ♍	♂ ♎	♀ ♋	☿ ♋	☽ ♈	☽ de. north
1	C	9 S.aft.Tri.	Lammas	10 0	9 18	10	5	7	2	27	21 58	9 38
2	M		☌ ☉ ♄	10 28	10 16	10	5	8	3	20	3♉40	12 53
3	T		✶ ♃ ♀	11 1	11 13	10	5	8	5	♌	15 37	15 39
4	W		□ ♄ ♀	11 38	12 11	10	5	9	6	3	27 38	17 45
5	T		△ ♄ ☿	Morn	13 8	10	☾	9	7	5	9♊52	19 6
6	F	Transfigur.	✶ ♄ ♂	0 23	14 6	10	☾	10	8	8	22 25	20 38
7	S		☌ ♄ ☿	1 14	15 3	10	☾	11	9	10	5♋20	18 59
8	C	10 S.af.Tri.	☌ ☽ ♀	2 15	16 1	10	☾	11	10	12	18 39	17 23
9	M	[St. Law.	☌ ☽ ♄	3 25	16 58	10	☾	12	12	14	2♌21	14 45
10	T	Pr.Brun. b.	□ ♂ ♀	☽ sets	17 56	10	7	13	13	16	16 25	11 14
11	W		☌ ☽ ☿	7a16	18 54	10	7	13	14	18	0♍45	7 0
12	T	Pr.W. bor.	☌ ☽ ♃	7 44	19 51	11	7	14	15	20	15 15	2 19
13	F	[1762	☌ ☉ ☿	8 12	20 49	11	7	14	16	22	29 48	2 ♑31
14	S		☌ ☽ ♂	8 42	21 47	11	7	15	18	24	14♎10	7 12
15	C	11 S.af.Tri.		9 14	22 44	11	8	16	19	26	28 43	11 27
16	M	Du. York b.	Good	9 44	23 42	11	8	16	20	28	12♍50	14 58
17	T		harveſt	10 34	24 40	11	8	17	21	♍	26 53	17 33
18	W		weather.	11 25	25 33	11	8	18	22	2	10♐48	19 3
19	T			Morn	26 30	11	8	18	23	3	24 27	19 25
20	F			0 22	27 33	11	9	19	25	5	7♑54	18 49
21	S	Du.Clar. b.		1 24	28 31	11	9	20	26	7	21 9	16 54
22	C	12 S.af.Tri.	Cloudy	2 30	29 20	11	9	20	27	☾	4♒13	14 18
23	M		and ſome	3 36	♍ 27	11	9	21	28	11	17 3	11 3
24	T	St. Barthol.	ſhowers.	☽ riſ.	1 25	11	10	21	29	13	29 41	7 21
25	W			6a50	2 23	11	10	22	♌	14	12♓ 6	3 24
26	T		☌ ☽ ♄	7 22	3 21	11	10	23	2	16	24 18	0n38
27	F		Pleaſant	7 44	4 19	11	10	23	3	18	6♈20	4 35
28	S	St. Auguſt.		8 8	5 17	12	10	24	4	20	18 13	8 19
29	C	13 S.af.Tri.	△ ♄ ♀	8 37	6 15	12	11	25	5	21	0♉ 1	11 42
30	M	St. John Ba.	to the end.	9 6	7 13	12	11	25	7	23	11 48	14 36
31	T			9 40	8 11	12	11	26	8	24	23 38	16 54

D	D. L. beg.	Sun riſe	Sun ſet.	D. L. ends	Leng. of D.	Day dec.	Clock be. ☉	♄ riſ night	♃ ſet nigh	♂ ſet night	♀ riſ morn	☊ ☋
1	1 21	4 16	7 43	10 38	15 27	1 11	5 53	9 31	8 41	9 31	1 15	5 23
7	1 44	4 26	7 33	10 15	15 7	1 31	5 20	9 7	8 20	9 14	1 22	5 4
13	2 7	4 37	7 22	9 52	14 45	1 53	4 27	8 44	8 0	8 57	1 32	4 45
19	2 27	4 48	7 11	9 32	14 23	2 15	3 15	8 21	7 40	8 41	1 45	4 26
25	2 45	4 59	7 0	9 14	14 1	2 37	1 44	7 59	7 19	8 24	2 3	4 5

Last Quart. 5 day, 1 night
New moon 8 day, midnight
First Quart. 15 day, 5 after.
Full moon, 23 day, 7 mor.

D	☉ de. north	♄ de. south	♃ de. north	♂ de. south	♀ de. north	☿ de north
1	8 9	0 41	3 15	10 29	13 13	1 52
7	5 55	0 51	7 46	11 58	16 31	2 31
13	3 38	1 2	7 16	13 25	14 27	6 36
19	1 19	1 15	6 46	14 40	12 8	10 18
25	1 1	1 25	6 17	16 10	9 30	13 26

M D	W D	Festival Days.	Aspects & Weather.	☽ rises.	☉ ♍	♄ ♌	♃ ♍	♂ ♎	♀ ♌	☿ ♍	☽ ♊	☽ de. north
1	W	Giles	Brisk gales	10 22	9 9	12 11	27	9	26	5 37	18	30
2	T	Lond. burnt	of wind,	11 10	10 7	12 12	27	10	28	17 56	19	15
3	F	[1666	♂ ♄ ☿	Morn	11 5	12 12	28	11	29	0♋22	19	0
4	S		♂ ☉ ♃	0 6	12 4	12 12	29	13	♎	13 17	17	58
5	C	14 S. af. Tri.	with	1 11	13 2	12 12	29	14	2	26 39	15	49
6	M		♂ ☽ ♄	2 20	14 0	12 12	♍	15	4	10♌27	12	44
7	T	Enurchus	☌ ♄ ☿	3 34	14 59	12 13	1	16	5	24 42	8	50
8	W	Nati. B. V.	[♂ ☽ ☿	☽ sets	15 57	12 13	1	18	7	9♍18	4	18
9	T	[M.	♂ ☽ ♃	6a18	16 55	12 13	2	19	8	24 8	0	34
10	F		♂ ☽ ☿	6 50	17 54	12 13	3	20	10	9♎ 4	5	26
11	S		✶ ♄ ☿	7 22	18 52	12 13	3	21	11	23 58	9	58
12	C	15 S. af. Tri.	☌ ☽ ♂	7 56	19 51	12 14	4	22	13	♎♍42	13	49
13	M		showers of	8 41	20 46	12 14	5	24	14	23 11	16	45
14	T	Holy Cross	rain.	9 31	21 48	12 14	5	25	14	7♐22	18	35
15	W	Emb. Week		10 26	22 40	12 14	6	26	17	21 14	19	14
16	T	[Buck-h. e.	Seaf nable	11 27	23 45	12 15	7	27	18	4♑48	18	45
17	F	Lambert	weather.	Morn	24 44	13 15	7	28	19	18 3	17	15
18	S			0 32	25 42	13 15	8	♍	20	1♒ 3	14	53
19	C	16 S. af. Tri.	Showers of	1 38	26 41	13 15	9	1	22	13 48	11	51
20	M	St. Matthew	rain about	2 46	27 40	13 15	9	2	23	26 20	8	19
21	T	K. Geo. III.		3 52	28 39	13 16	10	3	24	8♓41	4	29
22	W	[Cor.	♂ ☽ ♄	4 57	29 37	13 16	11	5	25	20 51	0	31
23	T		these days,	☽ rii.	♎ 36	13 16	12	6	26	2♈53	3n	26
24	F		□ ♄ ♂	ta22	1 35	13 16	12	7	27	14 48	7	12
25	S		☌ ☉ ♄	6 49	2 34	13 16	13	8	28	26 37	10	40
26	C	17 S. af. Tri.	Cyprian	7 17	3 33	13 17	14	10	29	8♉23	13	41
27	M		and	7 51	4 32	13 17	14	11	♍	20 10	16	10
28	T	Sh. L. fwor.	perhaps	8 28	5 31	13 17	15	12	1	2♊ 1	17	57
29	W	St. Mi. Prs.	C. A. M. b.	9 13	6 30	13 17	16	13	2	14 1	18	57
30	T	St. Jerome	thunder.	10 4	7 29	13 18	16	14	3	26 12	19	6
		[Hare-h. b.										

D	D. L beg.	Sun rise	Sun set.	D. L. ends	Leng. of D.	Day dec.	Clock aft. ☉	♄ fou morn	♃ rii morn	♂ fet night	♀ rif morn	☌ ☿
1	3 5	5 12	6 47	8 53	13 35	3 3	0 20	1 35	5 23	8 8	2 20	3 44
7	3 20	5 23	6 36	8 38	13 13	3 25	2 16	1 12	5 5	7 53	2 39	3 25
13	3 36	5 35	6 24	8 23	12 49	3 49	4 19	0 40	4 50	7 39	2 58	3 6
19	3 50	5 47	6 12	8 9	12 25	4 13	6 25	0 26	4 36	7 26	3 10	2 47
25	4 2	5 59	6 0	7 57	12 1	4 37	8 30	0 2	4 23	7 13	3 38	2 28

Last Quart. 1 day, at noon
New moon 8 day, 9 morn.
First Quart. 15 day, 1 mor.
Full moon 23 day, 1 morn.
Last Quar. 31 day, 1 morn.

D	☉ de. south	♄ de. south	♅ de. north	♂ de. south	♀ de. north	☿ de. south
1	3 22	1 37	5 48	17 27	6 54	15 4
7	5 41	1 47	5 19	18 30	4 5	16 5
13	7 57	1 57	4 51	19 46	1 10	16 0
19	10 10	2 7	4 24	20 48	1 f 47	12 33
25	12 17	2 15	3 57	21 44	4 44	8 14

M D	W D	Festival Days.	Aspects & Weather.	☽ rises.	☉ ♎	♄ ♌	♅ ♍	♂ ♍	♀ ♍	☿ ♍	☽ ♋	☽ de. north
1	F	Remigius	Good	11 5	8 28	13	18	17	16	4	8 41	18 20
2	S		✶ ♅ ♂	Morn	9 27	13	18	18	17	4	21 32	16 37
3	C	18 S.af.Tri.	✶ ♂ ♀	0 8	10 26	13	18	18	18	5	4 ♌ 48	13 59
4	M		♂ ♅ ♀	1 20	11 25	13	18	19	19	5	18 31	10 30
5	T		[♂ ☽ ♄	2 35	12 25	13	19	20	21	6	2 ♍ 42	6 19
6	W	Faith	✶ ☉ ♄	3 52	13 24	13	19	21	22	6	17 10	1 39
7	T		♂ ☽ ♅	D sets	14 23	13	19	21	23	6	2 ♎ 15	3 f 14
8	F		weather.	5a2	15 23	13	19	22	24	R	17 23	8 0
9	S	St. Denys	♂ ☽ ☿	6 2	16 22	14	19	23	26	6	2 ♍ ♃ 4	12 15
10	C	19 S.af.Tri.	O.Mic.D.	6 42	17 21	14	20	23	27	6	17 37	15 40
11	M	O.&C.T.b.	♂ ☽ ♂	7 31	18 21	14	20	24	28	6	2 ♐ 26	17 58
12	T		Showers	8 23	19 20	14	20	25	29	5	16 54	19 8
13	W	Tr.K.Edw.	☿ ♄ ♀	9 27	20 20	14	20	26	♎	5	0 ♑ 57	18 53
14	T		of rain a-	10 35	21 20	14	20	26	2	4	14 36	17 37
15	F		bout these	11 42	22 19	14	21	27	3	3	27 51	15 26
16	S		days.	Morn	23 19	14	21	28	4	2	10 ♒ 45	12 32
17	C	20 S.af.Tri.	Ethelr. V	0 47	4 18	14	21	28	6	1	23 20	9 7
18	M	St. Luke		1 52	25 18	14	21	29	7	♎	5 ♓ 40	5 23
19	T	St. Fridifwi.		2 57	26 18	14	21	♐	8	29	17 48	1 28
20	W		♂ ☽ ♄	4 0	27 18	14	22	1	6	28	29 47	2n27
21	T			5 3	28 17	14	22	1	11	27	11 ♈ 40	6 15
22	F			6 5	29 17	14	22	2	12	25	23 20	9 47
23	S			☽ rif.	♍ 17	14	22	3	13	24	5 ♉ 17	12 56
24	C	21 S.af.Tri.	✶ ♄ ♀	5a58	1 17	14	22	3	14	23	17 5	15 33
25	M	K.G.III.a.	Crifpin	6 35	2 17	14	23	4	16	22	28 56	17 31
26	T	K.G.III.p.	1760	7 15	3 17	14	23	5	17	22	10 ♊ 53	18 44
27	W		Variable	8 4	4 17	14	23	6	18	21	22 57	19 7
28	T	St. Simon &	St. Jude	8 56	5 17	14	23	6	19	21	5 ♋ 12	18 36
29	F		♂ ♀ ☿	10 1	6 17	14	23	7	21	D	17 42	17 11
30	S		to the end.	11 7	7 17	14	24	8	22	21	0 ♌ 30	14 53
31	C	22 S.af.Tri.	♂ ☽ ♄	Morn	8 17	14	24	9	23	21	13 30	11 47

D	D. L. beg.	Sun rife	Sun fets	D. L ends	leng. of D.	Day dec.	Clock aft. ☉	♄ iou night	♅ rif morn	♂ fet night	♀ rif morn	☊ ♏
1	4 16	6 11	5 54	7 43	11 37	5 1	10 28	11 3	4 8	6 5	3 57	2 9
7	4 28	6 22	5 37	7 31	11 15	5 23	12 14	11 15	3 54	6 4	4 10	1 50
13	4 41	6 34	5 25	7 18	10 51	5 47	13 45	10 52	3 38	6 37	4 39	1 31
19	4 53	6 46	5 13	7 6	10 27	6 11	14 58	10 28	3 22	6 26	4 59	1 12
25	5 4	6 57	5 2	7 55	10 5	6 33	15 40	10 4	3 6	6 15	5 18	0 52

New moon 6 day, 6 at night
First Quart. 13 day, 3 after.
Full moon 21 day, 8 night
Last Quart. 29 day, 1 after.

D	☉ de. south	♄ de. south	♃ de. north	♂ de. south	♀ de. south	☿ de. south
1	14 36	2 24	3 27	22 39	8 6	6 29
7	16 27	2 29	3 3	23 18	10 52	8 10
13	18 7	2 33	2 40	23 49	13 30	11 14
19	19 36	2 36	2 18	24 11	15 56	14 39
25	20 52	2 37	1 50	24 23	18 7	17 53

M D	W D	Festival Days.	Aspects & Weather.	☽ rises.	☉ ♏	♄ ♌	♃ ♍	♂ ♐	♀ ♎	☿ ♎	☽ ♌	☽ de. north
1	M	All Saints	✶ ♃ ♀	0 15	9 17	14 24	9 24	21	27 12		7 58
2	T	All Souls	☌ ☽ ♃	1 30	10 17	14 24	10 21	22	11 ♍ 10		3 38
3	W	1 return	Good sea-	2 47	11 17	14 24	11 27	23	25 34		11 4
4	T		✶ ♃ ☿	4 7	12 18	14 24	11 28	24	10 ♎ 19		5 49
5	F	Pow. Plot	☌ ☽ ☿ ♀	5 27	13 18	14 25	12 29	25	25 22		10 19
6	S	Mic. T. be.	Leonard	☽ sets	14 18	14 25	13 ♍	26	10 ♍ 23		14 11
7	C	23 S.af.Tri.	△ ♄ ♂	5 19	15 19	14 25	14 2	27	25 44		17 4
8	M	Prs. A.S.b.	☌ ☽ ♂	6 12	16 19	14 25	14 3	28	10 ♐ 45		18 44
9	T	L.M.D.Lo.	lonable	7 12	17 19	14 25	15 4	29	25 27		19 0
10	W		weather	8 17	18 20	14 25	16 5	♍	9 ♑ 44		18 12
11	T	St. Martin	all the fore	9 25	19 26	14 26	17 7	2	23 34		16 15
12	F	2 return	part of the	10 34	20 21	14 26	17 8	3	0 ♒ 57		13 20
13	S	Britius	month.	11 42	21 21	14 26	18 9	5	19 53		10 8
14	C	24 S.af.Tri.		Morn	22 22	14 26	19 11	6	2 ♓ 27		6 24
15	M		Cold rain	0 45	23 22	14 26	20 12	8	14 43		2 30
16	T		☌ ☽ ♄	1 52	24 23	14 26	20 13	9	26 45		in 26
17	W	H.Bp.Linc.	□ ♄ ♀	2 54	25 23	14 27	21 14	11	8 ♈ 38		5 16
18	T	3 return	with brisk	3 51	26 24	14 27	22 15	12	20 26		8 54
19	F		□ ♄ ☿	4 5	27 25	14 27	23 17	14	2 ♉ 13		12 10
20	S	Edmund	winds, and	5 50	28 25	R 27	23 18	15	14 2		14 57
21	C	25 S.af.Tri.		☽ rises	29 26	14 27	24 19	17	25 55		17 7
22	M		variable to	5 a 12	♐ 27	14 27	25 21	18	7 ♊ 54		18 53
23	T	St. Clement	the end.	5 38	1 27	14 27	26 22	20	20 2		19 9
24	W		☌ ♄ ♂	6 50	2 28	14 28	26 23	21	2 ♋ 18		18 52
25	T	Baliol C.el.	D.Glou.b.	7 50	3 29	14 28	27 24	23	14 46		17 40
26	F	[4 ret.	☌ ☽ ♄	8 54	4 30	14 28	28 26	25	27 25		15 50
27	S		☌ ♀ ☿	10 1	5 30	14 28	29 27	26	10 ♌ 10		12 44
28	C	Advent Su.	✶ ♃ ♀ ☿	11 11	6 31	14 28	29 28	28	23 28		9 11
29	M	Mic. T. en.	△ ♄ ♀ ☿	Morn	7 32	14 28	♑ 29	29	6 ♍ 55		5 5
30	T	St. Andrew	☌ ☽ ♃	0 23	8 33	14 28	1 ♐	♐	20 41		0 38
		[Anni. me.	Roy. Soci.								

D	D. L. beg.	Sun rise	Sun set.	D. L. ends	leng. of D.	Day dec.	Clock aft. ☉	♄ fou night	♃ rid morn	♂ fet night	♀ rif. morn	☌ ♍
1	5 15	7 10	4 40	6 44	9 34	7 4	16 14	9 35	2 40	6 3	5 41	0 30
7	5 21	7 20	4 39	6 38	9 19	7 19	16 4	9 10	2 28	5 53	6 0	0 11
13	5 30	7 30	4 20	6 29	8 59	7 39	15 23	8 45	2 10	5 44	6 18	29 52
19	5 38	7 39	4 20	6 21	8 41	7 57	14 13	8 20	1 51	5 37	6 37	29 33
25	5 45	7 48	4 11	6 14	8 23	8 15	12 34	7 54	1 30	5 31	6 55	29 14

New moon 6 day, 5 m orn.
First Quart. 13 day, 9 morn.
Full moon 21 day, 2 after.
Last Quart. 28 day, 11 night

D	☉ de. louth	♄ de. louth	♅ de. north	♂ de. louth	♀ de. louth	☿ de. louth
1	21 54	2 37	1 41	24 26	20 1	20 41
7	22 42	2 35	1 25	24 20	21 34	22 54
13	23 12	2 32	1 11	24 3	22 44	24 26
19	23 27	2 27	0 59	23 36	23 29	25 12
25	23 24	2 20	0 50	22 59	23 48	25 6

M D	W D	Festival Days.	Aspects & Weather.	☽ rises.	☉ ♐	♄ ♑	♅ ♏	♂ ♒	♀ ♐	☿ ♐	☽ ♎	☽ de. louth
1	W			1 31	9 34	14 29	2	2	2	4 47	3 58
2	T			2 54	10 35	14 29	3	3	4	19 13	8 28
3	F		Turbulent	4 14	11 36	14 29	3	4	5	3♏55	12 33
4	S		△ ☉ ♄	5 33	12 37	14 29	4	6	7	18 49	15 52
5	O	2 S. in Ad.	♂ ☽ ♀ ☿	☽ sets	13 38	14 29	5	7	9	3♐49	18 8
6	M	Nicholas	air with	4 44	14 39	14 29	6	8	10	18 44	19 8
7	T		☌ ♄ ♅	5 40	15 40	14 29	6	10	12	3♑28	18 49
8	W	Co. of V.M.	△ ♄ ☿	6 55	16 41	14 29	7	11	13	17 51	17 17
9	T		showers of	8 4	17 42	14 29	8	12	15	1♒48	14 46
10	F		△ ♄ ♀	9 15	18 43	14 ♎	9	13	16	15 18	11 32
11	S		rain.	10 23	19 44	14 0	9	15	18	28 20	7 49
12	C	3 S. in Ad.		11 29	20 45	14 0	10	16	20	10♓58	3 52
13	M	Lucy	♂ ☉ ☿	Morn	21 46	14 0	11	17	21	23 15	on 3
14	T		♂ ☽ ♄	0 33	22 47	14 0	12	18	23	5♈17	4 4
15	W			1 36	23 49	14 0	13	20	24	17 9	7 47
16	T	O.S.C.T.e.		2 37	24 50	14 0	13	21	26	28 56	11 10
17	F	Ox. T. ends		3 38	25 51	14 0	14	22	28	10♉43	14 8
18	S			4 38	26 52	14 0	15	23	29	22 35	16 31
19	C	4 S. in Ad.	Rain about	5 37	27 53	14 0	16	25	♑	4 11 34	18 12
20	M			6 32	28 54	14 1	16	26	2	16 44	19 5
21	T	St. Thomas	Short. day	☽ rif.	29 55	14 1	17	27	4	29 5	19 5
22	W		these days.	5 a 31	♑ 56	14 1	18	28	5	11♊39	18 9
23	T			6 32	1 58	14 1	19	♑	7	24 26	16 18
24	F		♂ ☽ ♄	7 38	2 59	14 1	20	1	9	7♋25	13 36
25	S	Christ. day	Fox-h. be	8 48	4 0	14 1	20	2	10	20 35	10 11
26	C	1 S. af. Chr.	St. Steph.	10 0	5 1	14 1	21	3	12	3♌50	6 14
27	M	St John	Darkmisty	11 13	6 2	14 1	22	5	14	17 29	1 53
28	T	Innocents	♂ ☽ ♅	Morn	7 3	14 1	23	6	15	1♌13	2 37
29	W		weather,	0 27	8 5	14 1	23	7	17	15 9	7 3
30	T		with rain.	1 41	9 6	14 1	24	8	18	29 18	11 10
31	F	Silvester	♂ ☉ ♀	2 56	10 7	14 1	25	10	20	13♍37	14 40

D	D. L. beg.	Sun rife	Sun fet.	D. L. ends	leng. of D.	Day dec.	Clock aft. ☉	♄ fou night	♅ rif. morn	♂ fet night	♀ rif. morn	☌ ♌
1	5 52	7 55	4 5	6 8	8 10	8 28	10 28	7 28	1 7	5 24	7 11	28 55
7	5 54	8 0	4 0	6 6	8 0	8 38	7 59	7 2	0 45	5 19	7 27	28 36
13	5 56	8 3	3 57	6 4	7 54	8 44	5 12	6 36	0 22	5 15	7 41	28 17
19	5 58	8 5	3 55	6 2	7 50	8 48	2 16	6 10	11 59	5 12	7 52	27 58
25	5 58	8 4	3 56	6 2	7 52	in. 2	be. 44	5 44	11 35	5 9	8 1	27 39

Last Year's ENIGMAS answered.

I. A Pin-cushion.
II. A Plough.
III. A Slave.
IV. A Winnowing Fan.
V. A Scythe.
VI. A Pencil.
VII. A Button.
VIII. Fancy.
IX. A Shirt.
X. Time.
XI. An Acorn.
XII. *Prize.* Brit. Diary.

Answer to the PRIZE ENIGMA.

1. ON HOPE. *By Mr. John Sankey, Coal-brook-dale.*

Delightful, and propitious friend,
My humble muse do thou attend,
And ever deign to smile;
Each lab'ring peasant, charm'd by thee,
With joy encreasing crops can see,
To recompense his toil.
Through ev'ry age, thou dost console,
And cheer the drooping troubled soul,
And bid our sorrows rest;
Where hope is with fruition crown'd,
Where perfect charity is found,
There's endless bliss possest.
Inspir'd by thee, we often find,
The cogitations of the mind,
And puzzling wits defy;
By thy assistance is unveil'd
What deep obscurity conceal'd,
The BRITISH DIARY

2. An Address to the BRITISH YOUTH.

By Mr. Abraham Sapcoat, Burton Lazars, Leicestershire.

Fond youth take care, while in your prime,
To keep a DI'RY of your time,
Where you may see, as in a glass,
How swift your days, and years do pass;
And learn, from thence, that mortal man,
And his whole life is but a span;
Therefore beware, nor time misspend,
Least you repent it in the end.
GOD on high ev'ry act surveys,
And marks how you do spend your days;
Your thoughts before him open lye,
Nor can be hid from's searching eye.
To do his will, make it your care,
And virtue be your guiding star;
She peace of mind, and content give,
To all that by her dictates live;
And know this truth, when life is o'er,
You die t'live, and live t'die no more;
For ever sentenc'd you will be,
T'lasting joys, or endless mis'ry;
For when empower'd, th' Arch-Ange shall
Descend to wake the nation's all,
And th' shirl trump rend each mould'ring tomb,
With rise ye dead, to judgment come;
Then th' race of Adam, great and small,
Must stand before the judge of all,
And hear th' awful sentence given;
Ye bless'd come enter into heav'n:
Or go ye curs'd, doom'd to dwell,
In torments with the fiends in hell.
Oh! may the former be your state,
T'eternity, that knows no date;
Then join in praise, with those that sing,
Loud thanks to GOD, our lord and king.

3. *By Mr. Thomas Adcock, of Ashby-de-la-Zouch.*

The *British Diary*, the strength of art,
At once to charm, and captivate the heart;
When pow'rs like thine are wond'rously display'd,
And striking beauties are in form array'd;
Each pow'r will give the other graceful ease,
And ev'ry beauty will be sure to please,

4. *By Mr. Patrick Hall, of Denby, Derbyſhire.*

The *Britiſh Diary* does many doubts reſolve,
And ſhews mankind, how the fleeting years revolve;
Another ſideral year, alas! is gone;
How faſt the minutes change, and ſwiftly run.
Oh! then let's improve our time with pious care,
For future, eternal happineſs prepare.

5. *An Addreſs to the Authors. By Automathicus.*

Kind authors, tho' not known unto me,
Yet my tribute of praiſe I will give;
May your Diary proſperous be,
And to improve it, long may you live:
Then ſhall it raiſe a generous flame,
In all the youth of our Britiſh iſle,
And ſpur them on to honour and fame;
Noble rewards, well worthy their toil.

6. *By Mr. Benjamin Kemp, of Farnsfield, Nottinghamſhire.*

Fame mounted Pegaſus, and rode for the prize,
And th' new *Britiſh Di'ry*, proclaim'd thro' the ſkies.

7. *By Mr. Thomas Fox, Norton, Derbyſhire.*

To find out the prize, I made little enquiry,
The thiſtle, and roſe, ſhew it's the *Britiſh Di'ry*.

8. *By Mr. J. Savage, of Coventry.*

Friend Burr, your lines I have read o'er, your wiſhes ſeem like mine,
May virtue, knowledge, ſcience, truth, in *Britiſh Di'ry* ſhine.

9. *By Mr. Robert Short, of Sherwood Foreſt,*

At once reading over, I found on enquiry,
The prize nicely hid, in th' new *Britiſh Diary*.

10. *By Mr. W. White. of Barnwell.*

The *Britiſh Di'ry*, is the prize,
Which now before me open lies.

Ingenious Anſwers were alſo given by Meſſrs. R. Allwood, J. Bower, B. Burn, Clark, Cator, Dalby, G. Dixon, Eaton, Fletcher, Garton, Hunter, Jackſon, Kite, J. Lilley, Mancunienſis, W. Marſden, C. Metcalf, Newham, O'Kelly, Puzzleam, Rowley, R. Savage, D. Sheridan, J. Smith.

GENERAL

General Answers to all the Enigmas.

1. A Walk. *By Mr. John Sankey, of Coal-brook-dale, Salop.*

One morning as I chanc'd to climb,
The gently rising hill;
When Phœbus had dispers'd the rime,
From off th' murmuring rill.
I heard the *Plough-man*'s whistle blyth,
To echo o'er the plain;
And whetting of the mower's *Scythe*,
To fall the rising grain.
Beneath yon oak, where *Acorns* hung,
I sat me down to rest;
Where *Faning* zephyrs waft along,
And songsters swell their breast.
There I beheld the rustic swain,
To toil and *Slave* did go;
With *Buttons* glittering on th' plain,
And *Linen* white as snow.
The rosy milk maid I espy'd,
Who nimbly trip'd along;
And with *Pincushion* by her side,
Did tune the merry song.
Advancing forward t'ward the grove,
Where Philo swell'd her throat;
I Fancy'd all was joy and love,
Such raptures fill'd each note.
And at return the eve drew nigh
The *Time* soon flew away;
With *Pencil*, and with *Diary*,
I clos'd the fairest day.

2. Collins Love Epistle to Belinda. *By Mr. Daniel Sheridan, of Bilston.*

Attend, sweet nymph, unto my pensive tale,
As when first sat, within the silent vale,
When loves soft passion, urg'd the sweet detail;
There first, your glitt'ring eyes, I did descry,
Like lucid *Buttons*, shine refulgently, 7.
And lovely frame, well rang'd in symmetry.
Soft were the symptoms, harmoniz'd my soul,
When condescension met with no controul,
And sympathizing emblems crown'd the whole.
Down by a brook, meandering thro' a shade,
Where sportive lamb-kins grace the verdant mead,
Our amours gently whisper'd down the glade.
Where *Acorns* strow the groves, sweet tranquil seat, 11.
And *Plough* parole, with harmony repleat; 2.
While *Times* swift *Scythe* supinely actuate. 10. 5.
My charming fair, if ever *Fancy* mov'd 8.
Your gentle heart, O! pity them that lov'd,
A beaut'ous lass, that has so harshly prov'd.
But if you'll wed, your *Pincush* send to me, 1.
And *Pencil* too, with pure alacrity; 6.
And trump liquise—I prize sweet harmony.
O! lovely maid, my aching heart does bleed,
A languid strole, like coal from bellows free'd,
That gloomy shine to *Shift* a foul misdeed. 9. or shirt.
Pellucid ge'nus, certify to me,
With lectures rare, in your next *Diary*, *Prize*.
How I may gain her love, and constancy.
And if you find away, that I approve,
That I might be no more a *Slave* to love, 3.
I'd *Fan* Belinda thro' the silent grove. 4.

3. On Spring. *By Mr. Charles Metcalf, of Great Dalby.*

The ſprings now approaching, and all things look gay,
The lark hails his matins each morn ;
Th' *Plough*, and winnowing *Fan*, will ſoon be laid by, 2. 4.
For th' flowers the fields do adorn.
How blithſome and gay are each nymph, and each ſwain,
The lamb-kins do each ſkip and play ;
And the milk maid with modeſt *Fancy* array'd, 8.
Looks much like the queen of the May.
The meadows are growing, the *Scythe* to employ, 5.
The *Wall-nut*, and *Oak* do now ſpring ; 2. *char.* 11.
Each hill, and each vale, the gay ſeaſon declare,
And birds in the buſhes do ſing.
The *Pencil* of nature, the landſcape has drawn, 6.
The meridian ſun warms th' ground ;
The huſband-man ſtrips him, and ſweats through his *Shirt*, 9.
And joy through the village goes round.
But while in this life, theſe gay ſcenes we purſue,
And fond youth remain in its prime ;
Lets conſider our lives are *Pin'd* up t' a ſpan, 1.
And a *Di'ry* keep of our *Time*. *Prize*. 10.

4. *By Mr. Benjamin Kemp, of Farnsfield.*

Hail new *Britiſh Di'ry*, thy editors hail, *Prize*.
May you proſp'rous be, and your vot'ries ne'er fail ;
For nicely adapted, and form'd is your plan,
To inſtruct, and enlighten th' *Fancy* of man. 8.
The belles, and the beaux, on the *Cuſhion* of eaſe, 1.
Their *Time* will devote, ſince your ſubject all pleaſe, 10.
The *Plough*-man, with un-*Button'd Shirt*, in the morn, 2. 7. 9.
Takes his *Scythe*, like a *Slave*, to mow the ripe corn : 5. 3.
The new *Britiſh Di'ry* conſult to explain,
If th' enſuing day, brings fair weather or rain.
May no envious critic *Pencil* his mind ; 6.
But long may you proſper, and happineſs find.

5. An Addreſs to Phillis. *By Automathicus.*

Dear Phillis, I can *Fancy* none but you, 8.
Long *Time* (you know) I've been your humble *Slave*; 10. 3.
And ſhou'd you, with loves eyes, my rivals view,
You wield death's *Scythe*, and ſend me to the grave. 5.
Nor *Plough*, nor *Fan*, with which we winnow corn, 2. 4.
Fine *Shirt*, nor yet gilt *Buttons*, give relief ; 9. 7.
Like *Acorns*, on the ground, I lie forlorn, 11.
And ev'ry moment am a prey to grief.

My trembling hand the *Pencil* scarce will guide, 6.
Yet wish you wou'd loves voice as well obey;
Then, I'd buy a *Pincushion* for my bride, 1.
And read you the *B. D.* when tir'd of play. *Prize.*

6. *By Mr. John Smith, late School-Master of Garthorp, now of Digby near Sleaford, Lincolnshire.*

Well honest Swift, I've made a shift,
To find your riddle out;
Pincushion rare, to please the fair,
It is without a doubt. (choose,
While *Needham*'s muse, a *Plough* doth
Friend *Sankey* doth intend;
His fair to treat, with *Wall-nuts* sweet,
That he may gain his end.
Sapcoat does then, present a *Fan*,
Marsden with *Scythe* pursues;
Nelson with truth, that rising youth,
His *Pencil* won't refuse.
Then next in turn, comes Mr. *Burn*,
I'll ask him a favour;
And if his muse, no better chuse,
Intreat him for to leave her.
For since his mind, is so inclin'd,
From decency to roam;
I do protest, it would be best,
To keep his works at home.

And not expose, such things as those,
Unto the mind of youth;
Whose heedless minds, too oft inclines
To deviate from truth.
Uranian fair, with matchless care,
Frail *Fancy* would conceal;
Next try your skill, if scan'd it will,
A *Shirt* to you reveal.
Time, swiftly fly, by *Timothy*,
To perform great wonder;
Allwood declares, oaks *acorns* bears,
And oft's fill'd with thunder.
Friend *Burr* has try'd, his skill to hide,
The *Di'ry* in disguise;
Learning doth shine, in ev'ry line,
Throughout the mistic prize.
But now he's gone, O! happy one,
To earth thou'st bid adieu;
And whilst that I, thy place supply,
Thy footsteps I'll pursue.

7. *By Mr. Thomas Fox, of Norton, Derbyshire,*

How happy is *Collin*, who toils at the *Plough*, 2.
His *Time* sweetly passes he cannot tell how; 10.
His *Shirt* is as white, as the new fall'n snow, 9.
With his *Scythe*, like a *Slave*, when he goes to mow; 5. 3.
He hopes his labour will earn him a shilling,
To pay for his threshing, he's not unwilling.
He ne'er racks his brains, with *Pencil*, nor *Di'ry*, 6. *Prize.*
But a *Fan*, or *Cushion*, gives his love Mary; 4. 1.
And cares not a *Button*, what gentlefolks do, 7.
If he has but *Acorns*, to feed his old sow; 11.
His *Fancy* so easy, and calm is his mind, 8.
That contentment, like his, few honest men find;
Success to the *plough*, and good will to mankind.

Ingenious Answers were likewise given by Messrs. Alwood, Bower, Burn, Clark, Cator, Dalby, Eaton, Garton, Hunter, Kite, Lilly, Langley, Mason, Nelson, Newham, O'Kelly, Puzzleom, Philomathes, Short, and White.

Laſt Year's REBUSSES anſwered.

I. Mary Flear.
II. Odo.
III. Coal-brook-dale.
IV. Dill.
V. Ann Eggleſton.
VI. Miſs Knight.
VII. *Not limitted.*
VIII. Paradox.

General Answers to all the Rebusses.

1. A Dream, *by Mr. Daniel Sheridan.*

Down by a cryſtal fountain, bright and clear,
Me thought I lay with charming *Mary Flear*, 1.
In ſweeteſt bliſs, on moſſy banks reclin'd,
While tinkling rills, rurality refin'd.
When, anon, ſacious *Odo appears* } 2.
Paradox like, with *Dill* in brill'ant years ; } 8. 4.
Alſo *Ann Eggleſton*, with charming airs. 5.
Then ſpoke a ſwain, beneath a pendant oak,
With ſigh ſerene, me thought his heart was broke ;
Ye zephyrs ſweet, with meek and tender gale,
Steer here a right, *Miſs Knight*, to *Coal-brook-dale*. 6. 3.

2. *By Mr. Thomas Fox.*

Biſhop *Odo*, of *Coal-brook-dale*, ſheds many a briney tear, 2. 3.
T' gain *Ann Eggleſton*, or Miſs *Dill*, or even *Mary Flear*, 5. 4. 1.
Pluralities ſo common are, no *Paradox* 'twill be 8.
If that Miſs *Knight* of ——— poſſeſſes huſbands three. 6.

3. *By Automathicus.*

Miſs *Mary Flear*, for beauty, firſt is nam'd, 1.
Ann Eccleſton, for virtue, much is fam'd, 5.
Coal-brook-dale is a place to me unknown, 3.
Miſs *Knight's* poſſeſs'd of many charms I own, 6.
Anſwers t' all th' reſt, ſave one, I've fought in vain,
And that's a *Paradox*, I dare maintain. 8.

Laſt Year's CHARADES anſwered.

I. Glow-Worm.
II. Wall-Nut.
III. Bride-Groom.
IV. Man-Hood.
V. Rain-Bow.
VI. Tea-Cup.
Paradox. *Thomas Froſt, and John Snow.*
Anagram Life.

General Answers to all the Charades, &c.

1. *By Mr. Thomas Fox.*

A *Bride-Groom*, in the pride of *Life*, 3. *An.*
His *Man-Hood* ſhews unto his wife ; 4.
She, bluſhing like the *Glow-Worm's* tail, 1.
For *Tea-Cups* with him does prevail. 6.

Rain-Bow.

Rain-Bow. And *Wall-Nuts*, and a score, 5. 2.
Of different articles, and more;
He gives unto his lovely bride,
To rest in quiet by her side.

An Answer to the Paradox. Addressed to Mr. Swift. By Mr. Charles Metcalf.

Tom Frost, and *John Snow*, hereby let you know,
They travel'd through Af'a together;
But in all the time, ne'er saw frost or rime,
Because it was very warm weather.

An Answer to the Paradox, and Anagram. By Mr. Thomas Adcock.

As *Frost*, and *Snow*, together rode, on Asia's fertile plains,
Upon my *Life*, they had no strife, such friendly union gains.

The Paradox answered. By Mr. James Frost.

My brother *Thomas*, he went with *John Snow*,
They travel'd thro' Asia together;
And at their return, I scarce did them know,
They look'd so much like new tann'd leather.

The Anagram answered. By Mr. John Sankey.

With creeking *Files*, the Vulcan toils, and labours all the day;
Each nerve and vein, doth freely strain, 'till death takes *Life* away.

Answers were also given by Messrs. Automathicus, B. Kemp, J. Lilley, R. Short, D. Sheridan, R. Savage; and many others.

Last Year's QUERIES answered.

I. QUERY, *answered. By Mr. John Overton, Grays, Essex.*

A concave, and convex brass tools, of the same curve, and diameter, being ground upon each other alternately with emery, with horizontal cross strokes in every possible direction across each others diameters, the operator, using a few round strokes previous to the cross ones, will necessarily cause each tool to be form'd truly spherical.

II. QUERY, *not answered.*

III. QUERY *answered. By Mr. John Knight, Gosport.*

The laws of nature being general, if it rain'd not at sea it could not rain on land; which are therefore alike necessary—the atmosphere inveloping the terraqueous globe, being the instrument whereby not only clouds, hail, snow, and rain are formed to float, and descend for their general and particular uses; but the diversity of winds are therein produced, by the different rarefactions, condensations, and currents, in restoring the different

parts, are all equally useful to the ends they are destin'd. They, alike, shew the bounty of providence to its creatures in general. The rain, at sea, is as necessary to preserve the health, and temperature of the atmosphere there, through which men, and other animals pass, as that which serves the occasion of vegetables by land. *This was the 6th query in G. L. Pal. 1755.*

The same answered, By Mr. T. Cock, Cirencester, Gloucestershire.

The greatest use of rain at sea, seems to be the purifying of the air, by absorping, and carrying down noxious vapours and exhalations which arise from stagnant waters, putrifying fish, &c. for it is known that, foul air may be made wholesome, by being agitated with fresh water.—*In a similar manner it was answered by Messrs. G. Dixon, B. Kemp, Langley, Mason, O'Kelly, Puzzleom, Rowley, and others*

IV. QUERY *answered. By Mr. George Dixon.*

No man can be *justified* by his works, neither can they save him, of whatsoever sort they are; but we are justified by faith in *Christ*. The works of the truly godly follow them after death; because they were built upon the merits of *Christ*, and thereby shall obtain a more exceeding weight of glory. But the works of the *Papists*, &c. which are mere will works, shall be burnt; They shall be swept away like the house built on a sandy foundation, and thereby shall suffer loss; yet such as believe, that *Jesus* died and rose again, they shall be saved; *so as by fire, i. e.* with as much difficulty as those who escape the raging flames, when their house is burning about them; but their glory will be as the glory of the stars.

Every man's works will be try'd, and those who have built upon the Apostles and Prophets, *Jesus Christ* himself being the chief corner stone, nothing can destroy that building; because it is founded on a rock, which from eternity to eternity is the same.

The same answered. By Mr. J. Knight.

This is one of those Texts which the *Papists* have made use of in order to establish the doctrine of purgatory; but it plainly appears, that the apostle had no such meaning; if we attend carefully to the words, it will appear that the meaning is as follows. He who places too much of his religion in rights and ceremonies, and who mixes corrupt doctrine with the doctrine of the gospel, shall suffer loss by it; either by the afflicting hand of *God*, or by a loss of his reputation, or some other way; yet however, as some remains of faith may be found in him he will obtain salvation at the last, although that inestimable blessing will be procured with as much difficulty as a person is under who is obliged to walk through the fire to save his life. *Answers were also given by Messrs. Allwood, Bower, Clark, Kemp, Low, Mason, Nelson, Puzzleom, Rowley, and others.*

New ENIGMAS *to be answered in next Year's* DIARY.

I. ENIGMA. (25) *By Mr. Robert Short, Sherwood Forest.*

Diarians, what's my name,
Backward, forward, still the same;
Swift as time, I speed my race,
The same hour, at ev'ry place.
Two denials, back to back,
Shew the name, the hungry lack.

II. ENIGMA. (26) *By Mr. William Marsden, Netherhurst, Derbyshire.*

For many years, some hundreds I dare say,
In pristine state, I undisturbed lay;
'Till by rude pow'r, on some ill-fated morn,
By force of arms, from native bed was torn:
Nor yet contented, with thee deed thus done,
Into a fiery gulph, I next am thrown;
There a purgation, I must undergo,
Until from durance, I'm releas'd below.
My name, and nature alter'd, next I'm sold,
And by my master, measur'd out for gold;
Now such my fame, men after me do thirst,
And strive, each morning, who shall have me first.
The farmer well, my worth does understand,
For why? I make improvement in his land;
He sends, his servant, early in the morn,
To fetch me hence, his ground for to adorn;
Who having got me, at his horse's tail,
He merrily goes whistling, down the dale.
The mason also, can my virtues tell,
Because I make his workmanship excel.
Another hint, I'll only mention just,
I still am quick, ev'n when reduc'd to dust.

III. ENIGMA. (27) *By Mr. John Smith, of Digby, Lincolnshire.*

Among your attendants, for this present year,
Ye, Diarian bards, I beg to appear;
My use is valu'd, in many a degree,
Have patience a little, and then you may see,
How the diligent fair, not fearing mishap,
Will, for a companion, fix me on her lap;
But others, who are not so pitiful found,
Have made me contented, to stand on the ground.
Tho', diff'rent the usage, I never complain,
But daily reward their industry and pain;
In affairs of the state, I'm conspic'ous grown,
Esteemed, and valu'd, by all to whom known.

In deciding diſputes, and reſolving doubt,
Scarce known e'er to fail, when for that I ſet out.
To numbers, of other mechanics, I'm made
An help, or aſſiſtance, to carry on trade.
Of my ſize, or form, I ſhall nothing declare,
Find out but my name, and the reſt will appear.

IV. ENIGMA. (28) *By Mr. Abm. Sapcoat, of Burton, Lazars.*

Kind gents attend, to what I here relate,
Who did receive my birth in early date;
Before the world was drown'd, I had a place
I'th vehicle that purſu'd th' human race.
And at this day, I am in great eſteem,
And am both very grand, and very mean,
Sometimes am rais'd aloft, as you muſt know,
At other times, I'm ſeated very low;
But high, or low, or in what e'er ſtation,
I uſeful am, to all, throughout th' nation.
Soon as Aurora faintly dawns the day,
My ſervice I, unto the world diſplay;
To th' king at court, I my aſſiſtance lend,
The peaſant, in the cot, alike befriend.
Like *Prot'us* my ſhape, and form do vary,
Yet as I firſt appear, moſtly tarry.
I'm ſquare, triangle, parallelogram,
An oval, or a circle, elſe I am,
A ſemicircle too, you'll oft me ſee,
And of moſt figures in geometry.
My form ſo various, ſo great my uſe,
I ſubject am, to very great abuſe,
By ill deſigning men, who ſeek my hurt,
And, in my face, throw ſtones, or mire, or dirt;
All this I calmly bear, nor once complain,
Nor doubt but I, ſhall be repair'd again.

V. ENIGMA. (29) *By Mr. George Dixon, Goſport, Hants.*

Enigmas ſure, engage the mind,
When we would their true anſwers find;
Sure they're intended to amuſe,
At other times, ſerve to confuſe:
But what I've here incloſ'd to you,
You'll find, quite eaſy, juſt and true,
For dancing I was ſurely made,
And can out do, both man and maid:
Without the aid of fiſe, or drum,
I jig it from my finger and thumb;
No whip, or ſtaff, you need I ſay,
At your deſire, I ſkip and play.

To muſic I ne'er lend an ear,
But dance it, jig it, here and there;
In buff, I do it, without dread,
And when I've done, I fall down dead.
But rais'd a freſh, I ſkip about,
While others, by me, make a rout;
Upon one leg, all this I do,
And am admir'd, not by a few.
More revolutions I have known,
Than kings, and queens, upon the throne;
'Im ſwifter than gay Phœbus bright,
Tho' he's in motion day and night;
And often turn my axis too,
Than he could e'er pretend to do.
Now tell my name, whoe'er you are,
Altho', at firſt, may make you ſtare;
But what I've told to you is true,
And when you know't, you'll ſay ſo too.

VI. ENIGMA. (30) *By Mr. J. Knight, Goſport.*

Ye riddling wits attend, while I proclaim,
In *Britiſh Diary*, my myſtic name:
My wond'rous ſtature, often times is ſeen,
To cover lands, and reach from green to green.
Lifeleſs I am, yet life's right form I wear;
But I can neither ſee, ſmell, taſte, or hear.
Swiftly I come, and enter in, but where,
There's not a chink, lets in the open air:
Like thought again, I'm, in a moment, gone,
But yet, I never can be left alone.
Imper'al robes, I often times do wear;
Sometimes I do, in beggars rags appear.
In all things falſe, I am, yet ever true,
I'm ſtill the ſame, but am for ever new:
I ne'er was born, nor never can I die,
Then, *Britiſh* bards, pray tell me, what am I?

VII. ENIGMA. (31) *By Mr. John Sankey, of Coal-brook-dale.*

In bleſt retirement I delight,
And with religion do unite;
Yea, ev'ry ſect obey,
Within yon humble cell I'm ſeen,
And oft upon the verdant green,
Where fanning zephyrs play.
In flow'ry meads, and ſhady groves,
There I with peace, and freedom roves,
Amid the ruſtling trees;
n ſwe et ſequeſter'd ſhades abound,
And may, in every vale, be found,
Where blows the gentle breeze.

Tho' nymph, nor ſwain, I never knew,
Yet, do attend the foppiſh beau,
And do adorn his head;
The gallant hero, do attend,
To be both ornament, and friend,
Tho' number'd with the dead.
In tempeſt great, I oft appear,
And don't the troubled ocean fear,
Yet I the ſtorms diſdain;
When boiſt'rous winds have toſs'd me o'er,
I terminate in ev'ry ſhore,
Tho' never taſte of pain.
If Philomela ſwells her throat,
'Tis I that finiſh ev'ry note,
And ev'ry voice improve;
When hymen meet the ſoft embrace,
I decorate the fair one's face,
And taſte the ſweets of love.

VIII. ENIGMA (32) *By Mr. T. Fox, Norton, Derbyſhire.*

Let others trace their pedigree,
And boaſt of their antiquity:
In lofty themes, their fame relate,
My being is of modern date.
Whether I ſprung, from French, or Dutch,
Or Engliſh heads, it means not much;
My qualities ſo well are known,
'Tis almoſt to a proverb grown,
That men of fortune, without me,
Are thought of mean and low degree;
But clowns with me have ſome pretence,
To rank with men of conſequence.
My ſhape is taper, like a ruſh,
Hangs pendent—at the end a buſh,
In ſilk, or ſatin, firmly ty'd,
A ringlet plac'd, on either ſide.
Whoſe fragrant ſcent, perfumes the air,
And captivates the charming fair.
To make my name, more plain appear,
Go ſearch the hog-ſtye, if I'm there.

IX. ENIGMA. (33) *By Mr. Benjamin Kemp, of Farnsfield.*

When firſt, by wond'rous power, th' king of kings,
From empty Chaos, call'd terreſtr'al things;
When nature's num'rous train, deriv'd their birth,
I with the pond'rous group, appear'd on earth;
But ne'er 'till Nox, with ſable, claſſes day,
And darkſome ſhades, envelope the ſun's ray.
The ſcretch owl's omens, echo thro' the plains,
And gibb'ring ſpectres, haunt the wild domains.

Do I come forth, to viſit meads, and greens,
And bear the little fairy kings, and queens;
And yet my pliant aptitude is ſuch,
I oft elude, the gentle human touch.
My gen'ral power, and influence to ſhare,
The bending *Arab*, ſend to heav'n his prayer.
One attribute of dignity is mine,
Which ſpeaks me favour'd, by a pow'r divine:
When Iſr'els tribe, revolted from their God,
And bow'd, alleg'ance, to a tyrant's nod;
Th' Almighty's ſanction, was confirm'd in me,
When, by an arm of fleſh, he made them free.
But ah! why boaſt—ſince ev'ry earthly truſt,
Is all a ſhadow—momentary duſt;
For, when bright ſol mounts his triumphant car,
I flee, I fall, gone like a morning ſtar.

X. Enigma. (34) The Prize Enigma. *By Automathicus.*

In ſaturn's reign, I was, by all, careſs'd,
By ev'ry ſwain ador'd, tho' plainly dreſs'd;
A goddeſs, then eſteem'd, of beauty great,
Beyond compare—but now, how ſad my fate!
I'm deſtitute of friends—each man's my foe,
And maids of honor, nothing of me know;
If I within their doors, do hap to come,
With ſcorn I'm treated, and ſent packing home.
Ah cruel fair! to perſecute a friend,
Who would you happy make, if you would lend
An ear to my adviſe. Do you not know,
That my enemy is, your deadly foe.
How many of your ſex, have been betray'd
By her, and their lives bitter to them made;
But if you me, to my empire reſtore,
Vile flatterers will injure you no more.
Recal me from exile, and be my friends,
Whoſe exaltation, to your honor tends;
Teach all the world, to know my name, and worth,
(Tho' now deſpiſs'd) how noble by my birth.
Grant theſe requeſts, and then I will engage,
To reſtore unto you, the golden age.

New Rebuses.

I. Rebus. (18) *By Mr. William Marſden.*

A large tract of ground, where coarſe herbage doth grow,
Revers'd, will a part of your dwelling place ſhow.

II. Rebus

II. Rebus. (19) *By Mr. Thomas Fox.*

Three fifths of a vapour, that mounts in the air,
When join'd to two fifths, of what time does declare;
Will ſhew you a ſomething, I juſtly can ſay,
That's uſeful to ladies, by night, or by day.

III. Rebus. (20) *By Mancunienſis.*

To fifty, a cypher, and five, when combin'd,
Add fifty times five, and directly you'll find;
The name of a paſſion, that Flora the fair,
Can inſpire in the breaſts of all who revere;
A beautiful maid, that together can blend,
The lovely ſweet miſtreſs, and ſenſible friend.

IV. Rebus. (21) *By Mr. George Dixon, Goſport.*

Four letters do compoſe my name,
There's two alike, and two the ſame;
And may be read, juſt as you pleaſe,
Backward or forward at your eaſe.
A ſon, or daughter, you muſt be,
Before you can lay claim to me;
So, gent's, diſcloſe what I've involv'd,
And then the rebus, you have ſolv'd.

V. Rebus. (22) *By Mr. Benjamin Kemp.*

Three ſevenths of what's given to a thief in jail,
When his friend's interceſſion, for crimes countervail;
And two fifths of that Hittite, whoſe beautiful wife,
Caus'd a dignifi'd perſon, to ſeek for his life.
Of a title, one half, to th' clergy oft given,
When preferment he's gain'd, in the orders of heav'n;
One half of what mortals, of no rank, will ne'er ſave,
But void of diſtinction, will bring all to the grave.
One half of a ſtone, held moſt precious of yore,
Which a rank in the Jewiſh pretoral once bore;
Now, unite theſe together, and tremble my friend,
When ſummoned to torment, or joy without

New Charades.

I. Charade. (12) *By Automathicus.*

With the new waked *Perſian*, adoration pay,
And then you'll have my *Firſt* in view;
The body of a plant, or oak, or fir, each day,
Will ſhew my *Second* unto you.
My whole, without falſehood, will ſurely tell,
The place's name, where I, at preſent, dwell.

II. CHARADE. (13) *By Mr. Abraham Sapcoat, of Burton-Lazers.*

My *firſt*, upon a gibbit hung,
Obedient to old, and young;
My *ſecond* on the highway ſpeed,
And tidings bring to moſt that need.
My *whole* is fix'd, and never rove,
Unleſs by force, compell'd to move.

III. CHARADE. (14) *By Mr. John Sankey, Coal-brook-dale.*

My *firſt* ſtands as ſent'nal, attending your door,
My *next*, 'tis well known, does the body ſecure;
My *whole*, pretty maſters, and miſſes attend,
Ere they are bedeck'd, for to viſit a friend.

IV. CHARADE. (15) *By Mr. William Marſden, Netherhurſt.*

My *firſt*, conſiſts of ſkin, bone, fleſh, and blood,
And may be ſeen, felt, heard, and underſtood;
My *ſecond* is inviſible to all,
Yet ſometimes felt by great, and alſo ſmall.
If of my *whole* you chance to be poſſeſt,
I dare pronounce, I am no welcome gueſt.

V. CHARADE. (16) *By Mr. Thomas Fox, of Norton.*

My *firſt* is found uſeful in every cot,
My *next* is inherent on every ſot;
The *whole* well employ'd, in it's natural uſe,
Makes *Dolly* eſteem'd—may a huſband produce.

VI. CHARADE. (17) *By Mr. Benjamin Kemp, Farnsfield.*

When quarrels ariſe, and jarring threats prevail,
My *firſt*'s given, when admonitions fail;
When Iſr'el in the wilderneſs abode,
My *next* contain'd, th' glorious ark of GOD.
When fortune frowns, or earthly friendſhips ceaſe,
My *whole*, affords a fund, of laſting peace.

VII. CHARADE. (18) *By Mr. George Dixon, of Goſport.*

How many houſes makes my *firſt*, I never yet did know,
But this you may, at preſent, paſs, as it is nought to you;
My *ſecond*'s carry'd many a ſoul, acroſs th' raging main,
And this likewiſe is nought to you, if they ne'er come again.
Within my *whole* you ſurely are, if in my firſt you dwell,
A vaſt extent of ground it takes, and that is known right well.

VIII. CHARADE. (19) *By Mr. Daniel Sheridan, of Bilſton.*

My *firſt* on plains, where art with nature vie,
And roſes ſweet on beds ſupinely lie,
In emulation, with the tyrant dye.

My

My *next*, behold, parole the liquid plain,
Diſpenſing pleaſure, or creating pain,
And oft diſturbs my *whole*'s ſweet tranquil reign.
Now, both extremes connected, will explore,
The moſt ſublime, and ſcientific lore,
That I eſteem, and ever ſhall adore.

New Anagrams.

I. Anagram (3.) *By Mr. John Sankey.*

Tho' I diſgrace both nymph and ſwain,
Tranſpos'd, I do the fair one gain.

II. Anagram (4.) *By Mr Abraham Sapcoat.*

If you a foſil right tranſpoſe, my friend,
'Twill ſhew what is co-equal with your end.

New Queries.

I. Query (15) *By Mr. Joſeph Lilley, of Barwell, Leiceſterſhire.*

What were the names of the two thieves, who ſuffered with our bleſſed redeemer?

II. Query. (16) *By Mr. Benjamin Kemp, Farnsfield.*

When, by whom, and on what occaſion, was that once magnificent city of *Palmyra* laid in ruins?

III. Query. (17) *By Mr. George Dixon, Goſport.*

Of all the ſciences, what kind of knowledge is the moſt valuable?

VI. Query. (18) *By Mr. T. Cock, Cirenceſter, Glouceſterſhire.*

What is the beſt ingredient to put in oil varniſh (for varniſhing ſilk, &c.) to prevent it from being ſticky, or ſtarky, when dry?

V. Query. (19) *By Mr. John Overton, Grays. Eſſex.*

Required the beſt practical method, of communicating a parabolic figure, to a ſpherical ſpeculum, upon a poliſher of pitch?

Verſes occaſioned by reading the Royal Proclaimation, appointing a day of public thankſgiving to almighty God, for his Majeſty's happy recovery.

By Mancunienſis.

Britons raiſe your voices high,
To heav'ns almighty king,
Let heav'n, and earth, and ſea and air,
With loud Hoſannas ring.
Nor you Diarians be the laſt,
To raiſe your voices high,
In ſongs of praiſe to him who dwells,
Above yon glorious ſky.

For what? becauſe th' almighty pow'r
Who ſits enthron'd above,
Has drove fell ſickneſs from a king,
Bleſt in his people's love.
Has by our King's returning health,
Turn'd all our grief to joy,
Let then thy praiſe O king of kings!
Our ev'ry breath employ.

Laſt

Laſt Year's MATHEAMTICAL QUESTIONS anſwered.

I. Queſtion (14) *anſwered by Mr. T. Cock, Cirenceſter, Glouceſterſh.*

Put the tang. of 23° 28′ the ſun's greateſt dec. $= a$, that of 51° 31′ the given lat. $= b$, and $\frac{8}{15} = c$; then, the aſcen. diff. $= a\,b$, and the longeſt day (in the given lat.) at London $= 2\sqrt{a\,b + b} = 16\text{h}\ 24'\ 48''$, which put $= 2d$, and let the tang. of the required lat. be denoted by x; then, the longeſt day in that lat. will be $= 12\text{h} + 2\,a\,x$, and the ſhorteſt $= 12\text{h} - 2\,a\,x$, and *(per queſt.)* $12\text{h} - 2\,a\,x = 2\,c\,d$; hence, the aſcen. diff. $a\,x = b - c\,d = 90° - 65°\ 39'\ 7'' = 24°\ 20'\ 53''$, and $x =$ *tang.* 43° 31′, the required latitude.

Note. If that latitude be required where the ſhorteſt day is any part *(p)* of the longeſt; then we ſhall have $12\text{h} - 2\,a\,x = 12\text{h} \times 2\,a\,x \times p$; hence, the aſcen. diff. $a\,x = \frac{1-p}{1+p} \times 6$ hours $= \frac{1-p}{1+p} \times 90°$, and x, the tang. of the require lat. $=$ fine $\frac{1-p}{1+p} \times 90° \div a$. *Ex.* Suppoſe the ſhorteſt day equal to half the longeſt, then, $p = \frac{1}{2}$, and $x =$ tang. 49° 2′, the lat. required.

Anſwers were alſo given by Meſſrs. R. Allwood, T. Adcock, B. Burn, S. Banyard, J. Bickford, T. Clark, S. Croſs, W. Chow, T. Cater, P. Dalby, G. Dixon, T. Dudley, J. Eaton, J. Enſon, J. Fletcher, T. Garton, H. Gillot, P. Hall, B. Harris, S. Jackſon, J. Knight, B. Kite, S. Low, Mancunienſis, T. Maſon, J. Slack, T. Todd, and A. Young.

II. QUESTION (15) *anſwered by Mr. Thomas Booth, of Newark.*

The ſquare root of the $\left\{\begin{matrix}\text{ſum}\\\text{diff.}\end{matrix}\right\}$ of twice the firſt equation $\left\{\begin{matrix}\text{added to}\\\text{taken from}\end{matrix}\right\}$ the ſecond, gives $\left\{\begin{matrix}x+y=40.0499\\x-y=14.\end{matrix}\right\}$ hence, $x = 27.02495 = 27\text{y.}\ 9\text{d.}\ 8\text{h.}\ 41'$, and $y = 13.02495 = 13$ years, 9d. 8h. 41′. *W. W. R. The ſame by Mr. Daniel Sheridan, of Bilſton.*

From the ſecond equation, take twice the firſt, and you'll have $x^2 = 2\,x\,y + y^2 = 196$, $\therefore x - y = 14$. To twice the firſt, add the ſecond, and you'll have, $x^2 + 2\,x\,y + y^2 = 1604$ $\therefore x + y = 40.05$; then by addition, and ſubtraction, $x = 27\text{y.}\ 9\text{d}$; and $y = 13\text{y.}\ 9\text{d.}$ *The ſame by Samuel Banyard, Great Yarmouth.*

The numbers, in this queſtion, appear to have been wrong printed, but to give a literal ſolution, let $x\,y = p$, and $x^2 + y^2 = s$, then will x be found $= \frac{\sqrt{s+2\,p} + \sqrt{s-2\,p}}{2}$, and $y = \frac{\sqrt{s+2\,p} - \sqrt{s-2\,p}}{2}$.

Solutions were alſo given by Meſſrs. T. Adcock, W. Chow, G. Dixon. P. Hall, Mancunienſis, R. Milward. P. Rowland, T. Todd, and others.

III. Question. (16) *Answered by Mr. Patrick Hall.*

Put $a = 5992$, and $b = 630092$; then, from the 1st. equa. $x = \frac{a+y^2-y}{4y+1}$ which substitute in the 2d, and $\frac{y^2}{7} \times \frac{a+y^2-y}{4y+1}\Big|^2 + \frac{a+y^2-y}{4y+1} + y = b$; solved, by trial and error, give $y = 50$; then $x = 42$. *The same answered by Mr. Thomas Adcock, the proposer.*

Let $5992 = a$, and $630092 = b$; then by transposition of the first equation, $x = \frac{a+y^2-y}{4y+1}$; put this value of $x = m$, and substitute it in the second, we have $\frac{m^2 y^2}{7} + m + y = b$, this solved gives $y = 50$; and $x = 42$, the ages required.

Answers were given by Messrs. S. Banyard, W. Chow, G. Dixon Evers, J. Fletcher, M. Gedling, B. Lutterworth, D. Sheridan, &c.

IV. Question. (17) *Answered by Mancunienſis.*

Because, the perimeters of the square and equilateral triangle are equal, their areas are to each other, as $1 : \sqrt{\frac{16}{27}} = \sqrt{.592}$, or nearly, as 1: .7698; therefore this part of the data is unnecessary; but as the product of their areas is 6561, the area of the square will be $\sqrt{\frac{6561}{\sqrt{.592}}} = 92.32$, and of the triangle $92.32 \times \sqrt{.592} = 71.068$

The same by Mr. George Dixon, Gosport, Hants.

After omitting the proportion of the areas, which is unnecessary. Put $x =$ side of the $\triangle$, $y =$ side of the square, $a = .4330127$, $b = 6561$; then, $3x = 4y$, and $y^2 x^2 a = b$; now by exterminating x, in each equation, and by reduction we get, $9b = 16. a y^4$; hence, $y = 9.6083$, and $x = 12.8111$.

The same by Mr. John Bickford, Grey Coat Hospital, Westminster.

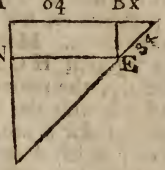
Put $x =$ side of the square, and $y =$ the side of the equilateral triangle; also, $a = .433$ (a constant factor for the equi. $\triangle$) and $b = 6561$; then, $a y^2 x^2 = b$. and $4x = 3y$. or $x = \frac{3y}{4}$ whose square is $x^2 = \frac{9y^2}{16}$, which substituted in the 1st equation we get $\frac{9 a y^4}{16} = b$; reduced gives $y = \sqrt[4]{\frac{166}{9a}} = 12.81$, and consequently $x = 9.607$. *The same by Mr. W. Chow.*

Put $3x =$ side of the square, $4x =$ side of the $\triangle$; then $9x^2 =$ area of the square: and $1 : .7698 :: 9x^2 : 6.9282 x^2 =$ area of the $\triangle$. But $6.9282 x^2 \times 9 x^2 = 62.3538 \times 4 = 6561$ *(per quest.)* therefore, $x = \sqrt[4]{\frac{6516}{623538}} = 3.2027$; hence, $9.6081 =$ side of the $\square$, and $12.8108 =$ side of the $\triangle$, and their contents are respectively $= 92.3193$, and 71.06739.

Anſwers were alſo given by Meſſrs. T. Adcock, S. Banyard, B. Burn, T. Booth, P. Hall, Hidiarium. W. Marſden, D. Sheridan, & T. Todd.

V. QUESTION (18) *anſwered by Mr. Todd, of Darlington.*

In the right angled triangle S A C, there is A 84 B x given, the difference of latitude A S = 100 miles, the departure N E *(at E)* = 84, and E C = 34, to find the diſtance S C ſailed, and the *L* A S C of the courſe. Put X = B C; then, by ſim. Δ^s, B C : C E :: N E : E S = $\frac{2856}{x}$, and *(by* 47 *E.* 1.) $\overline{100}^2 + \overline{84+x}^2 = 34+\frac{2856}{x}^2$, which reduced gives $x^4 + 168 x^3 + 15900 x^2 = 194208 x + 8156736$; which ſolved gives $x = 25.05999727$; and therefore, S C, her diſtance run, = 147.9664 miles, thence, her courſe or *L* A S C = 47° 28′ 53′ whoſe nat. ſine is = .7370587, B E = 22.9781, A C = 109.06, very near; S E = 113.9664, and N S = 77.0218.



The ſame by Mr. George Dixon, Maſter of the Mathematical School, Goſport, Hants.

Put a = 100 = S A, b = 84 = N E, C = 34 = E C, x = S C the whole diſtance run; then, $x - c$ = S E, and by ſimilar triangles we have as $x - c : b :: x : \frac{bx}{x-c}$ = A C, and *(by* 47 *E.* 1*)* $x^2 - a^2 = \frac{b^2 x^2}{x^2 - 2cx + c^2}$, reduced and brought into numbers is, $x^4 - 68 x^3 - 15900 x^2 + 680000 x = 11560000$, ſolved x = 147.966, the diſtance; and the courſe N E ¼ E nearly.

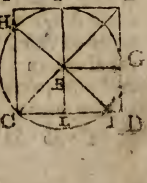
The ſame anſwered by Mr. S. Banyard, of great Yarmouth.

Let a = 100 the diff. of latitude, b = 84 the departure, c = 34 = E C, and x = S N; $\sqrt{x^2+b^2}$ = S E, and $\sqrt{x^2+b^2} : x :: \sqrt{x^2+b^2}+c : a$, or $a\sqrt{x^2+b^2} - x\sqrt{x^2+b^2} = cx$; this eq. ſolved gives x = 77.03 nearly. Then (by trig.) the courſe is found 47. 28′¾, the diſtance S E = 113.9, and S C = 113.9 + 34 = 147.9 nearly.

Solutions were alſo given by Meſſrs. J. Bickford, S Croſs, P. Hall, P. Rowland, W. Swift the propoſer; and many others.

VI. QUESTION (19.) *anſwered by Mancunienſis.*

Conſtruction. Let A B C D repreſent the given ſquare, on B C, take B E, a third proportional to B C + B A, and B C; on E, as a center, with the rad. E C, deſcribe the circle C H F G I, join H I, ſo ſhall H F G I be the greateſt ſemicircle that can be inſcribed in the ſquare A B C D.



Demonſtration. From E, upon A B and B D. let fall the perpendicular F E, and E G; then (by conſtruction) B C + B A : B C : : B E + C E : B E; and, by diviſion, B A : B C : : C E : B E; but by ſim-triangles B A (A C) : B C : : B F (F E) : B E; therefore, B F = F E = C E conſequently, B F is a tang. to the circle. Moreover, becauſe the angle H C I is a right one, the ſegment H C I (Eu. III. 31) is a ſimi-circle, and, conſequently, the remaining ſegment H F G I muſt be a ſemi-circle, and it is alſo the greateſt that can be inſcribed in the given ſquare; for if not, take any greater diam. and on it deſcribe a circle, which if one half of it be inſcribed in the ſquare, muſt touch the former circle in more than one point; which is impoſſible (Eu. III. 13) Q. E. D.

Computation. By Eu. 1. 47, $\sqrt{B A^2 + A C^2} = B C = 56.568542 5$, and *(by Conſtruc.)* B C + B A : B C : : B E + C E : B E = 33.137085; but, B C − B E = 23.431457506 the ſemi-diameter of the circle, and conſequently, the diameter = 46.862915012.

The ſame algebraically, by Mr. John Bickford.

It is evident, the greateſt ſemi-circle that can be inſcribed in the ſquare A B C D *(ſee the above figure)* is ſuch, when the circumference of the circle touches the ſides A B, and B D, and goes through the corner C. Put $a = C B = \sqrt{40)^2 \times 2} = 56.56$, and $x =$ E G, the radius of the ſemi-circle: then $a - x$ = E B, and by ſim. Δ^s. $a - x : x$ (= G B) : : $a : 40 = b$; therefore $a x = b a - b x$, reduced gives $x = \frac{b a}{a + b} = 23.43$.

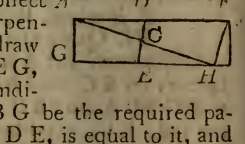
The ſame, by Mr. William Chow.

Let A B C D *(ſee the precedent fig.)* be the ſquare, and from the center of the ſemi-circle, draw E G, and E L ⊥ B D, and C D; then, becauſe the Δ C E I is iſoceles, C E = E I. Put C D = $a = 40$, C L = L E = x, L D = E G = E I = E C = $a - x$; therefore (by E. 47. 1.) $2 x^2 = a^2 - 2 a x + x^2$, and $x = a \sqrt{2} - a = 16.568$; conſequently, 46.864 = diameter.

Other Solutions were given by Meſſrs. P. Hall, J. Hall, the Propoſer.

VII. Question. (20) *Anſwered, by Mancuntienſis.*

Conſtruction. Draw A B = 60, and biſect it in C; make C D = C E = 8, perpendicular to A B; from A, through D, draw A D F, and from B, through E, draw B E G, draw A G, and B F reſpectively perpendicular to A F, and B G; ſo ſhall A F B G be the required parallelogram; for F H draw a parallel to D E, is equal to it, and and alſo perpendicular to A B.

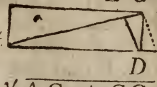


Computation. As A C = 30 : C D = 8 : : rad. : tang. L C A D = 14°. 55'. 53"; and, as rad. · ſine L B A F = 14°. 55'. 53" : : A B

$= 60 : BF = 15.4597$; alſo $\sqrt{AB^2 - BF^2} = AF = 57.9741$, and $BF \times AF = 896.2622$, the area of the parallelogram.

The ſame, by Mr. Thomas Booth, Newark Cotton-Mill.

Let ABCD repreſent the parallelogram. AC the diagonal $= 60$, DE the given line $= 16$, make $AG = AD + EC$, join $CG = ED$; then, in the right angled triangle ACG, is given AC, and GC; then (by E. 47. 1.) $\sqrt{AC^2 + CG^2} = AG = 62.0966$. Alſo $AC \times CG = AG \times CD$; therefore, by ſimilar triangles, $AG : CG :: AC : CD = 15.4595$, and $CG : AC :: CD : AD = 57.97$. Hence, $AD \times CD = 896.193$, the area.



The ſame, algebraically, by Mr. Thomas Adcock.

Put $DE = 16 = a$, $CA = 60 = b$, and $AD = x$; then, by ſimilar $\triangle^s$, as $b : x :: a : \frac{ax}{b} = DC$; and (by 47. *e.* 1.) $x^2 + \frac{a^2x^2}{b^2} = b^2$; whence, $x = \frac{b^2}{\sqrt{b^2 + a^2}} = 57.97$, and $\frac{ax}{b} = 15.45 = DC$; alſo $\frac{ax^2}{b} = 895.6365$, the area.

The ſame, by Mr. J. Knight, Goſport.

Put $a = 16 = DE$, $b = 60 = CA$, and $y = CE$; then $a : y :: b : \frac{by}{a} = AB$ the breadth, and $a : \frac{by}{a} :: b : \frac{b^2y}{a^2} = DA$; then (by 47. E. 1.) $\frac{b^2y^2}{a^2} + \frac{b^4y^2}{a^4} = 3600$; reduced gives $y = \frac{\sqrt{3600}}{211.3164} = 4.122 = CE$; hence, the length is found $= 57.9656$, breadth $= 15.4575$, and area $= 896.0032$. W. W. R.

Solutions were alſo given by Meſſrs. Attwood, Banyard, Chow, Dixon. Eaton, Hall, Hidiarum, Sheridan, Todd, and others.

VIII. QUESTION. (21) *Anſwered, by Mr. Thomas Todd.*

If $n =$ number of payments made to each, $a = 8$, $d = 4$, then A's firſt payment was a, and his laſt was $a + n - 1.d$, the ſum of all his payments in this arithmetical progreſſion is $\frac{na + dn^2 - dn}{2}$; alſo, B received $1 + 2^2 + 3^2 + 4^2 + etc + n^2 = \frac{n^2 + n \times 2n + 1}{6}$ (*S. Alg. p.* 206) $\therefore \frac{n^2 + n \times 2n + 1}{6} = na + \frac{dn^2 - dn}{2}$ *(found above)* or $2n^2 + 3n + 1 = 6a + 3dn - 3d$; $\therefore n^2 + \frac{3n - 3dn}{2} = \frac{6a - 3d - 1}{2} = 17.5$ $\therefore n^2 - 4.5n = 17.5$ ſolved, $n = \frac{9}{4} + \sqrt{\frac{361}{16}} = 7$, the number of payments, when each had received his debt of 140l.

Note. It should have been mentioned, in the question, that each had the same number of payments, without which, the question is not right proposed.

To the Editors of the British Diary.

Sirs. Having proposed a question, in the *Ladies Diary*, 1788, and, the *editor*, *Dr. Hutton*, uncivilly, and very improperly, suppressed the scholium annext to my solution in *L. Diary*, 1789; I think, for no other reason, than it contradicted his crude remarks on equation of payments, in the 5th and 6th editions of his arithmetic; and, therefore, as I was the first that pointed out the *true source of error*, in this long disputed subject, I shall take it very kindly in you, if you'll give place to the above, and the following.

Scholium to *T. Todd*'s solution of question 836 *L. Diary* 1789, thence, we see all these answers, by the three methods, exactly agree, in compound interest; and the reason why they disagree in simple interest, is wholly owing to the unjust principles upon which that interest is founded—the methods themselves are strictly equitable, and scientific; for if we make a false supposition, and reason ever so justly from it, a contradiction, or absurdity, will always come out in the conclusion; which is the very case here. *See* quest. 9 (22) *Bur. Diary* 1777, and my solution to it in the *Diary* for 1778 *page* 39; also, see my solution of a question in the *London Mag. Feb.* 1778, *p.* 60 and 61, which was, in some places, wrong printed, but corrected in p. 104 of *March Mag.* 1778. I am yours, &c. *T. Todd.*

Nearly in the same manner was the solution given by Messrs. Banyard, Bickford, Chow, Cock, Cross the proposer, Dixon, Hall, Jackson, Kite, Low, Mason, Nelson, O'Kelly, Rowly, Sheridan, &c.

IX. Question. (22) *Answered, by Mr. John Bickford.*

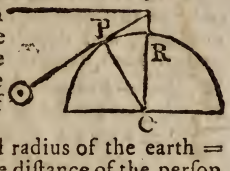
Let a = *nat.* sine of compliment of greater latitude, and n = the co-sine, d = sine co-declination of the sun, and e = the co-sine; also s = sine of comp. of lesser lat. and c = the co-sine, and x = the co-sine of the angle at the pole, or time sought; then, by spherics, $s\,d\,x + c\,e$ = co-sine sun's alt. at the place of the lesser latitude, and $a\,d\,x + n\,e$ = co-sine of the sun's alt. at the place of the greater lat. But $s\,d\,x + c\,e = a\,d\,x + n\,e$; reduced $x = \frac{n-c}{s-a} \times \frac{e}{d} = .51776 = 58°.\ 49'.$ $3h.\ 55m.$ from noon.

The same, by Mr. Patrick Hall, of Denby, Derbyshire.

Let D = the co-sine of the diff. of the two sides of the spheric triangle, formed by the co-sines of the sun's declination, and lat. 30°; B = the same in lat. 50°; s and d the sines, c and e the co-sines of the sun's co-declination, and lat. 30°, b = sine in lat. 50″, and x = the versed sine of the required L, or time from noon, R. 1, then *(per Em. trig. p.* 182, 1 *edit.)* $D - s\,d\,x$ = co-sine sun's alt. in the least lat. and $B - s\,b\,x$ = that in the greatest; and *(per quest.)* $D - s\,d\,x = B - s\,b\,x$; $\therefore x = \frac{D-B}{s\,d - s\,b} = .4822231 = 58°.\ 49' = 3h.\ 55m.$ from noon, W. W. R.

X. QUESTION. (23) *Anſwered, by Mr. Patrick Hall.*

On the given day, the ſun's declination was = 23°. 29′, which ſubtracted from the co-lat. give 14°. 59′, from which take the ſun's ſemi diameter = 16′, and the exceſs is = 14°. 43′, the depreſſion of the ſun's upper limb at *London* on the 21ſt of June. Now, in the △ P C S, there is given, the *L* C = *L* B S P = 14°. 43′, and radius of the earth = 4000 miles = C P = C R; to find C S, the diſtance of the perſon from the earth's center; then *(per plain trig.)* S. *L* P S C : 4000 :: R. : 4135.6761 = C S, ∴ C S — C R = R S 135.6761 miles, W. W. R. *The ſame, by Mancunienſis.*

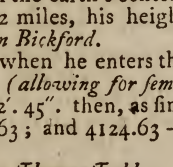


On June 21ſt the midnight depreſſion of the ſun's upper limb at *London*, is 14°. 44′. 13″; or the diſtance from *London* on the arc of a great circle, where a line drawn from the ſun's upper limb to the obſerver's eye, would be a tangent to the earth's ſurface. Now, if this point, the earth's center, and the place of obſervation, be connected, by three right lines, there will be formed a right angled plain triangle, whoſe baſe is the earth's rad. hypothenuſe the obſerver's diſtance from the earth's center, and included angle 14°. 44′. 13″; hence as co-fine 14°. 44′. 13″ : R :: 4000 : 4141.02 miles obſerver's diſtance from the earth's center; and, conſequently, 4141.02 — 4000 = 141.02 miles, his height above its ſurface. *The ſame, by Mr. John Bickford.*

The ſun's depreſſion the 21ſt of June, or when he enters the tropic of cancer, at midnight is 14°. 7′. 15″. *(allowing for ſemidiam. and refraction)* whoſe comp. is 75°. 52′. 45″. then, as fine 75°. 52′. 45″ : earth's rad. 4000 :: R : 4124.63; and 4124.63 — 4000 = 124.63 miles, the height required.

XI. QUESTION. (24) *Anſwered, by Mr. Thomas Todd.*

If $y = a\,b$ the inſide alt. $c = .78539816$, $x = b\,b$, $n = .3$ inch, thickneſs of lead, and $s = 172033.6$, the cubic inches in ten quarters; then $c\,y\,x^2 = s$, $\therefore y = \frac{s}{c\,x^2}$ and $\overline{x+2n}^2 \times c$ = content of cylinder. A D D A (both of lead and grain) which becauſe $c\,y\,x^2 = s$, is conſtant, the above content will be a minimum; and ſo will its logarithm, $2 \times$ log. of $\overline{x+2n}$ + log. of $nc + \frac{s}{x^2}$, whoſe fluxion is $\frac{2\dot{x}}{x+2n} - \frac{2s\dot{x}}{x^3 \times nc + \frac{s}{x^2}} = 0 \therefore \frac{1}{x+2n} = \frac{s}{ncx^3 + sx} \therefore ncx^3 + sx = sx + 2ns$, therefore, $x = \sqrt[3]{\frac{2s}{c}} = 75.94825$, and thence, $y = \frac{s}{c \times \frac{2s}{c}^{\frac{2}{3}}} = \sqrt[3]{\frac{s}{4c}} = 37.97412$ inches, and $2y = x = \sqrt[3]{\frac{8s}{4c}} = \sqrt[3]{\frac{2s}{c}}$, the diameter being equal to twice the height.



The ſame, anſwered by Mr. Patrick Hull.

Put $10 \times 8 \times 2150.42 = 172033.6 = b$, $785398 = a$, $3 = c$, x and $y =$ the internal diameter, and depth; then, the external diameter, and depth, will be $x + 2c$, and $y + c$ reſpectively, we ſhall have, $a x^2 y = b$, the content in inches, and $a \times \overline{x + 2c}^2 \times \overline{y + c} - b =$ a minimum *(per queſt.)* whence, the fluxion $a x^2 y = b = 2 a x \dot{x} y + x^2 \dot{y} = 0$, and that of $a \times \overline{x + 2c}^2 \times \overline{y + c} - b = 2\dot{x} \times \overline{x + 2c} \times \overline{y + c} + \dot{y} \times \overline{x + 2c}^2 = 0$, hence $\dot{y} = -\frac{2y\dot{x}}{x}$ from the former equa. $= -\frac{2\dot{x} \times \overline{y + c}}{x + 2c}$ from the latter, or $\frac{y}{x} = \frac{y + c}{x + 2c}$ $\therefore x = 2y$, whence by ſubſti. $a x^2 \times \frac{x}{2} = b$, and $x = \sqrt[3]{\frac{2b}{a}} = 75.948256$, and $y = 37.974128$.

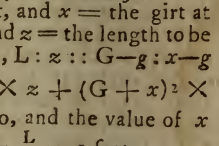
Solutions were alſo given by Meſſrs. Bickford, Chow, Dixon, Eaton Fletcher, Garton, Mancunienſis, Rowland the propoſer, Sheridan.

XII. Question. (25) *Anſwered, by Mancunienſis.*

Put G = the greateſt girt, g = the leaſt, and x = the girt at the ſection; alſo, L = the whole length, and z = the length to be cut off the leſs end; then, by ſimilar figures, $L : z :: G - g : x - g$ hence, $x = \frac{Gz - gz}{L} + g$; but $(g + x)^2 \times z + (G + x)^2 \times (L - z) =$ amax. whoſe fluxion made = 0, and the value of x ſubſtituted inſtead of it, there reſults $z = \frac{L}{2} = 9$ feet.

The ſame, by Mr. Thomas Todd.

If $i\,I = m$, $x = ip$, $d = ii = 2$, D = $ee = 5$, $p = 3.14159265$, $e = 2$, $I\,e = 3 = D - d$; then, by ſim. $\triangle$s $1\,i\,(m) : e\,(2\,I\,e) :: ip\,(x) : \frac{ex}{m} = 2\,I\,p$, $\therefore gg = \frac{ex}{m} + d$;



hence, the mean girt of $igig = \overline{\frac{ex}{m} + d} \times p$, and the mean girt of $gg\,ee$ is $\frac{\overline{\frac{ex}{m} + d} + D}{2} \times p = \overline{\frac{ex}{2m} + s} \times p$ $\left(s = \frac{d + D}{2}\right)$ then, the whole cuſtomary content is $\frac{p^2}{16} \cdot \overline{\frac{ex}{2m} + a}^2 \times x + \frac{p^2}{16} \cdot \overline{\frac{ex}{2m} + s}^2 \times \overline{m - x} =$ a maximum *(per queſt.)* and, therefore, $\overline{\frac{ex}{2m} + d}^2 \times x + \overline{\frac{ex}{2m} + s}^2 \times \overline{m - x}$ a max. In fluxions $2x \times \overline{\frac{ex}{2m} + d} \times \frac{e}{2m} + \dot{x} \times \overline{\frac{ex}{2m} + d}^2 + 2\overline{m - 2x} \times \overline{\frac{ex}{2m} + s} \times \overline{\frac{e\dot{x}}{2m} - \dot{x}} \times \overline{\frac{ex}{2m} + s}^2 = 0$; this expreſſion reduced, gives $x = \frac{d^2 + es - s^2}{2s - 2d - \frac{c}{2}} \times \frac{m}{c} = \frac{m}{2}$ found, by reſtoring the values of e

$(D-d)$ and $s\left(\frac{D+d}{2}\right)$ in the above value of x; therefore, $ig = ge = 9$ feet; the cut muſt be made juſt in the middle of the conic fruſtum

The ſame by Mr. Patrick Hall.

Let G = the greateſt girt $= 5 \times 3.1416$, b = the leaſt $= 2 \times 3.1416$ x = the girt at the ſection, and y = the length to be cut off from the leſs end; then (by E. 47. 1) the length of the timber = 17.937391 which make = a, and, by ſim. figures, $a : y :: G - b : x - b$; hence, $x = \frac{Gy - by + ab}{a}$, and $\dot{x} = \frac{G\dot{y} - b\dot{y}}{a}$; but $\overline{b+x}^2 \times y + \overline{G+x}^2 \times \overline{a-y} = a\text{max}$, or $b^2y + 2bxy + G^2a + 2Gax + ax^2 - G^2y - 2Gxy = a\text{max}$. In fluxions, $b^2\dot{y} + 2bx\dot{y} + 2by\dot{x} + 2Ga\dot{x} + 2ax\dot{x} - G^2\dot{y} - 2Gx\dot{y} - 2Gy\dot{x} = 0$, and, by ſubſtitution, and diviſion, $b^2 + \frac{2Gby - 2b^2y + 2ab^2}{a} + \frac{2Gby - 2b^2y}{a} + \frac{2aG^2 - 2abG}{a} - \frac{2G^2y - 2Gby + 2abG}{a} + \frac{2Gby - 2G^2y}{a} + 2Gy - 2by + 2ab \times \frac{G-b}{a} - G^2 = 0$;

reduced, $y = \frac{ab^2 + aG^2 - 2Gab}{2G^2 + 2b^2 - 4Gb} = 8.968695 = \frac{1}{2}a$; therefore it is obvious the piece of timber muſt be cut in the middle, if meaſured by the cuſtomary method, to make the moſt poſſible.

Solutions were alſo given by Meſſrs. Bickford, Chow, Fletcher, Mancunienſis, Maſon, Nelſon, Rowland the Propoſer.

XIII. QUESTION. (26) *Anſwered, only, by the Propoſer, Mr. William Marſden, Netherhurſt, Derbyſhire.*

The different 2*ds.* in the diatonic ſcale of muſic, are atone minor, tone major, and a ſemi-tone major; being the difference of the intervals 3d. major, 4th, 5th, and 6th major; and of their compliments to the octave, and is found by the multiplication of the terms of their ratios, ſtanding as fractions, upright, and inverted reſpectivly, ſetting the greater interval firſt; as for example, the ratio of a 6th. major is $\frac{3}{5}$; of a 5th. is $\frac{2}{3}$; of a 4th. is $\frac{3}{4}$, of a 3d. major is $\frac{4}{5}$; then, $\frac{3}{5} \times \frac{3}{2} = \frac{9}{10}$ the ratio of a tone minor; $\frac{2}{3} \times \frac{4}{3} = \frac{8}{9}$ the ratio of a tone major; $\frac{3}{4} \times \frac{4}{5} = \frac{15}{16}$ the ratio of a ſemi-tone major; and is found, in like manner, by their compliments, to the octave (whoſe ratio is $\frac{1}{2}$); thus $\frac{1}{2} \times \frac{3}{5} = \frac{3}{10}$; $\frac{1}{2} \times \frac{2}{3} = \frac{2}{6}$; and $\frac{3}{10} \times \frac{6}{2} = \frac{9}{10}$; alſo, $\frac{1}{2} \times \frac{2}{3} = \frac{2}{6}$; $\frac{1}{2} \times \frac{3}{4} = \frac{3}{8}$, and $\frac{2}{6} \times \frac{8}{3} = \frac{16}{18} = \frac{8}{9}$. Again, $\frac{1}{2} \times \frac{3}{4} = \frac{3}{8}$; $\frac{1}{2} \times \frac{4}{5} = \frac{4}{10}$, and $\frac{3}{8} \times \frac{10}{4} = \frac{30}{32} = \frac{15}{16}$, the three 2*ds.* as above W. W. R.

XIV. QUESTION. (27) *Anſwered, by Mr. Thomas Todd.*

If 4 feet = a, $w = 5$ *tib* (bob) $d = 16\frac{1}{12}$ feet, t = ſeconds, time of one revolution, x = height fallen, C = 3.14159265; then,

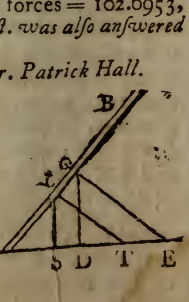
$\sqrt{d} : 12d :: \sqrt{x} : \sqrt{\frac{x}{d}}$ = ſeconds in falling xs height; and $\sqrt{d} : 2d :: \sqrt{x} : 2\sqrt{dx}$, the uniform velocity acquired by falling thro' xs height. And *(By Simſon's fluxions, p. 242.)* if the time of revolution in any circle, whoſe radius is a, be denoted by t ſeconds, then, $\frac{\frac{r}{2ccr}\left(\frac{d}{2C^2}\right)}{d} : \frac{a}{t^2} :: w$ *(gravity of a body* w*)* : $\frac{2c^2aw}{dt^2}$ its centrifugal force, by which the ball endeavours to fly off; but *(by queſt.)* $t = \frac{1}{3}\sqrt{\frac{x}{d}}$ $\therefore t^2 = \frac{64d}{x}$; but $\frac{2c^2aw}{dt^2}$ will become $= \frac{128c^2aw}{x}$; therefore *(by queſt.)* $\frac{1}{2}$ *tib.* wt. $\times 2\sqrt{dx} : \frac{128c^2w}{x} :: 8 : 3 \therefore 3\sqrt{dx} = \frac{1024c^2aw}{x}$; and $9dx^3 = \overline{1024}^2 \times c^4a^2w^2 \therefore x^3 = \frac{\overline{1024}^2 \times c^4a^2w^2}{9d} \therefore x = 655.97$ feet, $\sqrt{dx} = 102.71$, and $\frac{128c^2aw}{x} = 38.517$, hence, $102.71 : 38.517 :: 8 : 3$ nearly. Alſo, the time of decent of the ball $= \sqrt{\frac{x}{d}} = 6.3863$ ſeconds; and $\frac{1}{3}$ of this $= .7983$ ſeconds t, the time of one revolution of the ſling.

The ſame, by Mr. S. Croſs, the Propoſer.

Put $b = 3,1416$, $s = 16\frac{1}{12}$ feet, $m = 5$ *tib.* $n = \frac{1}{2}$ *tib*, $w = 4$ feet, $d = \frac{1}{16}$, and $x =$ time, in ſeconds, of the falling body; then $12 : s :: x^2 : sx^2 =$ the ſpace deſcended by the falling body; and $s\frac{1}{2} : 2s :: x \times s\frac{1}{2} : 2sx =$ the velocity of the ſame; whence, $2snx =$ the abſolute force of the ſame at the earth. Again, by the laws of centripetal forces, we have $\frac{2p^2wm}{sd^2x^2} =$ the force of the ball in the circle; then *(per queſt.)* $2snx : \frac{2p^2wm}{sd^2x^2} :: 8 : 3$; hence, $x = \sqrt[3]{\frac{8wmp^2}{2s^2d^2n}} = 6.3852$ ſeconds; whence, the required height will be found $= 655.73$ feet, and the forces $= 102.6953$, and 38.5107 lb. avoir. reſpectively. *This queſt. was alſo anſwered by Mr. P. Hall.*

XV. Question. (28) *Anſwered, by Mr. Patrick Hall.*

Let C B be the cylinder of copper, whoſe weight, by ſpecific gravities, $= 1278.304036$ lb. avoir. which make $= w$, C E the horizon, and G the center of gravity of the cylinder. Now, if x denote the L of elevation, C G $= 25$ inches $= b$, and C S $= 8 = a$; then *(per Mechan.)* C G : C D :: $w : \frac{CD}{CG} \times w$, the force at G,



in the direction G E, in a perpendicular direction to the cylinder C B; and, C L : C G :: $\frac{C D}{C G} \times w$: $\frac{C D \times w}{C L}$ the force at L, in the direction L T. Again *(per trig.)* as (R) 1 : b :: *(ſine* L C G D) $\sqrt{1-x^2} : b\sqrt{1-x^2} =$ C D, and (S. L C L S) $\sqrt{1-x}$: (C S) a :: (R) 1 : C L $= \frac{a}{\sqrt{1-x^2}}$; then, by ſubſtituting the values of C D, C L, in the above expreſſion, we have, $b\sqrt{1-x^2} \div \frac{a}{\sqrt{1-x}} = \frac{b \times \sqrt{1-x^2}}{a} \times w$, the force at L, in the direction L T.

Now, to find the force of the cylinder in the direction L S, we have, a : $\frac{a}{\sqrt{1-x^2}}$ :: $\frac{b \times \sqrt{1-x^2} \times w}{a}$: $\frac{b\sqrt{1-x^2} \times w}{a}$ = the force in the direction L S; therefore, $w \times \frac{b \times \sqrt{1-x^2}}{a} - w \times \frac{b\sqrt{1-x^2}}{a}$ = amax. *(per queſt.)* or $\sqrt{1-x^2} - \sqrt{1-x^2}$ = amax.

the fluxion of which, made = o, &c. $x = \sqrt{\frac{3}{4}}$ = ſine of 60°, the L of elevation required. Then *(per trig.)* the length of the ſuporters are = to 13.856, and 27.712 inches, and reſpective preſſures 1997.35, and 998.675 lb. avoir.

The ſame, by Mechanics Frozzen.

Let C B be the cylinder *(ſee the proceeding fig.)* G the center of gravity, diſtant from C 25 inches = n, the weight of the cylinder 1278.305 lb. avoir. = w, C S = 8 = a, and x = co-ſine of the required angle of elevation to rad. 1; then *(by Mech.)* 1 : w :: x : wx the preſſure at G, in direction G E; and *(by trig.)* $x : a :: 1 : \frac{a}{x}$ = C L; alſo $\frac{a}{x} : n :: wx : \frac{nwx^2}{a}$ the preſſure at L, upon the ſupport L T in direction L T; and as $a : \frac{a}{x} :: \frac{nwx^2}{a} : \frac{nwx}{a}$ the preſſure at L upon L S in direction L S; therefore, $\frac{nwx^2}{a} - \frac{nwx}{a}$ = amax. *(per queſt.)*, or $x^2 - x$ = amax. in fluxions $2x\dot{x} - \dot{x} = o$; whence, $x = .5$ the nat. co-ſine of 60° the required angle of elevation; hence, L T = 27.717, L S = 13.836, and the preſſure upon L T = 998.675, and that upon L S = 1997.35 lb. avoir. = double the preſſure upon L T.

XVI. Queſtion, (29) *Prize anſwered, by the Propoſer.*

An eaſy approximation to a ſolution of this queſtion, may be thus obtained. Let b = the area of the baſe, n = the area of the aperture in the bottom, $m = 32\frac{1}{5}$ feet 386 inches,

and a = the altitude of the veſſel; then *(by Dr. Hutt. Miſ. Mat.)* we have $\frac{2b}{n} \times \frac{\sqrt{a} - \sqrt{\frac{a}{2}}}{\sqrt{m}} = \frac{288}{1} \times \frac{\sqrt{20} - \sqrt{10}}{\sqrt{386}} = 19.35072$ ſeconds the time of emptying half the veſſel. And *(per ward)* the weight of the water in the veſſel is 1308.99 oz. avoirdu. three fourths of which is 981.77. Now *(per Mechanics)* the ſpace is as $\frac{F t^2}{5}$ for uniformly accelerated motion. Let $b = 16\frac{1}{12}$ the feet deſcribed in a ſecond, by a body falling freely, $a = 1308.99$, $s = b$. Alſo, in the two bodies, x = ſpace deſcribed in a ſecond, and $F = a - b = 1308.99 - 981.74 = 327.25$, and $b = a + b = 2290.73$; therefore, $b : \frac{a\,t^2}{a} :: x : \frac{a-b}{a+b} \times t^2$, whence, $x = \frac{a-b}{a+b} \times b = 2.2976$ feet, the ſpace the veſſel will be drawn up by the weight in one ſecond; and $19.35072^2 \times 2.2976 = 860.297$ feet, the ſpace through which the veſſel will be drawn by the weight. W. W. R.

A corrected Solution to the 7th Queſtion in B. Diary for 1788, *page* 36.

Let A D = D C = 6 = a, D $n = x$ *(See Mr. Fiſher's fig. p.* 36*)* and .7854 = m; then, $\overline{a+x}^2 \times m$ = area of the quadrant m n A; and *(by the circles property)* $\sqrt{2ax + x^2} = D v$; therefore, $\frac{\frac{7}{3}\overline{a+x}^2 - \frac{4}{3}\overline{a^2 + ax} - a^2}{\frac{3}{2}\overline{a+x} + a} \times \frac{1}{2}\sqrt{2ax + x^2}$ = the area D v n, *(by Ward's Math. Guide, p.* 412*)*; conſequently $\overline{a+x}^2 \times m = a_2 + \frac{7}{3}\frac{a + x^2 - \frac{4}{3}\overline{a^2 + ax} - a^2}{\frac{3}{2}\overline{a+x} + a} \times \frac{1}{2}\sqrt{2ax + x^2}$; whence, $x = .993843$, and the radius = 6.993843 inches. But, to ſave the trouble of ſolving ſuch an equation; ſuppoſe D v n, a ſemi-parabola; then, the equation above becomes, $\overline{a+x}^2 \times m = \frac{2}{3}x\sqrt{2ax + x^2} + a^2$; put $\sqrt{2ax + x^2} = y = D v$, and aſſume $4x = y$, *(near the truth)* and, the equation becomes $\overline{y^2 + a^2} \times m = \frac{y^2}{6} + a^2$; whence $y = .589$ *(a being* = 1*)* and from $y^2 = 2ax + x^2$, $x = .16$; put this value of x in the former equation, inſtead of aſſuming $y = 4x$, and the equation corrected is $y^2 - \frac{.32\,y}{3m} = \frac{1}{m} - 1$; whence, $y = .595 = D v$; therefore, $x = .1636 = D n$, and D n : D v :: .1636 : .595 :: 1 : 3.6369, which is exact enough, in moſt caſes, hence this eaſy. *Solution.* Put D $n = x$, A D = 6 = a, and $3.6369 = b$; then $2ax + x^2 = b_2 x_2 \therefore x = \frac{2a}{b-1}$, and $a + \frac{2a}{b-1} = 6.9814 = A n$ the radius of the circle.

NEW QUESTIONS to be answered in next Year's DIARY.

I. QUESTION. (30) *By Mr. Daniel Sheridan, Bilston.*

A blooming fair, attracts my inmost soul,
With sweet vivacity, her eye-balls roll;
Her lovely glancing, captivates each heart,
And ardent joy, does to each swain impart.
The argent neck, with pendant tresses grac'd,
Alacrity, is thro' each feature trac'd,
With lovely red, her cheeks divinely glow,
And, roseate bloom upon her aspect show.
Her height, age, fortune, you, with ease, may find,
From these three datas, underneath subjoin'd.

$$\left.\begin{array}{l} \dfrac{x^2\,y^2+z^2}{} = 245000 + x\,y\,z \\ \dfrac{z}{x+y} = 6.25 \\ x\,y+z = 1700 \end{array}\right\} \text{Where } x = \text{her age in years, } y = \text{her height in inches, and } z = \text{her fortune in pounds.}$$

II. QUESTION. (31) *By Mr. Thomas Booth, Newark Cotton-Mill.*

Kind algebra'sts, unto the world declare,
The condescension of my charming fair;
To whom my suit, these many years, I've paid,
Still, hoping to possess, the lovely maid.
You'll find, at last, what she consented to,
From three equations given here below.

$$\left.\begin{array}{l} x+y+z = 32 \\ x^2+y^2+z^2 = 570 \\ x\,y+x\,z+9\,y\,z+13 = y^2\ z^2 \end{array}\right\} \text{Where } x,\ y, \text{ and } z \text{ denote the places of the letters in the alphabet that compose the word.}$$

III. QUESTION. (32) *By Mancunienſis.*

Hail! soother of our ev'ry care,
And sweet'ner of our joy;
Thou greatest blessings, angels know,
Or mortals can enjoy.
Still deign t'exert, thy glorious sway,
In Britain's blooming fair;
Nor let Britann'a's sons be void,
Of thy secur'ar care.
This blest, this noblest gift of heav'n,
Diar'ans would ye know.
Pray solve th'equations which you see,
In symbols plac'd below.

$$\left.\begin{array}{l} x\,y+w\,z+2\,w\,x = 471 \\ \dfrac{v\,x\,y-y\,z\,x^2}{w}+2\,v\,x-x\,z^2+x\,y+w\,z- \\ \quad 2\,z\,x^2+2\,w\,x = -1784\frac{1}{13} \\ \dfrac{2\,v\,w\,x+v\,x\,y}{z}+v\,w = 847.8 \\ \dfrac{v-x\,z}{w} = -4\frac{9}{13} \\ x\,y\,w+x\,y\,v\,z+z\,w^2+w\,v\,z^2+2\,x\,w^2+ \\ \quad 2\,w\,v\,z\,x = 27318 \end{array}\right\} \text{the Value of} \left\{\begin{array}{l} v.\ 1 \\ w.\ 2.3.7 \\ x.\ 4 \\ y.\ 5.\ 3 \\ z.\ 6.\ 9. \end{array}\right.$$

The figures shews the letters places in the alphabet which compose the required word.

IV. QUESTION. (33) *By Mr. William Chow.*

A ball being projected from the top of a tower 100 feet high, at an elevation of 33 degrees above the horizon, fell 1800 feet from the tower's baſe; required the time of flight?

V. QUESTION. (34) *By Mr. William Marſden, of Netherhurſt.*

Out of a caſk of brandy, containing 101.25 gallons, a certain quantity was drawn out, and the caſk filled again with water; and after four ſuch exhauſtions *(the caſk being filled with water between each time)* there was, at laſt, found 20 gallons of brandy in it; what quantity of brandy was drawn out each time?

VI. QUESTION. (35) *By Mr. George Dixon, Maſter of the Mathematical School, Goſport, Hants.*

As thro' the flow'ry lawns, I took my way,
To view each ſcene, and action of the day;
Where fragrant flowers, did the air perfume,
Afluſh'd the ſpirits, with a roſy bloom.
Having no watch, my mind led me to try,
Whether, or no, that dinner time was nigh;
To gain this end, I plac'd my cane upright,
(The ſun, juſt then, was beautiful and bright.)
Upon a true, and horizontal plane,
The ſhadows length, exactly to obtain;
Which being done, I found the ſame to be,
To the cane's length, as two is unto three.
Near *Goſport* * town, I did this project try, * *Lat.* 50°. 48′ n.
On May the tenth, as I could beſt deſcry;
And from this data, beg that you will find,
(If to aſtronomy, you are inclin'd)
What time it was, when I this method took,
And it record, in *Britiſh Diary*'s book;
Tell me alſo, upon what point, the ſun
Did riſe, and ſet, and was juſt then upon.
The time he feebly ting'd, the eaſtern ſky,
When night, and darkneſs both, were made to fly;
Theſe ſtereographically projected,
And prov'd, by calculation, are expected.
And when you have, theſe things compleatly done,
The *laurel*, ſafely, ſhall be call'd your own.

VII. QUESTION. (36) *By Mancunienſis.*

Four ſhips, A, B, C, and D, ſail from a port in 4°. 30′. N. lat. the ſhip A ſails ſoutherly a certain diſtance unknown, the ſhips B, C, and D, ſail between the ſouth and eaſt, B, 300 miles, C 450 miles, and D a certain diſtance unknown, and then find themſelves in four different ports all upon the equator: the diſtance between the firſt and third ports, is equal to the diſtance

between the third and fourth ; and the angle made by the firſt and ſecond ſhips courſes, is equal to that made by the ſecond and fourth ; required the courſes ſteered by each ſhip, the diſtance of the ports, and the number of miles the firſt and laſt ſhip ſailed ; without having recourſe to algebra.

VIII. QUESTION. (37) *By Mr. J. Knight, Goſport.*

In the triangle A B C, is given the baſe A B = 100, line biſecting the vertical angle C D = 40, line drawn from the point of interſection of d°. with the baſe || to the longeſt ſide, viz. D E = 30 ; to determine the ſides, and ſegments of the baſe ?

IX. QUESTION. (38) *By Mancunienſis.*

Given the angles at the baſe, and the ſum of the three ſides of any plane triangle ; to conſtruct it ?

X. QUESTION. (39) *By Mr. S. Banyard, Great Yarmouth.*

In a gentleman's park is a ſtraight fence of a garden 23 chains in length, and at right angles to one end thereof ſtands a tree at the diſtance of 19.8 chains ; alſo at right angles to the other end, at the diſtance of 28.4 chains ſtands another tree. He is deſirous of having two ranges of pales from the trees to meet at the garden fence, ſo that the angle included by the pales may be the greateſt poſſible ; required the point in the fence where the pales will meet, by geometry ?

XI. QUESTION. (40) *By Mr. John Bickford, Gray-Coat Hoſpital, Weſtminſter.*

Given the time a ball is falling down the ſlant ſide of a cone = 2 ſeconds ; required the diameter of the baſe, and perpendicular altitude, when the ſolidity is a maximum ?

XII. QUESTION. (41) *By Mancunienſis.*

To find an angle, the tripple of which ſhall be a maximum ?

XIII. QUESTION. (42) *By Mr. William Chow.*

There are two lamps 40 yards diſtant, whoſe lights are in the ratio of 2 to 1 : required the place in a line betwixt them, where the light is the leaſt poſſible ?

XIV. QUESTION. (43) *By Mercurius, of Denby.*

Given $y4 - x2\,y4 = x2\,a2$, an equation to a curve ; to find its area ?

XV. QUESTION. (44) *By Mr. R. Waugh.*

Required the fluent of $\frac{\dot{z}}{\sqrt{\log \frac{1}{z}}}$

XVI. Prize Question. (45) *By Mr. Thomas Todd.*

To determine that right angled ſemi-parabola that will circumſcribe a given circle, when the abſciſſa is equal to its greateſt ordinate; and alſo to find the right angled triangled which will circumſcribe both theſe figures?

The Prizes, for the ſeveral ſolutions, have been determined by lot as follows: firſt, for the prize queſtion, to *Mechanics Frozzen* 12 *Diaries*.—2d. For the prize *Enigma* to *Mancunienſis* 6 *Diaries*.—3d. For the general anſwer to the *Enigmas* to *Mr. John Sankey*, and *Automathicus* 6 *Diaries each*.—4th. For rebuſes, &c. to *Mr. Charles Metcalf* 6 *Diaries*. All of whom will pleaſe to ſend for them to *Mr. Pearſon*, printer, in *Birmingham*.

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The Authors return unfeigned thanks to all their kind contributors, ſtill intreating the continuance of their favours, and that they will always ſend ſolutions at large to whatever they propoſe, whether in the mathematical, or the poetical way.

All letters for the uſe of this Diary, are deſired to be directed thus, "For John Coles and George Taylor, to be left with Mr. Joſeph Peet, High-pavement, Nottingham (poſt paid) to come to hand by the firſt of May.

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Ridley's Pills, for Aſthmas, &c. - - 2s. od.
Radcliffe's Elixir, for the Scurvy, Jaundice, &c. 1s. 1½d.
Steer's Opodeldoc, for Sprains, Chilblains, &c. 2s. od.
Stoughton's Elixir, for Complaints at the Stomach, 1s 1½d.
Spilſbury's Drops, for the Scurvy, Gout, &c. 5s. od.
Speediman's Stomach Pills, - - - 2s. od.
Smyth's Drops, for the Venereal Diſeaſe, 2s. 8d. and 5s. 6d.
——— Reſtorative Medicine, for Gleets, &c. 11s. od.
Swinfen's Electuary, for the Stone and Gravel, 2s. 9d.
Squire's Grand Elixir, for Catarrhs, Aſthmas, &c. 1s 1½d.
uj ah's Blacking Balls, for Shoes and Boots, 6d. and 1s. od.
S ſtleſs Ague and Fever Drops, - - - 2s. 8d.
Te original Daffy's Elixir, prepared by Dicey & Co. 1s. 6d.
Tha Genuine Salt of Lemons, for taking Ironmoulds
The and Stains out of Linen, - - 1s. od.
Warren's infallible Horſes Cordial, for the Staggers and Gripes in horſes, - - 2s. od.
Walker's Jeſuits Drops, for the Venereal Diſeaſe, 2s. 8d.