

THE
Gentleman's Diary,

OR, THE
MATHEMATICAL REPOSITORY;
AN ALMANACK

FOR THE YEAR OF OUR LORD

1816:

BEING

BISSEXTILE OR LEAP-YEAR.

Containing many useful and entertaining Particulars,
peculiarly adapted to the ingenious Gentlemen engaged in
the delightful Study and Practice of the

MATHEMATICKS.

The Seventy-sixth ALMANACK published of this Kind;
and the Sixty-sixth of the NEW STYLE in ENGLAND.

With wise Intent
The Hand of Nature on peculiar Manners
Imprints a different Bias; and to each
Decrees its Province in the common Task
To some she taught the Fabrick of the World
The changeful Moon, the Circuit of the Stars
The golden Zones of Heaven: to some she gave
To weigh the Moment of Eternal Things
Of Time, and Space, and Fate's unbroke'n Chain;
And Will's quick Impulse.



LONDON:

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And Sold by GEORGE GREENMILL, Treasurer to the Company,
at their Hall, LUDGATE STREET. 1816.

[Price Two Shillings and Three Pence attached.]

ECLIPSES, 1816.

1777 and 1778

Four; viz. Two of the Sun, and two of the Moon.

1st. *May 27th.* An eclipse of the Sun invisible at Greenwich. The Sun will be centrally eclipsed on the meridian at 2h. 48m. in the morning, in lat. $58^{\circ} 52'$ S. lon. $138^{\circ} 26'$ E.

2d. *June 9th and 10th.* An eclipse of the Moon. Beginning of eclipse 11h. 30m. P. M. Beginning of total darkness 6h. 39m. A. M. Middle of the Eclipse 1h. 15m. Ecliptic opposition 1h. 19m. End of total darkness 1h. 51m. End of the Eclipse, 3h. Digits eclipsed $14^{\circ} 56'$ from South side of the Sun's shadow.

3d. *November 19th.* A visible eclipse of the Sun. Beginning of the eclipse 8h. 18m. morning. Greatest obscuration 9h. 34m. Visible conjunction 10h. 23m. End 10h. 34m. Digits eclipsed $9^{\circ} 23'$ on the North limb. ☽ makes first impression on Sun's disk at 59° from his vertex on the right hand.

4th. *December 4th.* Another visible eclipse of the Moon. Beginning of the Eclipse 7h. 15m. afternoon. Middle 8h. 44m. Ecliptic opposition 8h. 51m. End of the Eclipse 10h. 14m. Digits eclipsed 8d on ☽'s South limb.

Venus will be a *Morning star* till the 31st of July; then an *Evening star* to the Year's end.

JUPITER will be a *Morning star* till the 25th of April; then an *Evening star* till the 13th of November; afterwards a *Morning star* to the end of the Year.

*** The last column in each page of the Calendar shews the mean height of the Barometer and of Fahrenheit's Thermometer, near London, on each day in the year 1814.

The Editor begs to thank Mr. Reynard for presenting him with a copy of his work entitled *Geometria Legitima*.

Mr. Professor Leybourn's republication of the Mathematical parts of the *Ladies' Diary*, up to the present time, in four 8vo volumes, will be published about the end of the year. No. 14 of his *Mathematical Repository* is just published.

Some poetical compositions, which would otherwise have been inserted, were omitted on account of the strong political allusions they contained. Politics is a troubled sea, upon which it is better that *Di-*

Some of the Enigmas now inserted have lain by us for years: we mention this, that such Correspondents as think themselves neglected may not despair. We are anxious to oblige all.

Letters must, as usual, be franked or post-paid, directed To the Author of the *Gentleman's Diary*, Stationers' Hall, London, and arrive before the 1st of May 1816.

JANUARY hath XXXI Days.

First Quarter	7	Day at	6 h. 41 m. Afternoon.	M	Decl.
Full Moon	15		18 Morning.	D	South.
Last Quarter	21		18 Afternoon.	1	25 5
New Moon	29		8 50 Morning.	6	22 36
(C) enters 22d Day, at 9 h. 11 m. Morning.				17	21 36
				16	21 6
				21	20 5
				26	18 55

1	M	Equinox.	5 a 37	1 a 37	2	30 0-25 5
2	F	Rain in Jan. 1814, 4' 01 inc.	6 43	2 25	3	29 8-30 0
3	S		7 50	3 10	4	29 6-31 0
4	T	Day 7 h. 58 m. long.	8 58	3 53	5	29 4-29 0
5	F	R. B. P. D.	10 6	4 35	6	29 1-32 5
6	S		11 13	5 15	7	29 3-24 5
7	M	Lucian. Plough Monday.	morn.	5 56	8	29 6-19 5
8	T		0 21	6 37	9	29 7-21 5
9	W	Abp. Laud beheaded, 1645.	1 30	7 21	10	29 7-18 5
10	T	Sir Hans Sloane died, 1752.	2 42	8 8	11	29 7-21 0
11	F		3 57	9 0	12	30 8-22 0
12	S	Hilary, Cam. Term begins.	5 14	9 56	13	29 8-22 5
13	M	Oxf. Term b.	6 28	10 56	14	29 4-25 5
14	T	Pondicherry surrendered.	7 40	11 58	15	29 4-27 0
15	F	Sir John Moore slain.	D rises. morn.		F	29 2-20 5
16	S	Battle of Falkirk, 1746.	6 a 1	1 0	17	29 4-27 0
17	T	St. Hilary's Day. k. Prisca.	7 27	2 0	18	29 2-20 5
18	F		8 52	2 56	19	29 1-33 0
19	S	Fabian. In 8d. of St. Hil. 1 r.	10 16	3 49	20	29 2-31 0
20	M	Agnes.	11 38	4 39	21	29 6-23 5
21	T	Vincent.	morn.	5 28	22	29 7-19 5
22	F	Hilary Term begins.	0 57	6 16	23	29 8-20 0
23	S	Fire at Custom House, 1715.	2 15	7 5	24	29 7-25 0
24	T	Conversion of St. Paul.	3 31	7 55	25	29 8-29 5
25	F	[in 15 d. & ret.	4 43	8 46	26	29 7-28 0
26	S	St. of Sussex b. Fr. St. Hil.	5 48	9 38	27	29 4-34 5
27	M	St. John after Baptism.	6 44	10 30	28	21 1-36 0
28	T		7 29	11 21	29	28 3-34 0
29	F		D sets. aft.		10	N 28 3-36 5
30	S		5 a 30	0 57	1	29 1-32 5
31	M	St. Charles L. mart. 1613.	6 39	1 41	2	29 6-32 0

D	☉ Rises	☉ Sets.	☉ Cl. bef. ☉	D. Br.	Sun E.	Saturn S.	Jupiter S.	Mars S.
1	8 5	3 55	3 35	6 0	41	2 a 10	7 m 32	6 a 38
2	8 1	3 53	5 54	5 58	43	1 30	7 13	6 44
3	7 56	4 4	8 2	54	46	1 31	6 54	6 49
4	7 51	4 9	9 54	49	50	1 12	6 35	6 15
5	7 45	4 15	11 30	44	54	0 53	6 16	6 9
6	7 37	4 23	12 47	38	58	0 34	5 57	5 54

2006-07

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Aug, 1914.

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South Highb.

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end of the year

on each day.

Mr. Pratt

Some no

CHURCH

Letters m

1st of May

JANUARY hath XXXI Days.

M	Decl.
D	South.
1	23° 5'
6	22° 36'
11	21° 56'
16	21° 4'
21	20° 5'
26	18° 55'

First Quarter	7	} Day at	6 h. 47 m.	Afternoon.
Full Moon	15		1 18	Morning.
Last Quarter	21		4 14	Afternoon.
New Moon	29		8 50	Morning.

☉ rises 21st Day, at 9 P. 11 M. Morning.

1 M	St. Michael's.	5 a 37	1 a 37	2 30	0-25 5
2 F	Rain in Jan. 1814, 4.01 inc.	6 43	2 25	3 29	8-30 0
3 W		7 50	3 10	4 29	6-31 0
4 T	Day 7 h. 58 m. long.	8 58	3 53	5 29	4-29 0
5 F	R. B. P. D.	10 6	4 35	6 29	1-32 5
6 S		11 13	5 15	7 29	3-24 5
7 M	St. Andrew's. Pr. Ch. of N. b.	morn.	5 56	8 29	6-19 5
8 M	Lucian. Plough Monday.	0 21	6 37	9 29	7-21 5
9 T		1 30	7 21	10 29	7-18 5
10 W	Abp. Laud beheaded, 1645.	2 42	8 8	11 29	7-21 0
11 T	Sir Hans Sloane died, 1752.	3 57	9 0	12 30	8-22 0
12 F		5 14	9 56	13 29	8-22 5
13 S	Hilary. Cam. Term begins.	6 28	10 56	14 29	4-25 5
14 M	S. Oxf. Term b.	7 40	11 53	15 29	4-27 0
15 M	Pondicherry surrendered.	☉ rises. morn.		F	29 2-20 5
16 T	Sir John Moore slain.	6 a 1	1 0	17 29	4-27 0
17 W	Battle of Falkirk, 1746.	7 27	2 0	18 29	2-20 5
18 T	St. Ch. birth of St. Prisca.	8 52	2 56	19 29	1-33 0
19 F		10 16	3 49	20 29	2-31 0
20 S	Fabian. In 8d. of St. Hil. 1 r.	11 38	4 39	21 29	6-23 5
21 M	St. Agnes.	morn.	5 28	22 29	7-19 5
22 M	Vincent.	0 57	6 16	23 29	8-20 0
23 T	Hilary Term begins.	2 15	7 5	24 29	7-25 0
24 W	Fire at Custom House, 1715.	3 31	7 55	25 29	8-29 5
25 T	Conversion of St. Paul.	4 43	8 46	26 29	7-28 0
26 F	[in 15 d. 2 ret.	5 48	9 38	27 29	4-34 5
27 S	St. Andrew's. Fr. St. Hil.	6 44	10 30	28 21	1-36 0
28 C	St. Andrew's. Epiphany.	7 29	11 21	29 28	3-34 0
29 M		☉ sets. aft. 10		N	28 3-36 5
30 T		5 a 30	0 57	1 29	1-32 5
31 W	St. Charles L. mart. 1610.	6 39	1 41	2 29	6-32 0

D	☉ Rises	☉ Sets.	Cl. bef. ☉	D. Br.	Sun E.	Saturn S.	Jupiter S.	Mars S.
1	8 5	3 55	3 35	6 0	4 41	2 a 10	7 m 32	6 a 58
2	8 1	3 59	5 54	5 58	43	1 50	7 13	6 44
11	7 56	4 4	8 2	54	46	1 31	6 54	6 49
16	7 51	4 9	9 54	49	50	1 12	6 35	6 15
21	7 45	4 15	11 00	44	54	0 53	6 16	6 2
26	7 37	4 23	12 47	38	58	0 34	5 57	5 54

APRIL hath XXX Days and 7 A M Decl. North.

First Quarter	5	Day at	4 h. 22 m.	Afternoon.	1	48	37
Full Moon	12		6 43	Morning.	6	6	34
Last Quarter	19		9 38	Morning.	11	8	23
New Moon	27		1 31	Afternoon.	16	10	11

☾ sets 8 20th Day, at 5 H. 49 M. Morning.

1 M	Rain in April 1814, 1'35 inc.	10 a 31	2 42	4 29	4-51	0
2 T		11 44	3 31	5 29	4-48	5
3 W	Richard Bp. of Chichester.	morn.	4 23	6 29	5-44	5
4 T	St. Ambrose.	0 56	5 19	7 29	6-46	0
5 F	Camb. Term ends.	2 0	6 16	8 29	8-48	5
6 S	Oxf. Term ends.	2 53	7 15	9 29	9-49	5
7 P	1st Sun. in Lent. Palm S.	3 38	8 13	10 30	1-52	0
8 M	Edward IV. died, 1483.	4 11	9 10	11 30	2-47	5
9 T		4 38	10 5	12 30	1-48	6
10 W	Day 13h. 34 m. long.	5 0	10 59	13 30	1-53	0
11 T	Maundy Thursday.	5 20	11 52	14 29	9-49	0
12 F	Good Friday.	D rises.	morn.	F 29	8-55	0
13 S		8 a 53	0 45	16 29	7-58	0
14 P	Easter Day.	10 9	1 39	17 29	6-56	5
15 M	Easter Monday.	11 28	2 34	18 29	4-57	5
16 T	Easter Tuesday.	morn.	3 29	19 29	3-56	0
17 W		0 40	4 26	20 29	4-51	0
18 T		1 40	5 20	21 29	5-52	5
19 F	Alphege.	2 25	6 13	22 29	6-53	5
20 S		3 2	7 3	23 29	6-58	0
21 F	1st Sun. af Easter. Low S	3 27	7 50	24 29	7-50	5
22 M	Henry VII. died, 1509.	3 43	8 34	25 29	8-46	0
23 T	St. George.	4 5	9 16	26 29	8-50	5
24 W	Oxf. and Camb. Terms b.	4 21	9 57	27 29	8-48	0
25 T	St. Mark. Pres. Mary born.	4 35	10 38	28 29	6-45	5
26 F		4 49	11 19	29 30	0-44	0
27 S		D sets.	aft. 2	N 30	1-48	5
28 F	2d Sunday after Easter.	8 a 28	0 47	1 30	1-47	5
29 M	From East. in 15 days 1 r.	9 41	1 35	2 30	0-53	0
30 T	Battle of Fontenoy, 1745.	10 54	2 26	3 30	0-53	0

D	☉ Rises.	☉ Sets.	CL bef. ☉	D. Br.	Sun. E.	Saturn S	Jupiter S	Mars S
1	5 30	6 30	3' 57"	3 33	6 15	8 m 53	1 m 44	4 a 18
6	5 21	6 39	2 28	21	21	8 35	1 24	4 13
11	5 12	6 48	1 3	6	27	8 18	1 4	4 7
16	5 2	6 58	aft. 15	2 54	33	8 1	0 43	4 2
21	4 53	7 7	1 23	40	39	7 45	0 22	3 57
26	4 44	7 16	2 20	25	44	7 28	11 a 56	3 52

Decl. South.	Decl. North.	MARCH	XXXI	Days	YEAR	Decl. South.
0	1	First Quarter	44	55	m. Morning.	19
1	2	Full Moon	9	44	Afternoon.	15
2	3	Last Quarter	5	44	Afternoon.	10
3	4	New Moon	9	27	Afternoon.	16
4	5	Sun rises up 20th Day, at 5 H. 9 M. Afternoon.				21
5	6					26
6	7					2
7	8					17

1	F	David.	7	a	52	1	45	2	29	0	38	0
2	S	Chad.	9	0	2	26	3	29	0	38	0	
3	F	1st Sunday in Lent.	10	9	8	7	4	29	0	38	0	
4	M	Henry VI. deposed, 1461.	11	20	3	51	5	29	4	38	0	
5	T	Day 11 hours long.	morn.	4	37	6	29	7	31	0		
6	W	Ember Week.	0	32	5	27	7	29	8	31	0	
7	T	Perpetua.	1	45	6	21	8	29	8	29	5	
8	F		2	56	7	18	9	29	7	30	5	
9	S		3	59	8	19	10	29	6	32	0	
10	F	2d Sunday in Lent.	4	51	9	20	11	29	5	38	5	
11	M	Rizzio murdered, 1566.	5	32	10	19	12	29	8	38	0	
12	T	Gregory Martyr.	6	3	11	17	13	30	1	34	0	
13	W		D rises	morn.	F	30	2	38	0			
14	T	Admiral Byng shot, 1757.	6	a	48	0	13	30	4	38	5	
15	F		8	14	1	7	16	30	4	34	5	
16	S	Day 11 h. 54 m. long.	9	41	2	0	17	30	8	38	5	
17	T	3d Sun. in Lent. St. Patrick.	11	6	2	53	18	30	1	38	0	
18	M	Edward K. of West Sax.	morn.	3	46	19	29	9	32	5		
19	F		0	26	4	40	20	29	7	42	0	
20	W		1	40	5	34	21	29	6	48	0	
21	T	Benedict.	2	43	6	27	22	29	7	45	0	
22	F		3	36	7	20	23	29	7	44	5	
23	S		4	18	8	11	24	29	6	44	0	
24	F	4th Sun. in Lent. Mid-L.S.	4	48	6	59	25	29	7	48	0	
25	M	Annunciation or Lady-day.	5	14	9	45	26	29	6	47	5	
26	T		5	34	10	29	27	20	7	49	5	
27	W		5	50	11	11	28	29	6	43	5	
28	T	Tobacco bro'to Eng. 1585.	D sets.	11	52	N	29	8	46	5		
29	F		6	a	59	aft.	32	1	29	2	43	2
30	S	Rain in Mar. 1814, 2'06 inc.	8	7	1	14	2	29	8	43	5	
31	F	5th Sunday in Lent.	9	19	1	56	3	29	7	49	5	

Decl. South.	Decl. North.	Ch. bef. C.	D. Br.	Sun. E.	Turn.	Jup. (ers)	Mars (S)
4 6 33	5 27 18' 38"	4 41	6 36	10 m 3	9 m 45	4 a 54	
5 6 27	5 37 11 32	3 42	10 17	3 23	4 48		
6 6 19	5 47 10 15	20 48	10 1	3 6	4 42		
7 6 9	5 57 8 50	10 55	9 44	2 47	4 36		
8 5 59	6 7 7 30	6 6	1 9 28	2 48	4 30		
9 5 43	6 17 9 48	3 48	7 9 12	2 8	4 24		

APRIL bath XXX Days since 7 A M ☉ Decl. North.

First Quarter	5	} Day at	4 h. 22 m.	Afternoon.	11	48	37
Full Moon	12		6 43	Morning.	6	6	34
Last Quarter	19		9 38	Morning.	11	8	23
New Moon	27		1 31	Afternoon.	16	10	11

☉ enters ♈ 20th Day, at 5 H. 49 M. Morning.

1 M	Rain in April 1814, 1'35 inc.	10 a 31	2 42	4 29	4-51	0
2 T		11 44	3 31	5 29	4-48	5
3 W	Richard Bp. of Chichester.	morn.	4 23	6 29	5-44	5
4 T	St. Ambrose.	0 56	5 18	7 29	6-46	0
5 F	Camb. Term ends.	2 0	6 16	8 29	8-48	5
6 S	Oxf. Term ends.	2 53	7 15	9 29	9-49	5
7	1st Sun. in Lent. Palm S	3 38	8 13	10 30	1-52	0
8 M	Edward IV. died, 1483.	4 11	9 10	11 30	2-47	5
9 T		4 38	10 5	12 30	1-48	6
10 W	Day 13h. 34 m. long.	5 0	10 59	13 30	1-53	0
11 T	Maundy Thursday.	5 20	11 52	14 29	9-49	0
12 F	Good Friday.	☉ rises.	morn.	F 29	8-55	0
13 S		8 a 53	0 45	16 29	7-58	0
14 F	Easter Day.	10 9	1 39	17 29	6-56	5
15 M	Easter Monday.	11 28	2 34	18 29	4-57	5
16 T	Easter Tuesday.	morn.	3 29	19 29	3-56	0
17 W		0 40	4 25	20 29	4-51	0
18 T		1 40	5 20	21 29	5-52	5
19 F	Alphege.	2 25	6 13	22 29	6-53	5
20 S		3 2	7 3	23 29	6-58	0
21 F	1st Sun. af. Easter. Low S	3 27	7 50	24 29	7-50	5
22 M	Henry VII. died, 1509.	3 43	8 34	25 29	8-46	0
23 T	St. George.	4 5	9 16	26 29	8-50	5
24 W	Oxf. and Camb. Terms b.	4 21	9 57	27 29	8-48	0
25 T	St. Mark. Pres. May. horn.	4 35	10 38	28 29	6-45	5
26 F		4 49	11 19	29 30	0-44	0
27 S		☉ sets.	aft. 2	N 30	1-48	5
28 F	2d Sunday after Easter.	8 a 28	0 47	1 30	1-47	5
29 M	From East. in 15 days 1 r.	9 41	1 35	2 30	0-53	0
30 T	Battle of Fontenoy, 1745.	10 54	2 26	3 30	0-53	0

D	☉ Rises.	☉ Sets.	CL bef. ☉	D. Br.	Sun. E.	Saturn S	Jupiter S	Mars S
1	5 30	6 30	3' 57"	3 38	6 15	8 m 53	1 m 44	4 a 18
6	5 21	6 39	2 28	21	21	8 35	1 24	4 13
11	5 12	6 48	1 3	6	27	8 18	1 4	4 7
16	5 2	6 58	aft. 15	2 54	33	8 1	0 43	4 2
21	4 53	7 7	1 23	40	39	7 45	0 22	3 57
26	4 44	7 16	2 20	25	44	7 28	11 a 56	3 52

1864
MAY hath XXXI Days.

		Oh.	9 m.	Morning.	M	Decl.
First Quarter	5	3	40	Afternoon.	14	58
Full Moon	11	2	35	Morning.	16	35
Last Quarter	19	3	7	Morning.	17	55
New Moon	27				19	8
					20	13
					21	10

1	W	St. John's d. St. James.	12 a 20	3	20	4	30	1-58	0	
2	T		morn.	4	17	5	30	0-52	0	
3	F	Invention of the Cross.	0	59	5	15	6	29	9-47	0
4	S	Henry VI. murdered, 1471.	1	45	6	12	7	29	8-46	5
5	T	3d Sunday after Easter	2	20	7	7	8	29	5-46	5
6	M	John Evan. ante Port. Lat.	2	46	8	1	9	29	5-54	0
7	T	Ascen. Day of Jer. born.	3	10	8	53	10	29	8-56	0
8	W		3	30	9	44	11	30	0-56	0
9	T		3	48	10	35	12	30	2-46	0
10	F		4	6	11	27	13	29	8-44	0
11	S	Day 15 h. 23 m. long.	D rises.	morn.	F	30	8-45	5		
12	T	4th Sunday after Easter.	9 a 4	0	21	15	30	2-49	0	
13	M		10	24	1	17	16	30	0-47	0
14	T	Anne Boleyn beheaded 1504	11	32	2	14	17	29	9-48	5
15	W		morn.	3	11	18	29	9-46	5	
16	T		0	24	4	6	19	30	0-51	0
17	F	Princess of Wales born.	1	3	4	58	20	30	1-55	5
18	S		1	33	5	46	21	30	0-54	0
19	F	5 Sun. af. West. Q. Char. h.	1	56	6	32	22	29	9-55	5
20	M	[Dunstan.	2	13	7	15	23	29	8-52	0
21	T		2	31	7	56	24	29	6-48	0
22	W	Princess Elizabeth born.	2	45	8	36	25	29	6-45	5
23	T	Ascen. Day. Holy Tris. S.	2	58	9	17	26	29	6-47	5
24	F		3	13	9	59	27	29	7-43	4
25	S		3	29	10	43	28	29	7-44	5
26	T	Sun. af. Asc. Day. Aug. 1st.	3	49	11	30	29	29	8-48	0
27	M	Sun. eclip. invis. [Abp. Can.	D sets.	aft.	20	N	29	7-52	5	
28	T		9 a 48	1	14	1	29	6-54	5	
29	W	St. Charles. M. born and rest.	10	54	2	11	2	29	8-56	0
30	T		11	44	3	9	3	29	9-55	5
31	F	Rain in May, 1814, 2' 62 in.	morn.	4	7	4	30	0-56	5	

D	☉	Rises.	☉	Sets.	☾	Cl. aft.	☉	D. Br.	Sun E.	Saturn S.	Jupiter S.	Mars S.
1	4	35	7	25	3'	4'	2	7	6 50	7 m 10	11 a 35	2 a 46
6	4	26	7	34	3	36	1	52	6 55	6 52	11 14	3 40
11	4	18	7	42	3	33		30	7 0	6 34	10 52	3 34
16	4	11	7	49	3	57		7	4	6 15	10 31	3 27
21	4	5	7	55	3	45		0 32	8	5	10 8	3 20
26	3	58	8	2	3	20		No Nil.	12	5	9 46	3 14

JUNE hath XXX Days.					M	☉ Dec.
					D	North.
First Quarter	3	} Day at	5 h. 18 m.	Morning.	1	228 5
Full Moon	10		1 19	Morning.	6	22 41
Last Quarter	17		7 48	Afternoon.	11	23 7
New Moon	25		2 7	Afternoon.	16	23 22
☉ enters ☉ 21st Day, at 2 H. 45 M. Afternoon.					21	23 28
					26	23 23

1	S	Nicomede.	Om	24	5	3	5	29	8-52	5
2	F	Whit Sunday.	0	52	5	56	6	29	8-49	5
3	M	Whit Monday.	1	16	6	47	7	29	7-52	5
4	T	Whit Tues. K. Geo. III. b.	1	35	7	37	8	29	8-50	0
5	W	D. of Cum. b. Emb. Week.	1	53	8	26	9	29	9-49	0
6	T	[Boniface.	2	10	9	16	10	30	0-49	0
7	F	Bellisle taken, 1761.	2	28	10	8	11	30	0-49	0
8	S	7 Bps. sent to the Tower 1688	2	51	11	1	12	30	0-54	0
9	T	Trinity Sunday.	3	16	11	57	13	30	0-53	0
10	M	Geo. I. died, 1727. ☉ ecl.	☉ rises.	morn.	F	29	9-55	5		
11	T	St. Barnabas. [visible.	10 a	9	0	53	15	30	0-58	5
12	W		10	55	1	49	16	29	8-61	0
13	T	Corpus Christi.	11	30	2	43	17	29	9-69	0
14	F		11	57	3	34	18	29	8-65	0
15	S		morn.	4	22	19	29	9-57	0	
16	F	1st Sunday after Trinity.	0	16	5	6	20	29	9-60	0
17	M	St. Alban.	0	32	5	48	21	29	9-57	0
18	T	Battle of Waterloo, 1815.	0	47	6	28	22	29	8-54	0
19	W		1	6	7	8	23	29	6-56	5
20	T	Trs. of Edw. K. of West Sax.	1	14	7	49	24	29	8-54	0
21	F	Long. Day, 16h. 34m. long.	1	29	8	31	25	29	9-54	5
22	S		1	46	9	17	26	30	1-54	5
23	F	2d Sunday after Trinity.	2	9	10	6	27	30	2-50	5
24	M	St. John Baptist.	2	38	10	59	28	30	1-56	0
25	T		☉ sets.	11	55	N	30	0-55	0	
26	W		9 a	34	aft.	54	1	29	9-54	0
27	T		10	17	1	53	2	30	0-57	0
28	F	Rain in June 1814, 2:32 in.	10	50	2	51	3	29	9-65	0
29	S	St. Peter.	11	14	3	46	4	29	8-63	0
30	F	3d Sunday after Trinity.	11	35	4	39	5	29	8-60	5

D	☉ Rises	☉ Sets.	Cl. alt ☉	D Br.	Sun E.	Saturn S.	Jupiter S.	Mars S.
1	3 52	8 8	2 34	No	7 16	5 m 11	9 a 20	3 a 5
6	3 48	8 12	45	real	18	4 51	8 59	2 57
11	3 45	8 15	0 48	Night	19	4 30	8 37	2 49
16	3 43	8 17	bef. 13	in	20	4 9	8 16	2 41
21	3 43	8 17	1 18	Br.	21	3 48	7 54	2 33
26	3 43	8 17	2 23	tain.	20	3 27	7 33	2 25

Dec		JULY hath XXXI Days.		M		Decl.	
North				D		North	
1	First Quarter	3	9 h. 28 m. Morning.	1	25°	8'	
2	Full Moon	9	0 21 Afternoon.	6	29	42	
3	Last Quarter	17	0 46 Afternoon.	11	22	7	
4	New Moon	24	11 9 Afternoon.	16	21	23	
5	First Quarter	31	2 25 Afternoon.	21	20	29	
☉ enters ♍ 23d Day, at 1 H. 37 M. Morning.				26	19	27	

1	M	Rain in July 1814, 0.91 in.	11 a 54	5	29	6	29	8-56	0	
2	T	Cam. Com. Ox. Act. V.V.M	morn.	6	18	7	29	9-58	0	
3	W	Trin. Ter. e. Dog Days b.	0	11	7	7	8	29	9-64	5
4	T	Translation of St. Martin.	0	29	7	57	9	29	9-66	5
5	F	Cam. Term ends.	0	49	8	48	10	29	9-65	5
6	S	Oxford Term ends.	1	10	9	42	11	29	9-64	0
7	F	4th Sun. af. Tr. Tho. à Bec.	1	42	10	37	12	29	8-68	0
8	M		2	21	11	33	13	29	7-65	5
9	T	Czar Peter murdered, 1762	☾ rises.	morn.	F	29	7-67	5		
10	W		9 a 26	0	28	15	29	7-55	5	
11	T		9	52	1	20	16	29	9-63	5
12	F		10	15	2	9	17	30	0-64	0
13	S	Peace of Utrecht, 1713.	10	31	2	55	18	29	9-59	0
14	F	5th Sunday after Trinity.	10	48	3	38	19	29	7-58	5
15	M	Swithin.	11	2	4	19	20	29	6-63	0
16	T	Day 16 h. 4 m. long.	11	15	4	59	21	29	7-58	0
17	W	Cape Breton taken, 1745.	11	29	5	39	22	29	8-60	5
18	T		11	46	6	20	23	29	8-61	5
19	F		morn.	7	4	24	29	7-65	5	
20	S	Margaret.	0	7	7	51	25	29	6-65	0
21	F	6th Sunday after Trinity.	0	32	8	42	26	29	8-67	0
22	M	St. Mary Magdalen.	1	6	9	37	27	29	9-59	5
23	T		1	52	10	35	28	30	1-67	0
24	W	Gibraltar taken, 1704.	☾ sets.	11	36	N	30	0-66	5	
25	T	St. James.	8 a 46	aft.	36	1	30	0-72	5	
26	F	St. Anne.	9	14	1	34	2	30	0-70	0
27	S		9	38	2	29	3	30	0-76	5
28	F	7th Sunday after Trinity	9	57	3	21	4	29	9-78	5
29	M	Span. Arm. defeated, 1538	10	14	4	12	5	30	0-63	5
30	T		10	31	5	1	6	30	0-68	5
31	W		10	51	5	52	7	30	0-66	5

D	☉ Rises.	☉ Sets.	Cl. bef. ☉	D. Br.	☉ East	Saturn S.	Jupiter S.	Mars S.
1	3 46	8 14	3' 24"	No	7 19	3 m 8	7 a 12	2 a 18
6	3 49	8 11	4 18	real	17	2 46	6 52	2 10
11	3 53	8 7	5 3	Night	15	2 24	6 33	2 2
16	3 58	8 2	5 37	in	12	2 2	6 14	1 52
21	4 5	7 55	5 59	Britain	9	1 40	5 55	1 43
26	4 12	7 48	6 7	0 52	5	1 19	5 36	1 3

1500 AUGUST hath XXXI Days. M. Decl. North.

Full Moon	8	Day at	1 hr 18 m.	Morning.	11 18 50 11
Last Quarter	16		4 58	Morning.	6 16 50 42
New Moon	23		7 6	Morning.	11 15 50 16
First Quarter	29		9 45	Afternoon.	16 13 50 144

☉ enters ♈ 23 Day, at 8 H. 3 M. Morning.

21	12	6
26	10	24

1	T	Lammas D. Q. Anne d. 1714	11 a	13	6	43	8	30	0-69 5
2	F		11	41	7	36	9	30	0-70 0
3	S		morn.		8	30	10	30	1-67 0
4	F	8th Sunday after Trinity.	0	17	9	25	11	30	0-67 0
5	M	Crown Point taken, 1759.	1	4	10	20	12	30	0-69 5
6	T	Transfiguration.	2	3	11	13	13	29	9-63 0
7	W	Name of Jesus.	3	9	morn.	14	29	9-65 0	
8	T	Cherbourg taken, 1758.	ris.	0	3	F	29	6-61 5	
9	F		8 a	38	0	50	16	29	7-60 5
10	S	St. Lawrence.	8	54	1	34	17	29	9-60 0
11	F	9th Sunday after Trinity.	9	8	2	16	18	30	0-64 0
12	M	r. of Wales b. 1702. Dog	9	22	2	57	19	30	0-66 5
13	T	[Days end.	9	37	3	37	20	29	8-62 5
14	W		9	52	4	18	21	29	7-59 5
15	T	Assumption B. V. Mary.	10	10	5	0	22	29	8-61 0
16	F	Duke of York born, 1703	10	32	5	45	23	29	7-56 5
17	S		11	1	6	33	24	29	8-64 0
18	F	10th Sunday after Trinity.	11	40	7	25	25	29	9-64 5
19	M	Day 14 h. 20 m. long.	morn.		8	21	26	29	9-56 5
20	T		0	35	9	20	27	29	9-59 5
21	W	Duke of Clarence b. 1765.	1	46	10	21	28	29	8-61 5
22	T	K. Richard III. slain, 1485	3	6	11	21	29	29	8-65 5
23	F		sets.		aft.	19	N	29	5-65 5
24	S	St. Bartholomew.	8 a	4	1	14	1	29	4-59 0
25	F	11th Sunday after Trinity.	8	22	2	7	2	29	4-60 0
26	M		8	40	2	59	3	29	5-61 0
27	T		8	59	3	51	4	29	7-55 0
28	W	St. Augustine.	9	21	4	43	5	29	8-54 5
29	T	St. John Baptist beheaded.	9	49	5	37	6	29	9-56 0
30	F		10	23	6	32	7	30	0-57 0
31	S	Rain in Aug. 1814, 2 37 in.	11	5	7	27	8	29	8-56 0

D	☉ R. ses.	☉ Sets.	☉ Cl. bef. ☉	☉ D. Br.	☉ East	Saturn S.	Jupiter S.	Mars S.
1	4 21	7 39	5 57	1 24	6 59	0 m 54	5 a 14	1 a 29
6	4 29	7 31	5 38	44	54	0 29	4 58	1 21
11	4 37	7 23	4 52	2 2	49	0 4	4 41	1 13
16	4 46	7 14	3 58	30	44	11 48	4 25	1 6
21	4 55	7 5	2 52	37	38	11 28	4 8	0 59
26	5 5	6 55	1 34	30	33	11 9	3 52	0 53

1500 AUGUST bath XXXI Days 14 11 M Decl. North.

Full Moon	8	Day at	1 hr 13 m.	Morning.	11 59 1
Last Quarter	16		4 58	Morning.	6 16 142
New Moon	23		7 6	Morning.	11 15 16
First Quarter	29		9 45	Afternoon.	16 13 144

☉ enters 7th Day, at 8 H. 5 M. Morning.

1 T	Lammas D. Q. Anne d. 1714	11 a 13	6 43	8 30	0-69 5
2 F		11 41	7 36	9 30	0-70 0
3 S		morn.	8 30	10 30	1-67 0
4 F	1st Sunday after Trinity.	0 17	9 25	11 30	0-67 0
5 M	Crown Point taken, 1759.	1 41	10 20	12 30	0-69 5
6 T	Transfiguration.	2 31	11 13	13 29	9-63 0
7 W	Name of Jesus.	3 9	morn.	14 29	9-65 0
8 T	Cherbourg taken, 1758.	riser.	0 3	F 29	6-61 5
9 F		8 a 38	0 50	16 29	7-60 5
10 S	St. Lawrence.	8 54	1 34	17 29	9-60 0
11 F	2nd Sunday after Trinity.	9 8	2 16	18 30	0-64 0
12 M	Tr. of Wales b. 1762. Dog	9 22	2 57	19 30	0-66 5
13 T	[Days end.	9 37	3 37	20 29	8-62 5
14 W		9 52	4 18	21 29	7-59 5
15 T	Assumption B. V. Mary.	10 10	5 02	22 29	8-61 0
16 F	Duke of York born, 1763	10 32	5 45	23 29	7-56 5
17 S		11 1	6 33	24 29	8-64 0
18 F	10th Sunday after Trinity.	11 40	7 25	25 29	9-64 5
19 M	Day 14 h. 20 m. long.	morn.	8 21	26 29	9-56 5
20 T		0 35	9 20	27 29	9-59 5
21 W	Duke of Clarence b. 1765.	1 46	10 21	28 29	8-61 5
22 T	K. Richard III. slain, 1485	3 6	11 21	29 29	8-65 5
23 F		sets.	aft. 19	N 29	5-65 5
24 S	St. Bartholomew.	8 a 4	1 14	1 29	4-59 0
25 F	11th Sunday after Trinity.	8 22	2 7	2 29	4-60 0
26 M		8 40	2 59	3 29	5-61 0
27 T		8 59	3 51	4 29	7-55 0
28 W	St. Augustine.	9 21	4 43	5 29	8-54 5
29 T	St. John Baptist beheaded.	9 49	5 37	6 29	9-56 0
30 F		10 23	6 32	7 30	0-57 0
31 S	Rain in Aug. 1814, 2.37 in.	11 5	7 27	8 29	8-56 0

D	☉ R. ses.	☉ Sets.	☉ Cl. bef.	☉ D. Br.	☉ East	☉ Saturns.	☉ Jupiters.	☉ Mars.
1	4 21	7 39	5 57	1 24	6 59	0 m 54	5 a 14	1 a 29
6	4 29	7 31	5 38	4 4	54	0 29	4 58	1 21
11	4 37	7 23	4 52	2 2	49	0 4	4 41	1 13
16	4 46	7 14	3 58	20	44	11 48	4 25	1 6
21	4 55	7 5	2 52	37	38	11 28	4 8	0 38
26	5 5	6 55	1 34	30	33	11 9	3 52	0 53

Decl. South.		NOVEMBER hath XXX Days.		M. Decl. North.	
Full Moon	5	Day at	3 h. 18 m.	Morning.	1 40 30
Last Quarter	12		7 8	Afternoon.	6 16 3
New Moon	19		10 23	Morning.	11 17 29
First Quarter	26		5 6	Afternoon.	16 18 48
☉ enters ♄ 22d Day, at 9 H. 9 M. Morning.					21 19 59
					26 21 0

1 F	All Saints.	2m50	9	55	12	29	9	46	5
2 S	D. of Kent b. 1767. All Sou.	3	57	10	35	13	29	9	41
3 F	21 S. af Tr. Prs. Sophia b.	5	5	11	15	14	29	8	40
4 M	K. W. III. I. [On All S. Iret.	6	13	11	57	15	29	8	38
5 T	Powder Plot 1605. O. S.	D rises.		morn.		F	29	7	37
6 W	Leonard. Mich. Ter. beg.	5 a	24	0	41	17	29	8	38
7 T		5	52	1	28	18	29	5	40
8 F	Prs. Aug. Sophia b. 1768.	6	30	2	19	19	29	3	39
9 S	Lord Mayor's Day.	7	18	3	12	20	29	6	35
10 F	22d Sunday after Trinity.	8	21	4	7	21	30	1	33
11 M	St. Martin.	9	34	5	3	22	30	0	39
12 T	On m. of S. M. 2ret. Cam.	10	53	5	58	23	29	8	45
13 W	Britius. [Ter. div. m.	morn.		6	51	24	29	8	44
14 T		0	17	7	43	25	29	8	48
15 F	Machutus.	1	41	8	34	26	29	5	49
16 S	Henry III. died, 1272.	3	6	9	24	27	29	6	40
17 F	23 S. af Tr. Hugh Bp. of Lin.	4	33	10	16	28	29	9	44
18 M	In 8 Days of St. Mart. 3ret.	5	57	11	9	29	29	6	47
19 T	☉ eclipsed visible.	D sets.		aft.		5	N	29	4
20 W	Edmund King and Mart.	4 a	57	1	3	1	29	5	38
21 T		5	42	2	3	2	29	6	29
22 F	Cecilia.	6	37	3	2	3	29	7	30
23 S	St. Clement. Old Mart.	7	43	3	59	4	29	6	40
24 F	24th Sunday after Trinity.	8	56	4	52	5	29	3	46
25 M	D. of Glou. b. Cath. In 15 D.	10	8	5	40	6	29	4	41
26 T	[of St. Mar. 4 r.	11	21	6	25	7	29	6	42
27 W		morn.		7	8	8	29	4	39
28 T	Michaelmas Term ends.	0	31	7	48	9	29	5	40
29 F	Rain in Nov. 1814, 2.76 in.	1	39	8	27	10	29	3	41
30 S	St. Andrew.	2	46	9	7	11	29	3	38

D	☉ Rises.	☉ Sets.	Cl. aft. ☉	D. Br.	Sun E.	Saturn S.	Jupiter S.	Mars S.
1	7 13	4 47	16 15	5 17	5 12	6 a 54	0 a 37	11 m 31
6	7 23	4 37	16 11	24	7 6	6 35	0 22	11 24
11	7 31	4 29	15 46	31	1 6	6 15	0 5	11 16
16	7 39	4 21	14 59	37	4 57	6 56	11 m 50	11 9
21	7 46	4 14	13 51	43	53	5 36	11 33	11 1
26	7 51	4 9	12 23	49	49	5 16	11 17	10 54

OCTOBER hath XXXI Days

Full Moon	6	9 h. 19 m.	Morning.	10 30 0	14
Last Quarter	14	8 3	Morning.	11 30 1	15
New Moon	20	11 56	Afternoon.	12 30 2	16
First Quarter	27	10 58	Afternoon.	13 30 3	17

☾ sets at 23d Day, at 0 H. 49 M. Afternoon.

1 T	Remigius.	Um 14	9	110	30 0	170
2 W		1	24	9	47	11 30 1
3 T		2	34	10	30	12 30 2
4 F		3	45	11	11	13 30 3
5 S	Old Parr died, et. 152, 1635	4	55	11	51	14 29 9
6 M	17th Sun. after Trin. Faith.) rises. morn.		F	29 7	43 0
7 M		6 a	21	0	31	16 29 7
8 T	Admiral Benbow died. 1702.	6	35	1	12	17 29 9
9 W	St. Denys.	6	53	1	55	18 30 0
10 T	Oxf. and Camb. Terms beg.	7	18	2	40	19 30 0
11 F		7	49	3	28	20 29 8
12 S		8	30	4	20	21 29 6
13 M	13th Sun. M. T. Trans. of	9	24	5	14	22 29 4
14 M	[K. Edw. Conf.	10	30	6	10	23 29 4
15 T	Day 10 h. 35 m. long.	11	49	7	7	24 29 6
16 W	Bps. Latimer and Ridley	morn.		8	4	25 29 5
17 T	Etheldreda. [burnt, 1535.	1	14	8	59	26 29 3
18 F	St. Luke.	2	41	9	52	27 29 1
19 S	King John died, 1216.	4	10	10	45	28 29 5
20 M	19th Sunday after Trinity.) sets. 11		38	N	29 7
21 M	Battle of Trafalgar, 1805.	5 a	39	aft.	32	1 29 5
22 T	Sir Clo. Shovel lost, 1707.	6	2	1	28	2 29 6
23 W		6	30	2	25	3 29 4
24 T	Battle of Agincourt, 1415.	7	8	3	24	4 29 3
25 F	K. Geo. III. Access. Crispin	7	58	4	23	5 29 4
26 S	K. Geo. III. Procl. 1750.	8	58	5	20	6 29 6
27 F	20th Sunday after Trinity.	10	6	6	13	7 29 7
28 M	St. Simon and St. Jude.	11	18	7	8	8 29 8
29 T		morn.		7	50	9 29 7
30 W		Q	29	8	34	10 29 9
31 T	Rain in Oct. 1814, 0.80 in.	1	40	9	15	11 29 9

D	☉ Rises.	☉ Sets.	☾ Cl. aft.	☾	D. Br.	Sun E.	Saturn S.	Jupiter S.	Mars S.
1	8 15	5 45	10 22	4 18	5 49	8 a 51	2 a 7	0 a 8	
6	6 21	5 36	11 33	29	43	8 32	1 53	0 7 5	
11	6 34	5 26	13 14	39	37	8 14	1 39	11 55	
16	6 44	5 16	14 23	49	31	7 55	1 24	11 50	
21	6 54	5 6	15 17	59	25	7 36	1 10	11 44	
26	7	4 57	15 54	5	19	7 18	0 55	11 38	

ANSWERS to the QUESTIONS Critical and Philosophical.

CCCXXV. By HINCKLEIENSIS, the Proposer.

The requisites to constitute the character of a *Gentleman* completely are many:—They are, perfect ease of deportment, even under the most embarrassing circumstances: manners that conciliate and gain universal esteem: good breeding, so disciplined as never to be thrown from its guard, or, except on the most extraordinary occasions, betrayed to the discovery of passion: a smooth and flowing enunciation: a bland gaiety of heart that no trifles can disturb: a flattering, yet not officious, attention to every person present: and all those charms of address and demeanour which cannot fail to win our esteem.

I should define a *gentleman*, then, a person well born and educated: manifesting elegance of behaviour, gracefulness of mien, nicety of taste; and of pleasant manners with virtuous habits. Above the vulgar by his character, situation, and fortune: uniting politeness of address with meekness and gentleness of behaviour.

Mr. W. Stringer says: According to the usual acceptation, a *gentleman* is a man possessed of wealth. But a true gentleman is he who acts as a person of affluence ought to act, that is, charitably, intellectually, liberally, and honourably. He is no gentleman, properly speaking, (however great his wealth) who is guilty of a mean action. Nor is he much short of one, whose mind is of an exalted nature, who possesses liberality of sentiment, a generous disposition, and an upright soul, even though he be destitute of wealth. As for those, who, although they possess what the world call independence, yet daily prove that they have nothing good, gentle, or honourable, in their composition; nothing can be a greater mistake than to call such creatures *gentlemen*.

CCCXXVI.

Several of the early councils required the Clergy to wear apparel *suited to their profession*; but they prescribed neither kind nor colour. See Conc. Carth. 4. c. 45. & Conc. Agathen. c. 20. The first held A. D. 400, the second A. D. 505. Nor, indeed, is it likely that bishops and presbyters should wear a distinct habit out of the church, during the three first centuries, when tyrants and persecutors were diligently seeking them in order to destroy them. At Constantinople, in the time of Chrysostom and Arsacius, the clergy commonly went in black, as the Novatians did in white; that they might be distinguished from those schismatics. In process of time the custom became general.

As to peculiar vestments worn in the church, they seem to have obtained much earlier. It is clear from *Const. Apost.* lib. viii. cap. 12, (most probably collected very early in the third century) that during the eucharist the bishop administered at the altar in a white and shining garment.

CCCXXVII. By Mr. W. SPENCER, of Sapcote, near Hinckley.

It is highly probable that the rot in sheep is caused by a flat insect called a fluke (*fasciola hepatica*) which is found adhering to stones and plants in wet situations; and also in the livers and biliary ducts.

16 QUEST. CRITIC. and PHIBS. answered, 1816.

of sheep affected with the rot. It is a good preventive for sheep with sheep to quit the fold in a morning, and the dew is taken off by a halation. The following has been found effectual. Take powder of Roman wormwood, and powder of Spanish radish, of each one ounce, juniper berries four ounces, oat one gallon, salt one bushell, and half the weight of the whole of common wormwood in powder. Put this quantity in the troughs where sheep feed, once a week at least, in March, and occasionally, till the last week in June. The flock is supposed to consist of about 100 sheep.

Some of our correspondents refer to Mr. B. Holdich's treatise on the Resp or Rot, as containing many valuable hints.

CCCXXVIII.

The opinions of our correspondents seem nearly balanced in reference to this question. But Mr. Spencer and a few others decide against both characters, thus:—The Prodigal and the Miser may be considered as analogous to positive and negative quantities in Algebra, which destroy each other's effects. It is not easy to conceive how either of them can promote the wealth of the country. It is evident that the miser increases nobody's wealth but his own; and though the prodigal may scatter his property, yet it is doubtful whether that property increases by flowing in other channels, in a greater ratio than the value received for it diminishes.

CCCXXIX.

The majority of our correspondents agree as to the fact specified in this question. But they vary greatly in their mode of accounting for it; some ascribing it to the pre-ordained difference in the constitution of the sexes; others to habit. The former opinion, however, prevails amongst them.

CCCXXX. By Mr. B. MANDALL, Woolwich Common.

In this passage, so often brought upon the controversial arena, it is evident, independent of all critical disquisition, that the interpretation advanced by those who deny the divinity of our Lord, runs counter to the whole scope of the Apostle's reasoning in the context. Looking, however, to the correct meaning of the passage, the rendering may be, "Who existing in the form of God, did not think it robbery to be like God: yet he divested or emptied himself [i. e. of his former glory] when he took or received the form of a bondman. The word form is a confessedly inadequate rendering of, *μορφή*; but that need not be dwelt upon. That *το ὡς ἦν ὁμοῖος θεῷ* literally signifies to be like God, has been clearly proved by Whishy Doddridge, and others. The fair, and I apprehend, the true, interpretation of the Apostle's meaning is, that the Son being in the form of God when he made the world, and appeared to the patriarchs and prophets, he thought it no derogation from the honour due to God, that he received from angels and men like worship with God. As to the inference deducible from the opposition of the two terms *μορφή* and *ἡσθής*, in the respective phrases *ὡς ἦν ὁμοῖος θεῷ μορφή*, and *μορφήν ἑαυτοῦ ἡσθής*, it is, I conceive, indubitably this:—that when the Apostle speaks of the form of God, he employs the first of those terms, showing that Jesus Christ existed in the form of God: while, when he speaks of the form of a man, he simply uses the latter term, which implies that he received it: the

the first, form, then, was not an accidental and transient form, but, fast and durable; the second, on the contrary, was not essential, but accidental; for no correct thinker even judges that to receive a form which it had always. Our Lord, then, was in the form of God essentially, but assumed that of a servant for an especial purpose.

Ingenious answers to one or other of the above Questions were sent by Messrs. John Baines, jun. Thomas Baker, J. Gronow, W. Hill, Thackletons, James Hood, R. Maffett, James Postlethwaite, John Savage, D. T. Sheridan, W. D. Snooks, W. Spencer, W. Stringer, Jas. Suffolk, &c.

ENIGMATOLOGY.

ANSWERS to the last Year's ENIGMAS.

- | | |
|-------------------|----------------------|
| 1. A Pupil. | 7. A Root. |
| 2. A Door. | 8. Smoke. |
| 3. Resignation. | 9. Snow. |
| 4. Rain. | 10. A Newspaper. |
| 5. Salt. | 11. A Dilemma. |
| 6. Musical Notes. | Prize. A Conveyance. |

CHARADES. 1. Mansion. 2. Earnest. 3. Poultry. 4. Scarcity.

REBUSES. 1. Resist—Sister. 2. Portico. 3. Malice. 4. Truth. 5. Smart-mart-art.

GENERAL ANSWERS.

1. *On first beholding the Tree-primrose.* By Mr. J. BAINES, jun.

Soon as Aurora's lucid beams,
Had ting'd the orient skies,
I wander'd by the purling streams
Where countless flowrets rise
And as my raptur'd eyes survey'd
Their silken foliage,
A lovely stranger in the shade
Did all my thoughts engage.
Transported, I beheld, a flow'r
Which Nature form'd so fine;
Of all that deck'd fair Flora's

But ere Sol's ever-rolling car
Approach'd the middle sky,
Its modest head, so sweetly fair,
Began to droop and die.
What pity that the choicest flow'r
So early meets its doom!
But reason cries, one transient how
Will tarnish beauty's bloom.
Go round the world, convey'd
where'er,
You'll find this maxim true,
Bright beauties, fairest of the fair,
Are the most transient too.
The slightest causes often will
Their tender forms destroy;
Nay even a single breath may kill
What heightens human joy.

It was said the most divine.
Its odorous head a breath exhal'd
Pure as the breath of love,
Sweet as Arabia's spicy gales,
Or Hybla's thymy grove.

2. *The Leisure Hour.* By Mr. RICHARD CLAYE, Manchester.

When time again gives life to spring,
When groves with notes delighted sing,
And all the world is gay,
How glad the heart, the eye how gay
To see the sun in shades to stray
To pass a pleasant hour.

When time again gives life to spring,
When groves with notes delighted sing,
And all the world is gay,
How glad the heart, the eye how gay
To see the sun in shades to stray
To pass a pleasant hour.

Soon summer comes—no clouds appear
 The sky is bright, no rain is near, 4
 But scented in the bower;
 The sea's salt waters greenly shine, 5, 9
 Tars at the cabin door recline, 2
 To pass a leisure hour.
 Then lovely Ceres—Autumn's joy,
 Hastes, anxious every want to cloy,
 And plenty forth to shower;
 While, as she treads the welcome way conveyance, Pr.
 The nymphs in wanton revels play
 To pass a leisure hour.
 But, solemn winter, at thy blast
 Hope whispers, long thou wilt not last, resignation 3.
 These pleasures to devour;
 So at the news with paper nigh 10
 I'll take my pen, and write to Di.
 To pass a leisure hour.

3. *The Spain of the River Avon.* By Messrs. R. FLOUNDZ and J. H. PARSONS, of Aveton Gifford.

Behold a weary, toilful, swain	All cares like vapours from him fly,
Who sweats to gather in the grain	His flock he guards with cautious
And plans adopts to save on;	eye
His mind on smoking's never bent	Upon the banks of Avon.
But with the paper is content,	The course he takes is always sure,
Upon the banks of Avon.	No pastimes revel near his door,
He toils, and sweats, and takes	But plans adopts to save on;
great pain, [rain,	No bloody scars bedeck his face,
Mid summer's heat and winter's	To death at last resigns his place
And plans adopts to save on;	Upon the banks of Avon.

4. *The Farmer.* By Mr. JOHN HERDSON, London.

The farmer with judicious eye,	But a conveyance will receive.
Beholds the mist in yonder sky;	Scarce one in ten throughout the
Which oft foretells a shower of	nation,
rain, [grain;	Will yield to this with resignation.
Then near the door he ricks his	Let peace and plenty crown our
And when his harvest-home's con-	isle,
vey'd, [made;	And poverty again will smile.
Th' accusom'd feast is quickly	No farther laws need then be made
And while his friends eat, drink,	To raise the price of daily bread;
and smoke, [like	Nor need we dread the conse-
He reads the news and cracks a	quence,
All this would fill my heart with	At present or a few years hence;
glee.	For let the poor have what they
But what comes after saddens me.	price,
For tho' there be a plenteous crop,	A wholesome loaf of decent size;
He cannot let the markets drop;	No sad dilemma need we fear,
Or if he does he cannot live	Nor want of salt their roots to cheer.

5. *To the Editor.* By Mr. JAMES HOOD, jun.

Kind Sir, accept a pupil's strain,
 The muse invok'd he can't refrain;
 He'll try your wild notes to explore,
 On salt, on root, on snow, or door;
 But not like contemplative Young,
 When resignation's bow he strung.
 Such news cannot expected be
 From such a simple one as me.
 'Tis smoke that finishes the whole,
 Which frequent crowns the midnight bowl.
 Kind Editor, the muse is coy,
 No more I'll add, so now good bye.

6. *Emma's Distress.* By Mr. T. NIELD, Chester.

Dark was the night, damp mists around her flew,
 And stormy winds their loudest war-notes blew;
 Soon flashing lightnings glanc'd across the plain,
 And thunders join'd with copious showers of rain.
 Thus travell'd Emma thro' the trackless waste;
 In dread the horrors of the storm she fac'd:
 No tender eye to pity her distress,
 No door to ope, no place to seek redress;
 No bread to eat, no smoking hearth is near,
 O sad dilemma! hope itself can't cheer,
 "No paper can salute my friends," she cried,
 "To tell my doom, or where, or how, I died!"

7. *Sonnet to Religion,* By Mr JOHN SMITH, Alton Park.

Hail, blest Religion! bright celestial maid,
 In snow-white vesture clad; thy cheering power
 Disperses the vapours that our minds o'erspread, smoke
 Renews our joy, and gilds each gloomy hour.
 The sinner thou constrainest to depart
 From vice, the root of all his killing fears,
 Conveyest balsam to his wounded heart,
 And wipest from his eyes the briny tears. salt
 Thou pointest to that blissful mansion's door
 Where notes from golden lyres harmonious sound,
 Where cares perplex not; grief as ails no more,
 And unsophisticated joy's abound. dilemma.
 Seraph rever'd! so teach me to employ
 Life's remnant that I may with resignation die.

8. *An Evening Walk.* By Mr. W. D. SNOOZE, Woolbridge.

I was tempted one eve, when the weather was fine,
 Through the shadowy lanes, and the woodlands to stray;
 Where the lambskins in innocent sports did combine,
 And the birds most enchantingly sung on the spray.
 Thus allur'd by the scene, I with pleasure did roam,
 So delighted my eye, and enliven'd my mind;

Will I find, when I demand'd afar from my home,
That the sun had its altitude newly declin'd;
When lo! on a sudden, a cloud rose to view,
Whose sable complexion portending some rain,
Plac'd me in a dilemma, which course to pursue,
To seek shelter abroad, or my home to regain.
I resolv'd to return, when the cloud's smoky hue,
Had completely obscur'd the horizon around;
When a meteor burst forth, fiercely vivid and blue,
And some loud distant thunder did mournfully sound.
I redoubled my speed, and evaded the wet,
Till, at length, quite fatigu'd, I arriv'd at my door;
At that instant the hurricane furiously beat,
And the water in torrents did rapidly pour.
Thus so safely arriv'd, I sat down to reflect,
On the accidents dire, to which tempests may lead;
Thinks I, in the news I may read the effect
Of the storm that at present rolls over my head:
And I said,—none the trial can patiently bear,
When Providence proves most abruptly unkind;
When methought somethin' g whisper'd, as if to my ear,
Resignation is sure the best helm for the mind.

9. *A Morning in Spring.* By Mr S. TREVELYAN, of Plymouth.

The star-light's fled beyond our bound
And bright appears just opening day;
The sparkling dew bedecks the ground,
And lambskins o'er the meadows play.
In green array'd behold the trees,
The grain now shoots towards the sky;
And welcome is the morning breeze,
That makes the smoke and vapour fly.
The feather'd songsters raise their notes,
And make the neighbouring valleys ring,
With hope and joy my eye beholds
His course the rising sun begin.
Oh Nature! charming, ever new,
So pleasing to my ravish'd sight,
Thy beauties may I calmly view,
Till day no more succeeds to night.

10. *Hope.* By Mr. T. WHICKER, Exeter.

Hail, delightful, cheering hope,	Should lightning, darts, or waters
Thro' life our steady firmest prop.	well,
Thou' opest the door to sacred joys,	Thro' thee we can suchills repel.
Delightest the soul and fills the eyes,	Puzzling dilemmas pose us not,
Thou still'st at the boisterous winds of	Dirty winter's snows are soon forgot:
life,	By cheerful hearts we sit so snug,
And subdu'at the sparks of strife	With strong ale and eat brown jug:
The ever-during salt so fair,	The papers read the news to con,
That maketh us quietly evils bear	Bless our defenders every one.
No gamut marks more pleasing	In health we're sound from foot to
notes,	head,
When those thy virtue e'er pro-	Can moderation wish for more?

Other general Answers to the Enigma were received from Messrs. T. Baker, D. Boyer, E. Bradley, E. Crabtree, Andrew Dawell, jun. Elsie Drake, P. Goss, Hinckleins, Jas. Hood, senr, W. Johnson/Lyab, R. Maffett, W. Oats, Jas. Pastelawitz, John Savage, D. T. Sheridan, Joseph Smith, W. Spencer, Jos. Suffolk, John Tyson, &c.

ANSWERS to the PRIZE ENIGMA, CHARADES, &c.

1. By Mrs. ANDSON,

To her niece who wished to become the favourite of an uncle.
Would you the safe conveyance | Read much, think more, indus-
find, | trious be, [Lee.
That reaches to your uncle's mind; | You'll surely please your uncle

2. By Mr. THOMAS BAKER, Nuneaton.

A path, conveyance, track, or way,
The prize Enigma will display;
But of all paths may we be giv'n,
To that which terminates in Heav'n!

3. By A FEMALE INCOGNITO.

Of all the tracks that we can tread,
There's none so smooth and even,
As that which doth through virtue lead,
Straight onward up to heaven!

4. To Mr. Pyches. By Miss GURNEY, of Richmond.

O! son of Bentley, of thy mental power
I'll the conveyance take instead of dower.

5. By Mr. W. HILL, Oldham.

The riddle sent from Groton	To seize or solve it; but I fear,
House,	The prize will not arrive this year;
I've view'd as does a cat a mouse,	Tho', it for me it be design'd
Behind, before, on every side.	It will a sure conveyance find.
And left no likely mean untry'd	

6. By Mr. JAMES HOOD, senr.

These lines on conveyance, kind sir, I now send.
Not by the Leeds mail, but by an old friend,
They were penn'd in a cot, near the rise of a hill,
On the border of Warwickshire, near to a mill,
Here Contentment presides, and Friendship, and Love,
A forerunner of that we shall find when above.

7. By HINCKLEINS.

A safe conveyance, I suppose,
The prize Enigma will disclose.

8. By Mr. THOMAS LITTLE, of Thorne.

Lawyer, Lawyer's an odd stick, conveyances he makes,
And sometimes to his study the Diary he takes;

And heroically asserts, since he's found out Pytches's rhyme;
Such a puzzling conveyance he ne'er saw in all his time.
And next Michaelmas term, he's in hopes you'll glad his eyes,
By entering on your rolls, 'Lawyer Latitat a prize.'

9. By Mr. GEORGE SIMPKIN, of Thredon.

Friend Pytches's prize in dark disguise,
Did puzzle my old brain;
Until at length, I tried my strength,
Conveyance to obtain.

10. By Mr. W. SPENCER, of Sappote.

Hail the mystic bard of Groton,
Tis conveyance thou hast wrote on.

11. By Mr. JOSEPH SMITH, Ruddington near Nottingham.

As soon as the Diaries are published in town,
By Pytches's conveyance pray send me one down.

Other ingenious Answers to the Prize Enigma were transmitted by Messrs. Baines, jun. Boulby, Bradley, Claye, Cook, Crabtree, Froude, Handford, Herdson, James Hood, jun. T. Hood, Maffett, Nield, Papple, Parsons, Smith, Snooke, Suffolk, Sumner, Treeby, Tyson, Whicker, Whitaker, &c.

1. ANSWER TO CHARADES AND REVERSES. *The Wish.*

By Mr. R. CLAYE.

Could I wish, and obtain, I would ask to reside
Secluded from envy with truth as my guide.

In you humble ivy-crown'd cot,
For malice and scarcity shrink back with fear
The world may have sorrow—it reaches not there,

Contentment is king of the spot.

The portico's splendour, the mansion's gay shew,
With all the smart things which from luxury flow,

No pow'r have such bliss to impart,

Here him I'd resist who would wantonly try

In earnest to wake in my bosom a sigh

And sting, unoccasion'd, my heart.

How frail is our Nature! no sooner one want

Is gone, but another for life seems to pant;

For ah! I a mate should require

To make me a poutice, or read Dia's page

When the eye of discernment is dim'd by old age,

Then grant dearest fate my desire.

2. Address to Mr. W. Hill. By Mr. WILSON JOHNSON, of Grassy Nook.

Your mansion, Sir, is built with art,
And all about it very smart;

In truth the portico's so fine,

That earnestly I've wish'd it mine;

To wish for things that we do want

Who can resist? I'm sure I can't:

But still my heart is free from malice,

Nor envy I your splendid palace.

Contented with my humble lot,

The master of a lonely cot,

In which no scarcity is found,

Nor poutice, for I have no wound.

And long may you in health and

spirit,

Enjoy the mansion that you merit.

3. Ad-

3. *Adieu.* By Mr. JAMES POSTLETHWAITE, *Senior Royal Marines.*

In earnest seek the midst of the blest,
That you in bliss eternally may rest:
No search in those abodes ere reign,
Nor poultice needed, for there is no pain:
There sisters live in unity and love,
For malice dwells not in the realms above;
But white-rob'd truth the portico pervades,
And sin and smart are thrust to infernal shades.
There pleasure reigns without the least alloy,
And joy transendant but succeeding joy.

4. By Mr. JOHN SAVAGE, Green's Norton.

No mansion, with a portico,
Smartly adorn'd, is mine, no, no;
Nor do I this desire;
Contented with a humble cot,
I'll patient bear what is my lot,
From malice free, with only what
Our nature does require.

As round my table now do rise
Sev'n "olive branches," or six boys
Who have one sister-dear:
These for supplies look up to me,
Tis truth, as I in earnest be;
Chick-meeded thus, I scarce can see
Which way my course to steer.

Other answers to the Charades and Rebuses were also sent by Messrs. J. Baines, jun. E. Boulby, Arthur Daniel, jun. R. Froude, W. Hill, Hinchleensis, J. Herdson, Jas. Hood, Jas. Hood, jun. Lyab, R. Maffett, T. Nield, W. Oats, J. H. Parsons, W. Spence, D. T. Sheridan, John Smith, Joseph Smith, W. D. Snooke, Jos. Suffolk, C. Sumner, S. Treeby, John Tyson, T. Whicker, W. Whitaker, &c.

New ÆNIGMAS to be answered next YEAR.

1. ÆNIGMA 955. By Mr. THOMAS BAKER, Nuneaton.

I am in every city found,
With ivory palisaded round;
And tho' I never leave my place;
I'm lost and found by nymphs of grace.

Like Phœbus in his central car
Enlight'ning each revolving star,
Creating warmth I move below
The organs that divinely flow,
With songs of joy and hymns of praise,

Delighted with my hallow'd lays,
Yes, every poet I inspire,
And warily strike Erato's lyre:
For I'm an active entity,
Of life and sensibility;
A real automaton of love,
And all the gifts of matchless Jove.
Yet some assert, and from their
creed,

That evil does from me proceed;
But I with verity can say,
That I'm as free from guilt as they:
I am as innocently fair
As the most holy vestals are.
Was I engender'd of the earth,
Or did the clouds give me my birth?

Mysteriously in form I'm wrought
With due efficiency of thought:
Ah! there's the arch and subtle
foe [woe:
That makes me dread the wreck of
Yet, if with earnest zeal I strive,
And keep the hornet from the hive,
Doubtless I shall the victory gain,
And lasting happiness obtain:
Hence tell my name, ye sons of
art,
And keep me clean in every part.

2. ENIGMA 956. By Mr. RICH. CLAY, Manchester.

Where is the mind, o'ercome with
care,

For recreation to repair?

Where must it turn, or whither fly?

But to thy page, instructing Day,

There pleasure reigns—but with
his tale [hail!

Your servant comes—Diurnal

I am a friend of parts refin'd,

A leg before and two behind,

A mouth that's cut my head
throughout,

And like a boar I have a snout.

Two eyes—wherein tears ne'er
prevail [a nail.

But men thro' which pierce many

I seldom eat, save in the night,

Then sometimes growl to take a
bite;

Yet, when the hour of feasting's
o'er

I vomit to make room for more.

I'm known to act while Senates
jar,

While Bacchus cheers the Sons of
War,

While Kemble plays; or if you
search, [Church;

Perhaps you'll find me at the

Nay, at the Ball 'midst all that's
grand [hand,

A lac'd-coat youth yields me his

And numbers justly hold belief

I oft destroy a midnight thief.

Milton had not the gift to view
When old, how I could flames

subdue,

When young his sight I did ass

But mark, I am not an oculist.

Sons of the Nine, whose potent

skill, [the quill,

Deal truth and judgment from

Whose every glance can clouds
dispel

And quick a mystic object tell;

Say, what am I—withdraw the
mask [task.

Which faintly veils the simple

3. ENIGMA 957. By a FEMALE INCOGNITO.

A female hopes to be allow'd

Again to touch the lyre;

O! say not she is weak or proud,

In daring to aspire.

She's by ambition mov'd, 'tis true.

To mingle with the wise;

Yet would not wander from the
clue,

The path where wisdom lies.

And now, thus prefac'd let her
bring

The thing she has in view;

Tho' on a feeble muse's wing.

She trusts the traits are true.

In early life I sometimes soar,

Rebellious, headstrong, high:

Am what reflection must deplore

And heave the heart-felt sigh.

Controul's the subject of my hate,

Undisciplin'd by woe:

Alas! in this untutor'd state,

I send of English sow.

On some occasions I disgust,

To some I yield delight;

By some I'm censur'd as unjust,

Seldom exactly right.

Ingratitude or discontent

Oft murmurs at my laws,

And some with base malignant,

Would prove that I have flaws.

Religion says I must be check'd,

Subdued, or held in chains,

Ere on the altar, true respect

The offer'd incense gains.

Kind Gents, your Editor has
shown

A condescending mind.

In oft admitting (though un-
known)

A muse of female kind.

These six and thirty lines review;

In forty this shall end,

To prove the writer has me too

To please a generous friend.

6. *ÆNIGMA 958.* By Mr. PHILIP GOVE, Exeter.

When vivid lightnings thro' th' ethereal space,
 Display their flashes with terrific glare,
 And awful thunders thro' the vast expanse,
 Tremendous roll, and fill mankind with fear;
 When whistling whirlwinds do tumultuous rise,
 And shipwrecks, dreadful shipwrecks, do abound;
 When ocean foaming laves the nether skies,
 'Tis then I reign and terrors spread around:
 When hostile navies on the boisterous main,
 Engage with fury, and determin'd ire,
 Or armies on the wide ensanguin'd plain,
 Destruction spread with cannon, sword, and fire.
 When plague and famine lift their direful head,
 When earthquakes make convulsive nature groan,
 When conflagrations awful terrors spread,
 I reign profound, and triumph on my throne.
 I, mighty Victor, hold extended sway,
 O'er the vast empires of this spacious ball;
 My dreadful mandate all mankind obey,
 For I encounter, and I conquer all.

5. *ÆNIGMA 959.* By Mr. W. OATS; St. Just in Penwith, Cornwall.

Shall silence ever keep her peace- ful reign? [same in vain	Next, where Vulcanian clatter does resound, [uses sound:
Or shall the trembling muse pre- To veil in humble shades the rus- tic theme, [dream.	I'm fashion'd first, for various I great and small by turns am sometimes made, [trade:
Or scatter graces like a pleasing I am a part of this stupendous earth [terial worth;	And very useful in some kinds of 'Tis said a mighty fabric once was risen, [ring heaven;
Whose copious breast contains ma- From thence my parent by itself is drawn, [known.	Not 'gainst th' injunctions of un- And though my voice did there make no resistance, [assistance,
This seems incredible till fairly Now quite display'd before the light of day, [survey:	For many various friends I give Where mighty concourses of folks are found, [sparkling round,
Its various process you may now Then to the furnace doom'd, where flames elate [fate!	And where the sprightly glass goes And many with each other do con- tend, [end.
With honour spread irrevocable	Till I advancing soon the contest

6. *ÆNIGMA 960.* By Mr. WILLIAM PITTAM,
Barby, Northamptonshire.

I once was held in great repute,
 But now, alas! poor me;
 I'm almost banish'd from the world,
 By incredulity.
 Altho' I'm wise, to say a man
 Deserves my appellation,
 Would doubtless give him great offence,
 And hurt his reputation.

Yet, strange to say, it is not me,
 Would aggravate him more,
 Tho' what I am he would not be;
 Nor is it in his power.
 If by what I've already said,
 You do not guess my name,
 A wager may be safely laid,
 You are not what I am.

7. ENIGMA 961. By MR. SAMUEL RINGROSE, Cottingham.

In rural life, free from corroding care [snare, My parents liv'd secure from every Peace and serenity they then en- joy'd; [peace destroy'd. But soon, unfeeling man their For no alledg'd crime, or moral guilt, [blood was spilt, By murd'rous man my parents' And, since that day, my different parts do bear A discipline degrading and severe; For, by a selfish law man has thought fit, [loathsome pit, To plunge them in a deep and When took from thence they're doom'd to hardships worse, For now they're beat and bruise'd without remorse; Another master now takes them in hand, [command, And they obey, tho' hard is his For at his will all cut and gash'd they lie,	And free from guilt are stain'd with deepest dye. Into another's service now they're call'd, [best, and man'd; And pierc'd, and gash'd anew, and My scatter'd parts are now in con- tact brought, [throughout. I then receive my proper form Tho' I am useful found to young and old, [cold. I often am expos'd to wet and And what appears to add to man's disgrace, [lash'd face, He oft with dirt, besmears my po- And when at night I'm put away to rest, [guest; An empty belly is my constant Yet, in the morning, 'tis but fair to say, [thro' the day, I'm so well fill'd I want nought All that have us'd me find that I'm expedient, Adieu Diarians, I'm your most obedient.
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8. ENIGMA 962. By MR. W. SPENCER, Sappcote, near Hinckley.

Ere from chaotic atoms first did spring
 Those mighty orbs, whose glories far surpass
 The state and grandeur of an earthly king,
 With all the pomp of royalty—I was.
 Anterior to things created, I
 Was witness to this world's great natal day:
 And, highly favour'd of the Deity,
 Have been in Heaven, as sacred records say.
 When mortals fail to court my friendly aid,
 'Tis doubtful if they're number'd with the wise;
 For, know, a most impenetrable shade,
 I cast o'er folly in its deep disguise.
 By me the bonds of sacred friendship are
 More closely drawn, and they that will confide
 Their secret thoughts to my indulgent care,
 Shall have no cause to be dissatisfied.

Cleora once, the beauty of the plain,
Whose fascinating charms knew no decay;
Commanding homage from each rural swain,
Was by the arts of Strephon led astray.
At length deserted by the faithless youth,
Become a prey to the most poignant grief,
In me she learns the melancholy truth,
A case like hers admits of no relief.
A Gossip's tale.—The village ball is held,
The busy clack of scandal issues thence;
And shafts of malice, hard to be repell'd,
In all directions fly at her expence.
But should the swain to Hymen's court repair,
My magic wand the healing balm shall find;
And each vile tale, and each malicious sneer,
Be to a state oblivious consign'd.
The antient Romans, and Egyptians, knew
My consequence, rever'd, and worship'd me,
And taught my use.—I am an object too
Of sense, but in a negative degree.
As first of sciences behold me then;
Companion of the wise—to them make known
The knowledge of the thoughts of ether men,
And leave them in possession of their own.
Against the gusts of passion I'm a charm:
Far from the field of battle I abide;
Tho' never seen, I sometimes cause alarm,
Tho' never felt, I often am destroy'd.

9. **ÆNIGMA 963.** By Mr. D. T. SHERIDAN.

In Marathon's fam'd plains, and the known straits
Of Salamis, where Freedom's sacred flame
Inspir'd the bosom of each martial swain
And made each Greek a hero, I alone
Was thought the only adequate reward
For such transcendant virtue. Blest with me,
The darling meed of many a well-fought day,
The happy victor seeks his peaceful home,
Where aged parents hail his safe return,
And love and beauty bless his future days.
Not always to the valiant sons of Mars
Am I confin'd, the bards whose lofty muse
Recorded heroes and their matchless deeds
Rewarded virtue and degraded vice,
And sung in dulcet softly flowing lays,
The various blessings of the rural life,
Have shar'd my sweetest smile. O Sophocles!
When all consenting Greece on thee bestow'd
My blooming charms, thy loud and feeling heart,
Oppress'd with transports of extatic joy,
Burst with the mighty impulse! fondly view'd

My lovely form, and with a smile expir'd,
 While Rome in virtue as in arms excell'd,
 And her victorious chiefs alike subdued
 The fields of Ceres and of frowning Mars
 'Twas I with godlike ardour fir'd their souls,
 And gave them conquest. Let the shield of Rome,
 Let brave Dentatus and Camillus speak,
 Who in so many sanguinary fields
 Have often wooed me, and as often won!
 In Britain too I fan the heav'nly flame
 Of learning and of freedom. Sweet the bliss
 When I reward the long laborious toil
 Of patriots, bards, and heroes. I with ease,
 As with a magic wand, from vulgar minds
 Elicit sparks of genius, and exalt.
 Imbu'd with science and the lib'ral arts,
 Not the mere pageant of a public show,
 To day adorn'd, to-morrow thrown aside,
 But the companion of exalted man
 That soothes his sorrows and augments his fame,
 Where I'm neglected, all th' ignoble weeds
 That choke and canker virtue, rankly grow
 To foul luxuriance. Ah! ye great, beware
 How ye despise for baubles of mere pride
 My sterling worth and influence divine.

10. ENIGMA 964. By Mr. W. D. SNOOKE, Woolbridge.

Your servant, Gents.—Permit me as a friend
 My best respects to offer; and attend
 Whilst briefly I my properties pourtray,
 That should we chance to meet another day,
 In spite of this disguise in which I'm dress'd,
 I may be clearly on your mind impress'd.
 —Know then, I've almost constantly a seat
 Within the stately mansions of the great,
 There I reside, there I delight, and not
 Within the precincts of the lowly cot.
 Think not from this, dear Gents, that I'm inclin'd
 To pride and luxury; or am confin'd
 To spacious courts.—With innocence I prove
 Companion oft, amid the shady grove.
 —Here, when the love-sick maid, oppress'd with pain,
 With rural pipe deplores her absent swain,
 I add a sweetness to the plaintive strain.
 In gothic ruins, moss-clad tow'rs, I dwell;
 Or where the stream meanders through the vale.
 In gloomy caverns I am often found;
 On craggy cliffs, or by the lofty mound.
 Though seldom am I on the barren plain;
 If there you seek me, you may seek in vain.

When

When lightnings flash, and deafning thunder peals,
 Perchance I then surround the neighbouring hills,
 When hounds and huntsmen in the chase combine,
 Their general noisy chorus oft I join;
 And when old Reynard yields his breath, and all
 The crew assemble in the spacious hall,
 Amongst the jovial broods I there attend,
 And to their clam'rous mirth assistance lend.
 So when the war-whoop angry heroes swell,
 My voice is heard amid th'astounding yell.
 Yet say not hence, I nought but vice pursue,
 For I'm at church as constantly as you;
 When there, petitions jointly you prefer,
 Then likewise I address to heav'n a pray'r.
 These hints remember, (for I close them here,)
 And know me when I next salute your ear.

11. ENIGMA 965. By Mr. SAM. TREERY, Plymouth.

Geometers their senses strain	For mother Eve without my aid,
My simple being to explain;	Had ne'er her fig-leav'd apron
Yet they have proved, all you can	made.
see,	The orator can't speak with grace,
To be composed alone of me;	Except he put me in my place.
By this you'll think I'm great,—	Demosthenes could never plead
but, no—	Without my friendly helping aid:
The least of any thing you know.	Then since so useful; I may say
And, yet their fame, how'er so	I'm made a study every day.
great,	Grammarians say I measure time;
Without my aid were incomplete.	The poet says I make prose rhyme.
The architect can't columns rear	Grammarian no one e'er can be,
Nor plans can draw, without I'm	Except he justly uses me.
there:	I claim, with ev'ry thing of worth,
And Newton said by me alone,	A parent in our mother Earth,
His fluxions could be quickly	Here you may wonder, but be-
known.	hold! [told,
But not alone to man a friend,	The printer knows the truth I've
Each lady will my use commend;	I'm large, I'm small; I quickly fly;
I make them well employ their day,	Employ me well before you die:
Assist in needlework and play	Enigmas all must end with me,
In needlework there's not a shade	Was always last, and still must be;
That witless me could e'er be	But stop my name, too much I've said,
made.	My name e'er this is open laid.

PRIZE ENIGMA. By Mr. JOHN SINSON, W. Bordon.

Ye British youths whose gen'rous bosoms glow,
 When dire Affliction tells her tale of woe;
 'Fore your august tribunal I appear
 A suppliant negro, and a wretch sincere;
 Urg'd by despair, I raise the mournful strain:
 Of racks, and blows, and fires, and floods, complain;

Fix'd in the centre of surrounding fires,
 Where all the rage of Phlegethon conspires;
 Where bubbling waters hiss, and thunders roar,
 Black whirlwinds rise, and shake the solid shore;
 There while around the poisonous vapours play,
 And clouds on clouds, commingling hide the day;
 Unmov'd I stand—so tyrant man ordains,
 Mocks my distress, and aggravates my pains.
 From grand-ire Jubal, first I bore abuse
 Who doom'd my race, subservient to his use,
 My lot appointed, and my form design'd
 My limbs distorted and my parts disjoint'd,
 Dubb'd me, O Heav'n, vile man's eternal slave
 To serve him from the cradle to the grave.
 If from my cell, I turn on Heav'n my eye;
 What pitchy spirals intercept the sky.
 Below — what heaps of peaceful dust are laid!
 (The prime material of which man is made!)
 Around—how blest, magnificent the scene!
 The roast goose sparkling and the young pea green
 Great sirloin reeking, from the murderous knife,
 The glitt'ring tea-trays and the frugal wife.—
 Too oft, alas! at Persecution's call
 I rust in state, on prison's dreary wall
 A constant sentinel,—unknown to change;
 I mark the hounds for criminals to range;
 Arrest in dog days, Sol's meridian glow,
 And o'er the clanking rooms a dubious twilight throw.
 To fill my maw, to mend the fatal spoil,
 Northumbria sends her sable sons to toil
 In darksome caves—insatiate I devour
 Mountains of food, and hourly long for more.—
 Sometimes in murder, where nightly plunderers stray,
 I rob Grimalkin of her lawful prey;
 Attend the sickly artist at the loom:
 A sure companion at the drawing-room:
 With Cooke I sail'd the vast Pacific o'er,
 And cheer'd his toils on Nootka's stormy shore.
 A curious Infidel, my Creed is such,
 I love the parson, yet renounce the church;
 Protect him from December's deadly rage—
 Assist his studies, and illumine his page.
 By curves I'm guarded, and by cook-maids spurn'd,
 By children dreaded, and by poets scorn'd.
 The 'tuneful fool,' that in descriptive song
 Roams woods and wilds, and banks, and dreams among,
 Culls from dame Nature her sereneest flowers
 And into rhyme the frenzied spirit pours.
 Say, is it just, with more than poet's rage
 My form be exil'd from his polish'd page.
 Me should the muse in lowliest garb array,

And sense demand me with imperious sway,
Should grave authority to nerve his rhymes
Attest my merits in Miltonian times—
Ignoble wretch! of shape uncouth and mean;
By bards rejected, and in books unseen,
Go frame in Billings-gate the loud rough roar,
And add to blacksmiths bill one item more."

NEW CHARADES AND REBUSES.

1. CHARADE. By Mr. J. HAWKES, Finedon.

My first at the door gives old Gripus relief,
And aids to secure him from rogue or from thief:
Yet the charms of my next so bewitches the elf,
That he grudges all others and half starves himself,
Nor yields to my whole with a downright good will,
Unless it contributes his coffers to fill.

2. CHARADE. By Mr. JOHN HERDSON, London.

My first and my second are each known to be
A load for a horse, and that you will see;
But great is the contrast when joined together,
They almost become as light as a feather.

3. CHARADE. By HINCKLEIENSIS, addressed to Mr. SPENCER.

Once more a new charade I send,	My tiny second may be found
In hope it will amuse my friend:	Where woods and coppices abound.
To read it o'er he'll not refuse,	When you and I together meet,
Because his tent instead of new:	In kitchen, parlour, house, or street,
A smiling infant is my first	My simple whole, without delay,
When by its tender mother nurs'd;	Will help to pass the time away.

4. CHARADE. By Mr. JOHN SMITH, Abon Park.

My first's a material of very great use;
Through my next often flows a delectable juice;
My whole pays our island an annual visit,
And is greatly esteem'd.—Diarians, what is it?

5. CHARADE. By Mr. WILLIAM WHITAKER, Halifax.

My first existed ere mankind had birth,
And reigns alternately o'er half the earth:
My next in Paradise a pasture found,
Stretch'd in the shade, or bounding o'er the ground:
My whole, alas! when e'er its powers confessed,
Malignant, proves a direful foe to rest.

1. REBUS. By ELARD DRANCIE.

In me is often seen a gentleman's delight;
 Behead me, then you have the thing on which I write;
 Once more my head take off, & you will then appear
 What soldiers all should be when they go to the war.

But if you then transpose and place the letters right,

A Christian name for men will soon appear in sight.

2. REBUS. By Mr. WILSON JOHSON, Grassy Nook.

I'm known to seamen, it is clear,

For I direct them how to steer.

Cut off my head, and then behold;

An animal just six years old:

Now cut again, and you will find

What Nature ever leaves behind.

If still another hint you wish,

Curtail me, and you'll find a fish.

3. REBUS. By Mr. GEORGE SIMPKIN, Finedon.

Read Holy. Write my first to see,

There pious Job doth mention me,

Then join a letter to the same,

The whole will form a noted name.

By Diary handed down to fame.

QUESTIONS CRITICAL and PHILOSOPHICAL.

I. QUÆST. 331. By Mr. W. HILL, Oldham.

What was the nature of the Cross generally associated with the name of Constantine? Was it real or imaginary?

II. QUÆST. 332. By SARCOTIENSIS.

Hops and Kidney-beans wind in different directions round their supporters: can any natural reason be assigned why they do so?

III. QUÆST. 333. By Mr. JOSEPH SUFFOLK, Jun. Barwell.

Generally, about sun-setting, the clouds in the western sky appear parallel to the horizon. Why do we not see them in that position at any other time of the day?

IV. QUÆST. 334. By CLERICUS.

In Lord Chancellor King's Enquiry relative to the Constitution of the Primitive Church, page 15, that learned author infers from the analogy of the Greek word *ἐκκλησία* and the English word *church*, that in the early ages the bishop's cure was no larger than a modern parish. Was the inference, so far as the meaning of the words is concerned, correct?

Answers to the Questions proposed last Year.

(1) **QUEST. 1036.** Answered by INVESTIGATOR, the Proposer.

Suppose the quantity $a = [n\sqrt{a} - (n+1)\sqrt{a}]^2 = n^2a - 2(n+1)a\sqrt{a} + (n+1)^2a$; that is, dividing by a , $1 = n^2 - 2n(n+1) + (n+1)^2$. Then, this equation will be true if n be any integral positive number: let $n=1$, then $a = [\sqrt{a} - 2\sqrt{a}]^2 = a - 4a + 4a$; and therefore $\sqrt{a} = \sqrt{a - 4a + 4a}$. Taking the root by the usual method, $a - 4a + 4a(\sqrt{a} - 2\sqrt{a}) = -\sqrt{a}$ the negative root. we have

$$\begin{array}{r} 2\sqrt{a} - 2\sqrt{a} - 4a + 4a \\ -4a + 4a \end{array}$$

And an analogous result would flow from assuming $n = 2, 3, 4$, &c.

Similar to this were the Answers transmitted by Messrs. Lamplugh, Edward Page, R. France, John Smith, and R. Taylor.

Other solutions were received from Messrs. Ambulator, John Baines, jun., Rev. J. Furnass, Ab. Jaques, G. Jones, and John Williamson.

Mr. John Abram, of Canterbury, gave an ingenious answer, upon the supposition that it was required to find the root $\frac{1}{\sqrt{a}}$ by a direct method, instead of taking it equal to $\frac{1}{a}\sqrt{a}$. We regret that his curious investigation is too long for insertion here.

Some of our Correspondents refer to No. 13 of *Leybourn's Repository* for a good solution to this question by Mr. White; but the Proposer of the question in this Diary could not be aware of that solution, as is evident from the date of the respective publications.

(2) **QUEST. 1037,** answered by Mr. W. G. HORNER, Bath.

Let AB, AE, represent the pole and its shadow in the first position, Ab, Ae, the pole and shadow in the second position, or when $\angle BAb = 30^\circ$, and drop the perpendicular bc. AD the mean of AE, Ae, is equal to AB, and AC=CD, ED=De, by the conditions of the problem. Also, AE (=2CE + ED) : Ce (=CE + 2ED) :: AB : bC (a given ratio) :: m : n :: rad. : sin. 60° . Dividendo et multiplicando, CE - ED : CE + ED :: $3m - 3n : m + n$. Dividendo ED :: $2CE + 2ED = AD = AB$:: $2n - m : 2n + 2m :: \sqrt{3} - 1 : \sqrt{3} + 1$. $\therefore 10 : 5(3\sqrt{3} + 3) = 50.980762$ feet, the height of the pole.

Answered also, by Mr. JOHN SMITH, Mr. W. D. SNOOKY, Mr. JOSEPH YOUNG, the Proposer, and T. H.

Let AB and Ae be the two positions of the pole, AE and Ab its shadows. Put $a = \sin. bAc = \sin. 60^\circ$, $b = \cos. bAc$, rad. = 1, $AB =$

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2

2.

2

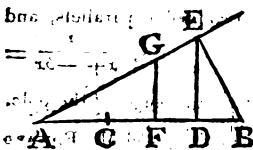


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Proposition T. 78
(otherwise, by Messrs. JOHN BUTTERWORTH, ANT. COOK, REV. A. EMMETT, W. STRINGER, and W. WRIGHT.

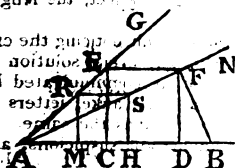


Analysis. Suppose it done, C and D the required points; erect DE perpendicular to AB and $CD = DE$, and draw AE: now $CD:AC$ being a given ratio, CD , and consequently $DE:AD$ a given ratio (see Euclid's Data, Prop. 7.) Hence AE is given in position, and $CD^2 + BD^2 = DE^2 + BD^2 = BE^2$, is to be a minimum, which it

is when perpendicular to AE. Hence the following

Construction. In AB take AF of any length, and perpendicular to AB take EG: AF: DE: AD; through A and G draw an indefinite right line, perpendicular thereto draw BE; then DE perpendicular to AB, divide AD in C so that AC: CD may be the ratio given by the question, and it is done.

Another solution, by OUTCROFT, of Penrith.



Analysis. Let the given line AB be divided in the points C and D in the manner required, so that AC: CD may be a given ratio, and $CD^2 + DB^2$ may be a minimum. Draw CE perpendicular to AB and equal to CD, and EF parallel to AB and equal to CD or CE, and draw FD perpendicular to AD; then the figure CEFD is a square. Join AE, AF, BF; then since AC: CD is a given ratio, and $CD = CE$, therefore AC: CE is a given ratio: hence the locus of the point E is a straight line, AEG, given by position, and the triangle AEC is given in species. Therefore the ratio of AE: CE or FE is given, and the angle AEF is given: therefore the locus of the point F is also a straight line AFN given by position: also, $CD^2 + DB^2 = FD^2 + DB^2 = BF^2$, to make which a minimum, since the point B is given by position, the line BF must evidently assume a position perpendicular to AFN. Hence this

Construction. In AB take any point M, from which draw MR perpendicular to AB, and make AM: MR in the given ratio of AC: CD; join AR, and through the point R draw RS parallel to AB and equal to MR; join AS with the indefinite straight line ASN, from the point B draw BF at right angles to ASN, and through F draw FE parallel to AB, meeting AR or AR produced in E; from the points E and F draw EC, FD, each perpendicular to AB; then is AB divided in the points C and D in the required manner.

Demonstration. For, by parallel lines AE: AR: EF: RS: EC: RM; but RS=RM, therefore EF=EC=ED; and AM: MR: AC: CE: AC: CD in the given ratio; and $CD^2 = DE^2$, therefore, $CD^2 + DB^2 = BF^2$, which will be a minimum, since BF is the least line which can be drawn from the given point B to the straight line AFN, given by position.

Answers to this problem were likewise sent by Messrs. Abram, Magshaw, Daniel, jun. T. H. Horner, Jaques, Jones, Lamplugh, Majors

Maffett, Nicholson, Page, Prance, Sheridan, Snooke, Taylor, Treeby, Williamson, Young, &c.

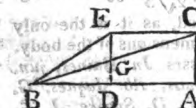
(4) QUEST. 1039, answered by Messrs. JONATHAN CROWTHER, of Woodhouse Grove; GRIFFITH JONES, of Warrington; and D. T. SHERIDAN, of Stafford.



Let ABC be any triangle, right angled or not, having the given base AB and the given vertical angle ACB; bisect the angles CAB, CBA, by the straight lines AD, BD, intersecting each other in D; that, by a well known proposition will be the centre of the inscribed circle. Then, since the angle ACB is given, the sum of the angles CAB and CBA is also given, and therefore the half of this sum, or the sum of the angles DAB and DBA, is given; and consequently the angle ADB is given. The points A and B also are given; therefore the locus of the point D is the segment of a circle capable of containing an angle equal to the given angle D, that is, containing an angle equal to the supplement of half the given vertical angle.

Answers, for the most part similar to the above, were given by Messrs. Abram, Ambulator, Bagshaw, Baines, jun. Butterworth, Cook, Furnass, T. H., Horner, Jaques, Lamplugh, Maffett, Nicholson, Omicron, Page, Prance, Stringer, Snooke, Taylor, Treeby, Williamson, Weston, Winward, and Youle.

(5) QUEST. 1040, answered by Mr. JOSEPH HINE, the Proposer, Mr. THOMAS CHARLTON, of Newbrough, and Mr. JOHN SMITH, of Alton Park.



Let AB be the horizontal plane, AC the vertical wall, and BC the bar. Through G, its centre of gravity, draw DE parallel and equal to AC; then, by mechanics, the weight of the bar and its pressure at B are respectively as ED and EB. Put $BC = 6 = a$ and $AC = DE = x$; then $BD (= \frac{1}{2}BA) = \frac{1}{2}\sqrt{(a^2 - x^2)}$; whence $EB = \sqrt{(x^2 + \frac{1}{4}a^2 - \frac{1}{4}x^2)} = \sqrt{(\frac{3}{4}x^2 + \frac{1}{4}a^2)}$. By the question, $2ED = EB$; that is, $2x = \sqrt{(\frac{3}{4}x^2 + \frac{1}{4}a^2)}$; hence $x = \sqrt{\frac{a^2}{13}} = \frac{6}{\sqrt{13}} = \frac{6}{13}\sqrt{13} = 1.6641$.

Then, by trig. $BC : AC :: \text{rad.} : \sin. CBA, 16^\circ 6' 8''$, the inclination required.

Another solution, by Mr. JOHN BUTTERWORTH, Haggate, near Oldham.

This Gentleman, assuming the same principles, remarks that the forces act in the directions CE, ED, and CA, and are as the sides of the right-angled triangle BDE. But the pressure at B is double to the force acting in the direction ED; therefore $BE = 2ED$, or $ED : BD :: 1 : \sqrt{3}$. But BG being equal to GC, $EG = GD$, therefore, $GD : BD :: 1 : 2\sqrt{3}$; whence the angle BGD is found $= 73^\circ 53' 52''$, or $GBD = 16^\circ 6' 8''$ nearly, the inclination of the bar required.

Another answer, by Messrs. J. BARNES, jun. of Reading; W. BARNES, of Litton; JONATHAN CROWTHER, of Woodhouse Grove; R. PRANCE, of Plymouth; and W. D. SNOOKE, of Woolbridge.

Let ACE represent the bent rod, DB the spur, and W the weight. Put $CE=a=50$, $DB=b=60$, and $GD=x$, then $\sqrt{b^2-x^2}=BC$, and by Ex. 7, p. 354, vol. III. *Hutton's Course*, $\frac{CE \times W}{CD} = \frac{aW}{x}$ the ver-

tical pressure of the horizontal arm on the spur, and $\frac{CE \times W}{BC}$ the

horizontal pressure against the vertical arm; therefore, $\frac{aW}{\sqrt{b^2-x^2}} = \frac{2aW}{x}$, or $x = \frac{b}{5} \sqrt{5} = 26.8328$ inches $= CD$, $DE = 23.1672$ inches.

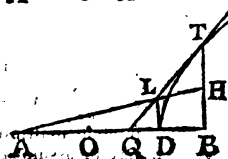
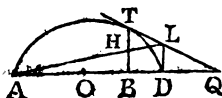
Otherwise, by Mr. ABRAHAM JAKES, of Penrith; and Mr. JOHN SMITH, Alton Park.

By the principles of Mechanics, $\sin. CDB : \sin. CBD ::$ vertical pressure of CE on DB : horizontal pressure of DB against AC (see the preceding diagram). These pressures are, by the question, as 2 : 1. Therefore, (the sides of triangles being as the sines of the opposite angles) $CB=2CD$. Assume $CD=1$, then $CB=2$, and $DB=\sqrt{5}$. But $DB=60$; therefore it will be

$$\sqrt{5} : 60 :: \begin{cases} 1 : \frac{60}{\sqrt{5}} = \frac{60}{5} \sqrt{5} = 12\sqrt{5} = 26.8328 = CD. \\ 2 : \frac{120}{\sqrt{5}} = 24\sqrt{5} = 53.6656 = CB. \end{cases}$$

Answers were likewise contributed by Messrs. John Butterworth, Thomas Charlton, Ant. Cook, Rev. J. Furness, W. G. Horner, Griffith Jones, M. Lamplugh, R. Maffett, Edward Page, J. T. S. Treeby, and John Williamson.

(7) QUEST. 1042, answered by Mr. P. NICHOLSON, Architect, 10, Oxford Street, London, and Mr. RICHARD TAYLOR, Carlisle.



Demonstration. Bisect AD in O; produce AD and TL till they meet in Q. Then, by sim. tria. $BQ : DQ :: BT = 2BH : DL :: 2AB : AD$; $\therefore BQ : DQ :: 2AB : AD$; and $BQ : DQ :: AB : AO$; also, $(BQ-DQ) = BD : BQ :: (AB-AO) = OB : AB$, $\therefore AB \cdot BD = OB \cdot BQ$. Now the equality of these rectangles indicates TL to be a tangent at T, in both curves. (*Simson on the Ellipse*, Prop. 17, Cor. 1; and *Hyperbola*, Prop. 35.)

Another demonstration, by the Rev. J. FURNASS, of Ponteland, and
 17919 another by Mr. W. G. HORNER, of Bath.

Let O (figure to the preceding answer) be the centre of the ellipse or hyperbola, Q the intersection of TL with the axis, or of their continuations. By similar triangles, $QD : QB :: DL : (BT =) 2 HB$ and $BL : HB :: (AD =) 2 OD : AB$.
 Ex aequo, $QD : QB :: OD : AB$.
 Alterna. $QD : OD :: QB : AB$.
 Compo. & Divi. $(OD + QD =) OQ : OD :: (AB + QB =) AQ : AB$.
 Alterna. $QO : QA :: QD : AB$.
 Divi. $QO : (QA - QD = AO =) OD :: OD : (AB - OD = AB - AO =) BO$.

And this last proportion comprehends a well-known property of the tangent to an elliptic or hyperbolic curve. See Hutton's Course, vol. ii. Th. 7. Ellipse and Hyperbola.

COR. (by Mr. Horner.) In the parabola A is at an infinite distance, therefore HL is there parallel to QB, and consequently $DL = HB = \frac{1}{2} BT$. Therefore $QD = \frac{1}{2} QB$, the known property of the tangent to this curve.

The Editor regrets much that he was obliged to omit the elegant demonstration of Mr. Moore, the proposer, applicable to both curves: also that he can only specify the names of the following ingenious Gentlemen who favoured him with demonstrations, viz. Messrs. W. Bagshaw, J. Baines, jun. John Butterworth, Ant. Cook, G. Jones, Matt. Lamplugh, Edward Page, D. T. Sheridan, W. D. Snook, W. Stringer, W. Wright, and Edward Young.

(8) QUESN. 1043, answered by MESSRS. ANT. COOK, JONATHAN CROWTHER, ABRAHAM JAKES, GRIFFITH JONES, and JOHN WILLIAMSON.

Let $x =$ com. diff. and $nx =$ the middle number, then $nx - 3x$, $nx - 2x$, $nx - x$, nx , $nx + x$, $nx + 2x$, and $nx + 3x$ are the numbers, and $7n^3x^3 + 84nx^3 =$ the sum of their cubes, which is to be a biquadrate number: suppose it $= m^4x^4$, then $x = \frac{7n(n^2+12)}{m^4}$,

where n may be any number greater than 3, and m any number taken at pleasure, if $n=4$, and $m=2$, then $x=49$, and the numbers will be 49, 98, 147, 196, 245, 294, and 343. Again, if $n=6$, and $m=2$, then $x=126$, and the numbers will be 378, 504, 630, 756, 882, 1008, and 1134.

Otherwise, by Mr. JESSE WINWARD, of Mullingar, and Messrs. ROBERT MAFFETT and SAMUEL TREEBY, of Plymouth.

Put x , $2x$, $3x$, $4x$, $5x$, $6x$, and $7x$, for the numbers required, which are obviously in arithmetical progression; the sum of the cubes of these is $784x^3$, and this per question must be a biquadrate whole number. Equate it to a^4x^4 , and there results $x = \frac{784}{a^4}$. Whence the required numbers will be expressed by this fraction multiplied into 1, 2, 3, 4, 5, 6, and 7, respectively, where a may be assumed at pleasure.

(The Editor, 1815, and the Rev. J. Forster, of Ponteland.)

Let $AB = a$, $BC = b$, the abscissa $BM = x$, the ordinate $MP = y$, the equation to the curve is $y = \frac{b+x}{x} \sqrt{a^2 - x^2}$. Therefore area

$$= \text{ft.} - \frac{(b+x)^2}{x} \sqrt{a^2 - x^2} = \text{ft.} \left(- \frac{bx}{x} \sqrt{a^2 - x^2} - x \sqrt{a^2 - x^2} \right) = \text{ft.} \left(- \frac{a^2 bx}{x \sqrt{a^2 - x^2}} + \frac{bx^2}{\sqrt{a^2 - x^2}} - x \sqrt{a^2 - x^2} \right) = \left(\frac{1}{2} ab + hL \frac{a + \sqrt{a^2 - x^2}}{a - \sqrt{a^2 - x^2}} \right) -$$

$b \sqrt{a^2 - x^2} + \frac{1}{2}$ segment to radius a and cosine x .

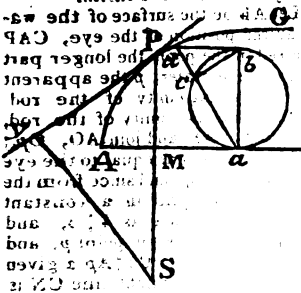
When $x = a$, these expressions all vanish; wherefore they need no correction. When $x = 0$, the infinite area becomes $\frac{1}{2} ab \cdot hL \frac{2}{0} = ab +$ quadrant to radius a ; where the first term being an expression of infinity, renders the remaining two of no significance in comparing the areas corresponding to different values of AB ; and the area will consequently be a maximum when the coefficient ab of that term is such. But $a + b$ is a given quantity: $\therefore a = b$, or AC , must be bisected in B .

Another solution, by Messrs. GRIFFITH JONES and ANT. COOK.

Let $GB = a$, $BA = b$, $CA = m$, $7854 = n$, the abscissa $= x$, and the corresponding ordinate $= y$. Then by Simpson's Fluxions, art.

131. $\frac{a^2 \sqrt{(b^2 - y^2)}}{b^2 - y^2} + \sqrt{(b^2 - y^2)}$; whence $y \dot{x} = - \frac{ab^2 y}{y \sqrt{(b^2 - y^2)}} = - \frac{ab^2}{\sqrt{(b^2 - y^2)}}$, or, putting $z = \sqrt{(b^2 - y^2)}$, we have $y \dot{x} = \frac{ab^2 z}{b^2 - z^2} + z \sqrt{(b^2 - z^2)}$. The fluent of the first part of our given quantity in an infinite series is $= ax \times (1 + \frac{z^2}{3b^2} + \frac{z^4}{5b^4} + \frac{z^6}{7b^6} + \dots)$; which, when $y = 0$, or the space is infinite, becomes $ab \times (1 + \frac{1}{3} + \frac{1}{5} + \frac{1}{7} + \dots)$ $= ab \times$ a constant quantity (s). But the fluent of $z \sqrt{(b^2 - z^2)}$ is (in the present case) a quadrant of a circle whose radius is $b = n\delta$; therefore $ab + n\delta^2$ is to be a maximum. Putting the expression into fluxions, writing $m = b$ for a , and reducing, we have $\delta \dot{m} = \frac{m^2}{s - n}$. But s is infinitely greater than n ; therefore $b = \frac{1}{2} m$; that is, the asymptote bisects the given line in the point B .

Solutions were likewise sent by Messrs. Jackson, Maffett, Shook, Stringer, Taylor, Treby, Williamson, and Wiseman.



Whatever be the law of the force, and the angle $dbc = dab = mSs \therefore$ the point s describes about $S'm$ a line similar to what the point d describes about ab , but the point d moves in a straight line \therefore the point s moves also in a straight line.

Let the equation "of the earth's orbit" be $y = \frac{b}{a} \sqrt{2ax - x^2}$; x

be assumed; also, let the time be t . We have $i = \frac{\dot{y}}{u} = \frac{x}{\rho}$; and for

any function of x or y . By the other equation $v^2 = \frac{y^2}{x^2} \times \beta^2$; and,

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$2/\phi y$), which must be invariable for every value of x ; taking the fluxion $a^2(\phi^2 - 2/\phi y) - \phi(a-x)^2 = 0$; therefore a^2 is the value of $2/\phi y$ when $x = a$; $\phi^2(a-x)^2$, when x is taken therein $= 0$: Hence, ϕ^2 is known,

being $= \frac{a^2}{b^2} \cdot \frac{y^2}{a-x} \cdot (a^2 - 2/\phi y)$, in like circumstances. Thus, then, whatever ϕ , "the law of the force," is, we have the velocity in the curve $= \sqrt{\phi^2 + u^2}$; and the method of determining the apparent path of the star is shown in Simpson's Essays, and in different Systems of Astronomy. In the case before us it will be a right line.

The elegant solutions by Mr. W. G. Horner and Mr. G. Jones were omitted for want of room.

Solutions were likewise sent by Messrs. Furness, Maffett, Treedy, and Young.

New Mathematical Questions, to be answered in next Year's Diary.

(1) QUEST. 1050. By AMBULATOR.

To find two whole numbers, such that the difference of their squares, and the difference of their cubes, shall be both squares.

(2) QUEST. 1051. By Mr. SAMUEL TREEDY, Plymouth.

It is required to exhibit a more concise practical rule for conic and pyramidal frustums, than has yet been given in any treatise of mensuration.

(3) QUEST. 1052. By Mr. W. WESTON, Birmingham.

Let DAE be a circle, AB the diameter, and CFA a smaller circle, touching the former internally at A, CDA its diameter; from D, the centre of the larger circle, draw DFE at right angles to the diameter AB, cutting the small circle in F and the large one at E, the intercepted parts FE and BC are given to determine the two circles geometrically.

(4) QUEST. 1053. By Mr. JOHN BAINES, jun. Reading.

In what latitude is the angle included between the hour lines of 12 and 1 on a horizontal dial, double of that included between the said hour lines on a vertical South dial?

(5) QUEST. 1054. By Mr. D. T. SHERIDAN, Stafford.

In every right angled triangle, it will be as the perpendicular is to its adjacent segment of the base made by the line bisecting the vertical angle, so is the base to the difference of the hypotenuse and perpendicular. Required a demonstration.

(5) QUEST.

(6) QUEST. 1055. By Mr. RICHARD TAYLOR, Carlisle.

To determine, by a geometrical process, the distance of a planet from the sun, at the time of its nearest approach to the middle of the eccentricity of its given elliptical orbit.

(7) QUEST. 1056. By Mr. JOHN BUTTERWORTH, Haggate, near Oldham.

Having given the point P in a right line given in position, and having given a circle in magnitude and position, it is required to find another point C in the said right line, so that if CB be drawn parallel to another line given in position, meeting the circle in A and B, $PC + AB$ may be either equal to a given line or a maximum.

(8) QUEST. 1057. By Mr. PETER NICHOLSON, 10, Oxford Street.

Let ABC be any given angle, and let D, D, be any number of given points in the line AB, let perpendiculars DE to AB be so drawn as to meet BC in the points E, E; then, if a number of circles of equal radii, be described from E E as centers, and tangents DM be drawn from the several points D to their respective circle, and DF be set off upon DE equal to the corresponding tangent DM; it is required to determine the locus of the points F, F, &c.

(9) QUEST. 1058. By Mr. THOMAS WHITE, Dumfries.

Let the element, or fluxion, mc , of a curve bounding a plane mMc be projected on a plane aMb by perpendiculars ma and cb , and let the angle aMb be equal to dv or v ; the tangent of the angle

$mMa = s$, and the radius vector $Mm = r$; then $cm^2 = \frac{r^2 dv^2}{1+s^2} + dr^2 + r^2 ds^2$

$(1+s^2)^{3/2}$. (See *Laplace, Mecan. Celeste*, tom. i. p. 256.) Required the proof.

(10) QUEST. 1059. By OMICRON, of Penrith.

Let the body M move uniformly from A towards Q with the celerity m , and let another body N proceed from B at the same time with the celerity n . To determine, geometrically, the direction of the latter BD, so that the distance MN of the two bodies when the latter arrives in the way or direction AQ of the former, may be the greatest possible. (*Simpson's Fluxions*, Prob. 14. de Max. et Min.)

(11) QUEST. 1060. By Mr. W. G. HORNER, Bath.

In any right line AD, make $AB = DC$, and draw the indefinite perpendicular BZ, to any point E, of which draw CE, DE, and produce CE to P, till $CP = DE$. Required the quadrature of the curve APX, which is the locus of P, and the situation of B and C when the infinite area between the curve and the asymptote is a maximum.

(12) QUEST. 1061. By Mr. THOMAS WHITE, Dumfries.

Let ABC and A'B'C' be arcs of given circles given in position; B and B' being in the line joining their centres A and A', and their con-

vergencies

vexities BC and B'C' fronting each other. The line CC', as also the point P therein are given. What is the equation of the locus of P?

N. B. This is not a question of mere speculation, but has reference to a well-known mechanical contrivance. See *Gregory's Mechanics*, ed. 3. pl. 39, vol. II. No. 9^a D.

(13) QUEST. 1062. By Mr. GEORGE HARVEY, Plymouth.

Required the relation of x to y in the equation $yx - xv + x^2y - 2xyv - 2v^2y - v^2yv - v^2y$.

PRIZE QUESTION. By PATER FAMILIAS.

Notwithstanding the various solutions which have been given to the problem of the *shortest twilight*, it is imagined that there is still room for improvement in point of simplicity. It is required, therefore, to give a new solution from the obvious principles of spherical trigonometry or of projection.

. The Prizes have this year been allotted thus:

Ten Diaries to Omicron, of Penrith, the first Math. prize.

Eight Diaries to Mr. W. G. Horner, of Bath, the second do.

Nine Diaries, to *A Female Incognito*, for answering the Prize Enigma.

Nine Diaries to Mr. John Smith, Alton Park, for his Gen. Answer.

They will please to send for their respective prizes to Mr. GEORGE GREENHILL, at Stationers' Hall.