

A.A.

ΠΡΑΓΜΑΤΕΙΑ  
ΤΗΣ  
ΑΚΑΔΗΜΙΑΣ  
ΑΘΗΝΩΝ

24











45317

ΑΚΑΔΗΜΙΑ ΑΘΗΝΩΝ

Α





Π

ΑΚ

ΓΡΦΕΙ



1. — JOHN XANTHAKIS

The Areas of

2. — ΔΗΜ. ΑΘ. ΠΑΝΑΓΙΩΤΗΣ

Ἐπίδρασις τῆς  
εἰδικώτερον τῆς

3. — ΕΡΡ. ΣΚΑΣΣΗ

Tethea καὶ Τ

4. — ΣΠΥΡ. Ν. ΜΑΡΚΑΤΟΣ

Δύο διαπλα  
ΙΩ. ΞΑΝΘΑΚΗΣ  
ments on the





## ΠΡΑΓΜΑΤΕΙΑ ΤΗΣ ΑΚΑΔΗΜΙΑΣ

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### THE AREA OF THE SPOTS

As it is known, the area of the spots is expressed in Wolf units.

We propose to use the following observations of the Sun's activity. That is, to place at the end of the column between the number of the observation and the area of the spots.

The data in the following table (south hemisphere) are given in ordinary manner. The first column gives the minimum area of the spots, the second column also gives the maximum area of the spots, the third and fifth columns give the area of the spots in this rotation. The fourth column gives the (ascension) and the date of the given areas of the spots. The sixth column gives the value in millionths of the area of the spots.

In two cases (the first is observation No 536) is a late maximum value (the second is observation No 848) is used. The minimum value is 1204 (the first is observation No 536).

\* ΙΩΑΝΝΗΣ ΓΡΑΦΙΣ

(Αντικείμενο της μελέτης)

ΠΡΑΓΜΑΤΕΙΑ ΤΗΣ ΑΚΑΔΗΜΙΑΣ



ΠΡΑΓ

THE

As it is known, the rotation of the Sun is expressed in Wolf numbers.

We propose to use the observations of G. M. K. the Sun between 1900 and 1910. That is to say, if we place at the rotation of the Sun between the minimum and maximum values.

The data used in the present work are from the I<sub>b</sub> (south hemisphere) and ordinary numerical columns give the minimum area of the spots in this rotation. The columns also give the fourth and fifth columns the area of the spots in this rotation. Finally, the (ascension) and descent of the given areas of the spots in millionths of the surface of the Sun.

In two cases, the rotation of the Sun which are observed in the rotation No 526) is used as the absolute maximum value of the rotation No 848) is used as the minimum value 1204 (rotation No 848).

\* ΙΩΑΝΝ. ΞΑΝΘΑ

(Ανεκοινώθη κατὰ τὴν

ΠΡΑΓΜΑΤΕΙΑΙ ΤΗΣ ΑΚΑΔΗΜΙΑΣ



---

Number  
of  
Cycles

---

12

13

14

15

16

17

18

---

Number  
of  
Cycles

---

12

13

14

15

16

17

18

The graphics of  $R_N$  and  $R_S$  are  
 ding points lie on

If we trace these  
 values  $(A_M)_N$ ,  $(A_M)$   
 these differences  
 time and have th

$$\pm P$$

where  $P$  represen  
 These terms may  
 finally led to the

$$(1a)$$

$$(1b)$$

where :

The values g  
 differ slightly from  
 being respectively

The fact tha  
 has almost the sa  
 phase by  $180^\circ$  bet  
 presence of this p  
 height of the maxi  
 16 ( $t=2, 3, 4$ ), whe  
 to 495, 700 and 49  
 equal respectively  
 higher in the nort  
 cles 12 and 18 ( $t=$   
 north hemisphere  
 of the maxima are

one. In the  
ved differer  
due to the

The a  
rence ( $A_M$ )

where :

If the  
hemisphere  
then  $f(R) =$   
tion with p  
fulfilled and  
ation espec  
(cf. table I)

If inst

where :

the periodic  
portion to t

Number of Cycles
12
13
14
15
16
17
18

# THE AREA

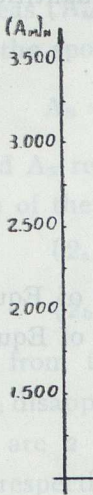


Fig. 1. The circles represent

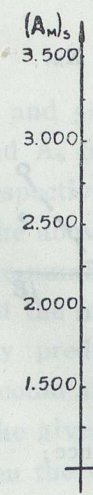


Fig. 2. The circles represent



In figure  
given by

where

Th

In f  
served va  
(  $A_M$  )  
and the d

## THE ARE

Besides it sho  
maximum areas ( $A$   
the areas of the spo

$$\bar{A}_N$$

where  $A_N$  and  $A_S$  re  
lendar month of the

$$(2a)$$

$$(2b)$$

We see from  
values  $\bar{A}_N, \bar{A}_S$  disapp  
latter terms are 2  
hemisphere) respect

In figures 4a, 4b  
by the observations.

where

The curves re

In figures 5a and 5b  
values  $\bar{A}_N$  and  $\bar{A}_S$  fr  
 $P_1$  and  $P_2$  respectiv

From the abov  
each cycle the numb  
minimum and the n  
tory accuracy predi  
spheres. We could al

From the given  
lation between the v  
the values of the t  
fluctuations of the v  
and the maximum.

A notable relat  
and the difference  $R$   
is given with satisf

(4)

where

The follo

each ca-

The

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the mean

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s (south

re given

observed

the terms

variance for

ween the

satisfac-

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cle

any re-

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to the

minimum

the obser

Acc

must be

## THE ARE

ximum of the nor  
20th cycle the abo  
maximum of the no  
This prediction is r  
do not refer but to

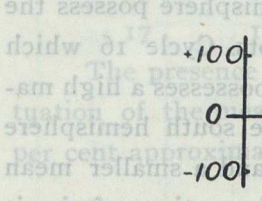


Fig.

The

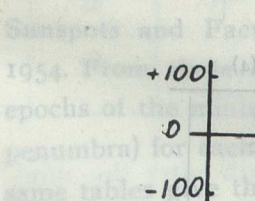


Fig.

The

From the above  
the mean areas of  
hemispheres can be  
dic rotations  $R_N$  and  
composed of two par  
 $R_N$  and  $R_S$  (parabola  
principal periods 2,  
sesses a particular i  
only in the maximum  
the two hemispheres

The algebraic  
relations (1), (2) and  
abscissa  $\bar{R} = 64$ . Thi

of the  
cycle. R  
higher i  
in both  
*very slow*  
cycles r  
highest  
presents  
ximum  
where R  
area, (A  
near 64  
low max

The  
periodic  
the maxi  
mean are  
maximum  
( $X = -60$   
and ( $A_m$ )  
much (R

the north hemisphere  
 periodic term with  
 rise while cycle 17  
 the difference  $|R_N|$   
 cycles  $|R_N|$

16 2

17 3

The presence  
 tuation of the mea  
 per cent approxima

## II. The Areas of in Relation

The observations  
 Sunspots and Fac  
 1954. From these  
 epochs of the mini  
 penumbra) for each  
 same tables give th  
 min) represented b  
 ximum areas of the  
 spectively and are

Maximum

Number of Cycles	Date Comm ceme
12	1878 S
13	1889 F
14	1901 M
15	1913 J
16	1923 M
17	1934 J
18	1944 M



12

Number of Cycles
12
13
14
15
16
17
18

In the  
maximum and  
val between  
minimum  
gest obser  
foreshorte  
Cycle 18  
ponding to  
( $U_M = 631$ )

As the  
umbræ ta  
cycle 12 v  
while the

a) *Analytical*

Base  
the Sun's  
the follow

(5)

Table VI shows the values of  $A_M$  given by the mean square error differences are smaller

	Number of Cycles
1	12
2	13
3	14
4	15
5	16
6	17
7	18

Relation (5) is a function of the maximum areas  $(A_M)_N$  as a function of the number of cycles  $N$ . The periodic term  $X = 300 \sin(t - 1) \frac{2\pi}{8}$  of the solar activity which gives the maximum area  $A_M$  be the same with the periodic term  $X$  in approximately. But the area of the visible hemisphere of the north part of the sun in the south part of the sun is

From relations (6) and (7) we can find the area  $A_M$  by the observation of the sun's visible hemisphere

where  
 Ta  
 by the c  
 due to t  
 moment

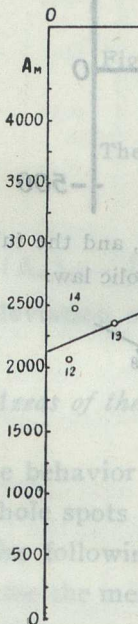
If  
 in the n  
 hemisph  
 If  
 cycle i.e

Number of Cycles
12
13
14
15
16
17
18
M.sq. E

we shall have

(7)

Here as in r  
this phenomenon  
cycle. Really, if w  
ximum, i.e. in a ti  
months after it, th



F.g. 6. Th

the same phenome

(8)

Similarly we

(9)

S (

where  $S(A)$  represe  
cycles on the Sun's  
by the observations  
tions (7), (8) and (9)

disagree

ces o - c

$S(A)$  and

Co

and (3)

ses and t

shown g

abscissas

On the a

$S(A)$ . Th

# THE AREAS

the value of  $A_M$ ,  $\bar{A}$ ,  
(b) in figures 6b and

300

while the small full

Fig.

The

$$(A_M)_{ob} - [2$$

i.e. the deviation of

b) *The Areas of the*

The behavior  
of the whole spots  
we get the following  
Umbræ, for the mean  
of the cycles:

$$(10) \quad U_M = 36$$

$$(11) \quad \bar{U} = 76 +$$

$$(12) \quad S(U) = 1$$

As table IX shows  
 $\bar{U}$  and  $S(u)$  agree well  
The mean square error

The comparisons  
lations (5), (7) and (9)  
ferences with respect



18

Number of Cycle
12
13
14
15
16
17
18

1)

sappears  
more per  
amplitud  
From  
presents

# THE AREA

the parabolic law  
figure 9 where the  
placed on the axis  
the axis of the ord  
small circles repres  
(b) represent the  
of the values  $\bar{U}$  from

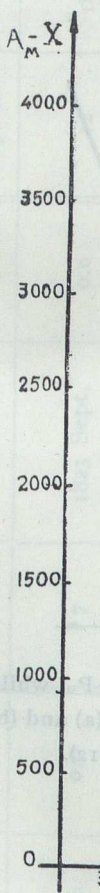


Fig. 10. The  
the dotted  
rep

In fig. 10 the  
and (10)]:

$$A_M - X = 21$$

On  
cycle are  
where :  
In  
relations

where :

### III. Wolf

We  
in case w  
Spots. W

TABLE X

Number of Cycles	Date	Value of Min.	Number of Cycles	Date	Value of Min.	Number of Cycles	Date	Value of Min.
7	1821 Dec.	0.0	7	1823 Sept.	0.0	12	1878 Aug.	0.0

THE ARE

(cycles 2

(1749 - 1

As

determin

should b

Number of Cycles
1
2
3
4
5
6
.....
7
8
9
10
11
12
13
14
15
16
17
18



most the same magnitude of the solar activity.

The following values are taken for each one cycle. It is assumed that the times  $\tau$  and  $T$  are the same as in our [2] (Tabelle 3) as in the case of the solar activity.

A comparison of the values taken epochs of the solar activity. The only exception takes place in July 1933.

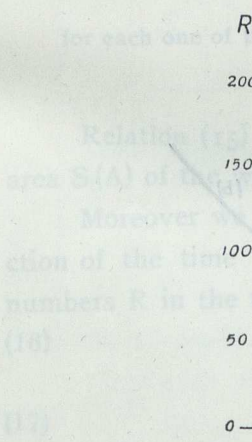


Fig. 12a

The curve shows the change in the area of the solar activity over the cycles.

Jan. 1884. In cycle number) and the date and Dec. 1933 (table values  $T$ ,  $T'$  and  $\tau$ ,

Based on table  $\bar{R}'$  per cycle are expressed by the following relations:

$$(13) \quad R_M = S$$

24

(14)

Rel  
give the  
only diff  
ceptibly  
of phase

Fig  
cyc  
the

In  
the cited  
and the  
The curv

We  
in the m

# THE AREA

As in the case of the numbers in each of the

$$(15) \quad S(R) =$$

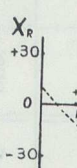


Fig. 13. The dotted line

The open circle

for each one of the

Relation (15) shows that the area  $S(A)$  of the wave

Moreover we can see from the relation of the time numbers  $R$  in the

$$(16) \quad$$

$$(17) \quad$$

In fig. 14 and

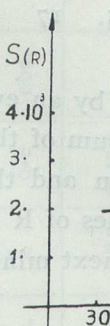


Fig. 14. The open circles

7 to 18. The

given by the observed values for cycle

As one can see

values of

The me

It

uations

(16)

Th

while th

values of

the next

month v

we shall

(17)

(18)

Let

above for

TABLE XII

Number of Cycles	$R_M$			$\bar{R}$			$S(R)$			$S_1(R)$			$S_2(R)$		
	obs.	c	o-c	obs.	c	o-c	obs.	c	o-c	obs.	c	o-c	obs.	c	o-c

THE ARE



this we s  
 we now s  
 cycles 7 t  
 responding  
 gnificant  
 lumns of

Number of Cycles
7
8
9
10
11
12
13
14
15
16
17
18

rise  $\tau$  and  
 due to the  
 ( $R_M = 108$   
 in which  
 to a respo

Base  
 $S(R^*)$ ,  $\tau^*$   
 each one

THE ARE

$$(19) \quad R_M^* =$$

$$(20) \quad S(R^*) =$$

cycl

Table XIV sho

Number of Cycles	$R_M^*$ From (16)
1	70.8
2	140.0
3	154.9
4	129.5
5	61.7
6	50.6
.....	
7	66.1
8	134.6
9	104.7
10	98.4
11	138.1
12	69.2
13	107.2
14	61.5
15	120.2
16	74.8
17	131.8
18	134.6

lations (possible disagreements)  $(R_M^*)_c$  are

In the following we give more acceptable values of the in-

On the other hand, in each case (17) and

Fig. 1  
lues

(max—m

R

S (

It is clear that, due to the fact that the values of  $R$  and June and June ved maxi

mum in 1848 when in table XI we took the epoch of maximum of the agreed principal values of  $R^*$ . More near the time of appears. It is this late rise  $\tau^* = 54$  months

In fig. 16 and

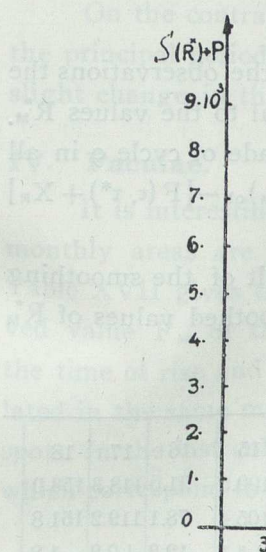


Fig. 17. The de

of  $S(R^*)_{ob} + P$ ,

the values of  $(R_M^*)$

present the parabol

$$R_M^* = 64$$

One observes the time of rise  $\tau^*$  i

Comparing rel (15) we see that the the term  $X$  does no

*observed*  
*peaks. R*

(21)

wh

Re

a function

The  
quantity  
This com  
the rema  
agree sa

Th  
of the va

---

$(R_M)_{ob-}$
---------------

---

depend n  
boring on  
instead o

to the tir  
it, the ter  
relation (  
maximum

the period

The observed  
table XVI.

Cycles : $[\bar{R}_M]_{ob}$ $-3, +3$ $[\bar{R}_M]_c$ $-3, +3$ $o - c$
--

On the contrary  
the principal period  
slight change in the

#### IV. Faculae.

It is interesting  
monthly areas are  
Table XVII gives the  
ved value  $F_M$  of the  
the time of rise and  
lated in the same manner  
spots. In the last column  
which correspond to

Number of Cycles	Date of Commencement
12	1878 Sept.
13	1889 March
14	1901 May
15	1913 Sept.
16	1923 Apr.
17	1934 Jan.
18	1944 June



The  
the facul  
observed  
nima are  
18 month  
following

We  
also obse

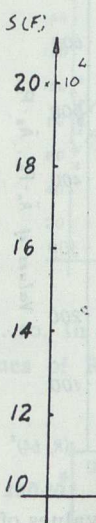
Bas  
areas  $F_M$   
rise  $T_F$ .  
(22)  
(23)  
where

Tab  
 $S(F)_{ob}$  a  
table diff

Number of Cycles
12
13
14
15
16
17
18

## THE AREA

areas  $F_M$ . This difference is bigger than in 18. We observe the heliocentric law in those



The open circles  
computed on

From the above  
the total areas of the  
Wolf numbers  $R_M$ ,  
used analytically as  
rotations of the Sun

The algebraic  
one is a sum of per  
bolas in all cases h  
the axis of the absc  
numbers.

This shows  
lying between 62 to  
the case of Wolf nu  
of rise are near it  
the smallest total a  
as bigger are the d  
 $(A_M)_N$ ,  $(A_M)_S$ ,  $A_M$ , U



# THE AREA

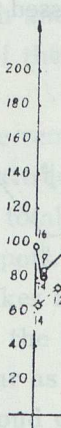


Fig. 20. In values of R

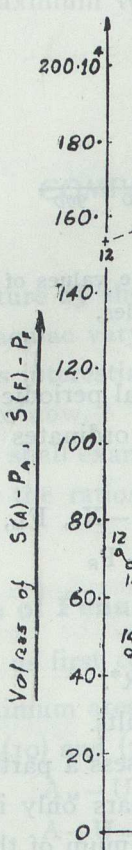


Fig. 21. In  $S(A) - P_A$

Here R  
tations o

TH  
taken in  
tities.

and on

Fi  
Ar  
portance  
ximum  
The term  
Sun's he

## THE AR

ween the north and  
mean values of the  
per cycle.

From the re  
cycles should attra  
the mean and tota  
of the whole spots

If one takes  
clude whether the  
portance. As far as  
do not go beyond  
by this term in the  
raises our suspicio  
The latter view is  
in the maximum V

## COMP

Picture 23 sh  
and of Faculae var

It is interesti  
data up to now.

We shall exa  
the other the ratio

### a) **Areas of Penu**

Let us first o  
the "maximum are  
tions (5), (10) and (

$$A_M - U$$

$$\bar{A} - \bar{U} =$$

---

\* The difference  
maximum of the sola



40

where:

except th

Fig.23. --

spots as  
ficients v

(24)

(25)

where

Rel  
tion (25)

(See tabl

In  
(parabola

of the qu

for each

b) The Ratios  $\frac{S}{S}$ 

Let us now e

where  $S(A)$ ,  $S(u)$  a  
faculae respectively

Number of Cycles	obs.
12	1688
13	1980
14	2071
15	2481
16	2498
17	2771
18	3343

Relations (9),  
one hand of the tir  
however express th  
simple periodic fun

$$(26) \quad q_A = 6.041 -$$

$$(27) \quad Q_F = 1.981 +$$

Table XX sho  
and those compute  
The mean square e

If we conside

TH

(28)

In  
observat  
this rati

Th

cycle to cycle  
3 years;  
cycles.

As  
relation (

Number of Cycles	T
12	59
13	55
14	70
15	51
16	82
17	43
18	36

cycle is a periodic  
months = 6 years;  
t, possesses a periodic

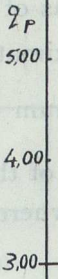


Fig. 25.  
the ratio

From relation  
lation to the time t  
of the ratios  $Q_F$  and

Be  
of rise is  
for which  
lations (  
areas pe  
the other  
dic term  
of  $q_p$  is  
mean va  
in cycles

cy

Mo  
for which  
value»

Sim

place in

$$\frac{18}{2} = 9$$

cycles fo

lue»  $T =$

cy

Th

terms in

periods

Th

brae was

from 18

For

$$\bar{q}' = [2 \times \text{mean}$$

$$\bar{q} = \frac{P}{u}$$

where:

$A_u$  and  $A_p$  do  
of one millionth o  
tions per transit is  
above investigator  
is computed by the  
hout any selection  
 $\bar{q}'$  have a very sim

where  $\bar{A}_p$  is the m  
by the observation

Finally, they  
ratio of sunspots ta  
with corresponding  
Spots...».

Number of Cycles
12 (1879 - 89)
13 (1890 - 1901)
14 (1902 - 13)
15 (1914 - 23)
16 (1924 - 33)
17 (1934 - 44)
18 (1934 - 53)



It may be easily verified that the values of  $\pi$ ,  $q'$  and  $q$  taken from the column of

It is seen that the values were taken from the column of

[1:7-16] each year vary from the quantity of A, B, C and ratio  $q$ . The (nes) and corresponding total, 8 are which the

TABLE XXII

Values of  $\bar{q}_A$ ,  $\bar{q}'_c$ ,  $\bar{q}_c$  and  $\bar{\pi}_c$  observed and computed from (29) — (32)

The  
tions of

(29)

(30)

the same  
of the o

(31)

The  
amplitud  
It (the se  
the term

The quantity

mension of the wh  
law :

(32)

Table XXII

and  $\bar{\pi}_c$ , given by t

(32) is very satisfac

$$\bar{q}_A : \pm 0.0$$

It is evident

for the ratio  $\bar{q}_A$  and

place in the cycles

$T=64$  months, i. e.

mean value of the

nimum value takes

smaller by 18 mon

cycles

12

14

16

17

In fig. 27 the

$$(\bar{q}_A)_{ob} + 0.038$$

which the curves (

$$2.459 - 0.152 s$$

From the obs

not only suffer per

one way or another

from cycle to cycle.

time of rise  $T$  and

approximately 7 sol

fificance attributed t

role not only for th

spots for each cycle

fields.

the solar  
purpose  
activity

TH

Number of Cycles
7
8
9
10
11
12
13
14
15
16
17
18

From  
of 1200 s

## THE AREA

1. Sunspot and Geomagnetic Activity, 1954. London, 1954.
2. M. WALDMEIR, Erg.
3. E. JENSEN, J. NORRIS, to the Sunspot
4. HOYLE F., Some I



30  
12  
- 4781 -  
the solar  
H881137  
activity

I. I  
λίδων εἰς  
ἡλιακῶν π  
τος. Ἔχον  
λυτικὰς σ

ὅπου (A m  
λίδων εἰς  
αὐτῶν κα  
Εἰς  
περιοδικό  
τῶν δύο  
II.  
σῶν ἐφ' ὅ  
ἐκπεφρασ

THE ARE

$$F_m = 307$$

$$S(F) = 15$$

όπου  $A_m$ ,  $\bar{A}$  και  $S$   
και τὸ ὅλικόν ἐμβαδόν  
σότητας διὰ τοὺς πυρ  
τῶν πυρσῶν κατὰ κύκ

III. Ἡ ἀνωτέρω  
δῶν τῶν κηλίδων θ  
εἰς τοὺς 7 θεωρηθέντ  
περίπτωσιν ταύτην εἰ

$$R_m =$$

$$\bar{R} = 3$$

$$S(R) =$$

$$S_1(R) = \pm$$

$$S_2(R) =$$

$$t = 0$$

κύκλοι: 7

όπου,  $R_m$ ,  $\bar{R}$  και  $S$   
τιμὴν και τὸ ὅλικόν ὁ  
τίστοιχον ἄθροισμα τ  
και μέγιστον - ἐλάχιστ

Αἱ ἀνωτέρω σ  
Wolf θεωροῦμεν τὰς  
νίξεται εἰς τὸν μέγιστ

Ἐκ τῶν ἀνωτέρω

α) Τὸ μέγιστον,  
πυρσῶν, καθὼς και ὁ  
ται νὰ ἐκφρασθῶσιν ο  
τῶν σχέσεων τούτων ο  
κυμαινομένας μεταξὺ  
τοῦ χρόνου ἀνόδου, Τ  
δου εἶναι γειτονικοὶ τ  
ραν μέσην τιμὴν και  
ὁποίων οἱ χρόνοι ἀνό  
κτινται τὸ ὑψηλότερο  
κὸν ἐμβαδὸν κατὰ κύκ

β) Μεταξὺ τῶν  
σχέσεις ἰδιαιτέραν σημ

κύκλοι κ  
ριότητος  
βόρειον  
διαφορὰ  
Τέ  
ἐμβαδὰ τ  
σεις ἐκ τ  
κατὰ κύκ  
δικὰς μετ





ΠΡΑΓΜ

---

ΕΠΙΔΡΑΣΙΣ ΤΗΣ  
ΕΠΙ ΤΗΣ  
ΚΑΙ ΕΙ

ΓΡΑ





## ΠΡΑΓΜΑΤΕΙΑΙ

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### ΕΠΙΔΡΑΣΙΣ ΤΗΣ ΤΗΣ ΠΑΡΑΓΩΓΗΣ ΥΠΟ ΤΑΣ

Ἡ Θεσσαλία κα-  
στόν, σήμερον ὑπὸ τῆς  
τὸ ἥμισυ καὶ πλεον τῶν  
τῶν σιτηρῶν πρὸς πο

Ὁ ρυθμὸς τῆς  
τὴν γενίκευσιν καὶ τῇ  
σχεδὸν τῶν ἐργασιῶν,  
των κατὰ μονάδα ἐπι

Ἡ καταχρηστικὴ  
καὶ μὲ πλεῖστα δυσμε-  
εἶναι καὶ τὸ «

Οἱ σιτοπαραγωγ-  
φανείας τούτων τὰ ἐν-  
ρούς, διατεταγμένους  
τητα οἰκονομικῆς χρη-  
νοτροφίας, ἔνεκα ἔλλει-  
τὴν παρασκευὴν χαρτο

Τὰ στελέχη ὁμα-  
στροφὴν καὶ τὴν ἐσπε-  
σίτου. Διὰ τὸν λόγον  
σεως ἢ καὶ κατ' αὐτὴν  
λείμματα τῶν στελεχῶν

---

\* Ἀνεκοινώθη ὑπὸ  
Πρακτικὰ Ἀκαδημίας Ἀ-  
ΠΡΑΓΜΑΤΕΙΑΙ ΤΗΣ ΑΚΑΔΗΜΕΙΑΣ

— Ἡ  
 λιεργουμ  
 καὶ ἐντο

Οἱ  
 κατὰ τὰς  
 μένων πε  
 ποικίλων

— Ἡ  
 κὰς συνθ  
 τούτου μ  
 σεως ἐν

Δι  
 γωγικῶν  
 δικαιολο  
 ρικῶν τ  
 τούτου, δ  
 μόζεται

Τὰ  
 1952 μέγ  
 ἀρξαμέντ

— Ὁ  
 ἐκ τῶν ὁ  
 τῆς Λαρι

α) *Κλῆμ*

Ἄρ  
 τῆς ἀνατ  
 πῶδες, μ  
 δροσεράν  
 ὑπερβολι

— Ἡ  
 ὕδατος δ  
 διότι ἡ κ  
 ριορίζουν  
 τὸν κύρι  
 μένου ὅτ  
 σεως πα

Μετεωρολογικά στοιχεία τετραετίας 1953-1956

α/ά	Μήνες	Μέση θερμοκρασία				Μέση υγρασία				Κατανομή βροχής				‘Ηλιοφάνεια ώραι (έτους 1940)
		1952	1953	1954	1955	1952	1953	1954	1955	1952	1953	1954	1955	
		1952	1953	1954	1955	1952	1953	1954	1955	1952	1953	1954	1955	
		1953	1954	1955	1956	1953	1954	1955	1956	1953	1954	1955	1956	

γματι, ἐν  
 θυμοῦ τοῦ  
 ἐξάτμισις  
 χεται εἰς  
 μῶνα, 1'  
 χμηρότερο  
 τερον εἰς  
 περισσότ  
 καὶ πλέο

Ἡ  
 φθῆ ὑπ'  
 τὰ 117,5  
 φθινόπα  
 κλίμακα

β) Ὑδα

Ἄ  
 «τῶν κα  
 κανόνα:  
 διαμορφ

Ἐ  
 τετραετοί  
 φῶν πηλ  
 ἀνεπαρκ  
 ὁποία κα  
 περισσότ

Ἡ  
 7,70 % λ  
 περιεκτικ  
 Εἶναι μι  
 παρκῶς  
 2,17 μικ

Ἡ  
 τέρου πε  
 τοῦ ἀζώτ  
 καὶ τὸ «

Ὁ  
 των ἄλατ

## ΕΠΙΔΡΑΣΙΣ ΤΗ

ἀσβέστιον, ἐντὸς τῶν  
διακυμαινομένην ἀπ

Οὗτος εἶναι ὁ  
νιορτόν, 5,78 % λεπ  
λιοστοῦ. Διὰ τὸν λό  
συνήθη καθ' ὅλην  
δοχικὴν ἀποξήρανσι

Αἱ ρωγαὶ αἰ  
ρισμὸν τοῦ ἐδάφους  
χρόνως ἐκθέτουν τοῖ  
περισσότερον τὴν ἀ  
λογικὴν, κατὰ τῆς ξ  
6,8, πολὺ πτωχὸν εἶ  
καὶ πολὺ πτωχὸν εἶς  
χιλιοστόγραμμα.

Ἀμφότεροι τ  
μενοὶ εἰς κίνδυνον κ

Οἱ ἐγκαταστο  
μὲ διαδρόμους, πλ  
1 μέτρου.

Τὸ ἐμβαδὸν τ  
M2: διαστάσεων 3 x  
ἀποστάσεως ἀπ' ἄλλ  
μὲ 10 γραμμάς.

Αἱ ἐφαρμοσθε  
τῆς ποσότητος, ὅσον  
προστιθεμένης καλα  
παρόμοιαι εἰς ἀμφο  
ταξὺ τούτων ἀφεώρ  
(Α) ἐφηρμόσθη φωσ  
φωσφορικοῦ λιπάσμ  
ἄζωτοῦχος λίπανσις  
τρικῆς ἀσβεστούχου

Αἱ ὑπόλοιποι  
κοὺς ἀγροὺς μὲ ἐρευ



γματοποι

κατηγορι

τέρας περ

Εἰς

1. *Μὴ κα*

Εἰς

φους ποσ

κιλῶν κατ

κατανομή

12 ἑκατ.

Τὰ

Μέσ

περ

(ΛΟ

α/ᾱ	
1	
2	
3	
4	
M.O. 4	
M.O 3	

2. *Μὴ κα*

Εἰς

μὲ τὴν ἰδ

λίπασμα

σφορικοῦ

ἔμβανοῦ

νάδες ᾰζά

## ΕΠΙΔΡΑΣΙΣ ΤΗΣ

στούχου ἀμμωνίας  
Τὰ ληφθέντα

Μέσαι ἀποδόσεις  
περιπτώσεως: Μ  
πειραματικὸν ἀν

ρ/ρ	ἔτη συγκομιδῆς
1	1953
2	1954
3	1955
4	1956
Μ.Ο. 4ετίας 1953-1956	
Μ.Ο. 3ετίας 1954-1956	

### 3. Μὴ καιομένη καλαμ

Εἰς τὰ τεμάχια  
λαμιάς διενέμετο κατὰ  
τελουμένη: ἐκ τριῶν  
0-16-0 καὶ εἰς ποσὴν  
κατὰ στρέμμα ὑπὸ μ  
γράμμων κατὰ στρέμ

Τὰ ληφθέντα  
πειραματικοὺς παρατ

### 4. Καιομένη καλαμ

Εἰς τὰ τεμάχια  
ὁποία, μετὰ τὴν ὁμο  
ἐκαίετο κατ' ἀνάλογον  
παρέμεινεν ἐπὶ τῆς ἐ  
χον ὑπόλειμμα, τὰ ὅ

Τὰ ληφθέντα

Με

περ

α/α	
1	
2	
3	
4	
Μ Ο. 4	
Μ.Ο. 3	

## ΕΠΙΔΡΑΣΙΣ ΤΗΣ

### 5. Καιόμενη καλαμίστρα

Εἰς τὰ τεμάχια  
ἀριθμ. 4 περίπτωσιν,  
κούχου ὑπολείμματος

Μέσαι ἀποδόσεις  
περιπτώσεως : Κ  
τέρου

α/α	ἔτη συγκομιδῆς
1	1953
2	1954
3	1955
4	1956
Μ.Ο. 4ετίας 1953-1956	
Μ.Ο. 3ετίας 1954-1956	

Ἐπὶ πλέον ὅμα  
πειραματικὸν φωσφορ  
18,750 κιλῶν ὑπερφο  
προσετίθετο ἄζωτοῦχο  
λῶν καὶ κατὰ στρέμμα  
ἄλλης τυχὸν ἄζωτούχο

Τὰ ληφθέντα  
νακα.

Μ  
πε  
το

$\alpha/\tilde{\alpha}$	
1	
2	
3	
4	
M.O. 4	
.	
M.O. 3	

## ΕΠΙΔΡΑΣΙΣ ΤΗΣ

### 6. *Καιομένη καλαμ*

Εἰς τὰ τεμάχια  
ετίθετο κατὰ τὴν σπο  
μένη: ἐκ 3 μονάδων  
ποσότητα 18,750 κιλό  
φὴν νιτρικῆς ἄσβεστο

Τὰ ληφθέντα

Μέσαι ἀποδόσεις  
περιπτώσεως: Κ  
(Λ2) εἰς ἀμφο

α/ᾱ	ἔτη συγκομιδῆς
1	1953
2	1954
3	1955
4	1956
Μ.Ο. 4ετίας 1953-1956	
Μ.Ο. 3ετίας 1954-1956	

Ἐκ τῶν ἄνωτέ  
1. Εἰς τὸν καλῶ  
πρὸς τὴν παραγωγικὴν  
ζεταὶ ὥς κάτωθι.

Μὲ βάσιν τὴν  
Ἡ δευτέρα περίπτωσις  
στα καὶ μικρὰν ὑστέρωσιν  
κιλῶν καὶ παρὰ τὴν ἐξ

Ἀκολουθεῖ ἡ  
δοσιν 4ετίας 117,8 κιλ



Ταύτην δὲ  
 μὲ μέσην  
 στρέμμα.  
 λαμιὰ με  
 καὶ ὑπερ  
 τὴν διαδε  
 καλαμιὰ  
 κιλῶν κα

Ἡ  
 περιπτώσ  
 καὶ ἀδελφ  
 καὶ κατὰ

2.

σύστασιν  
 περιεκτικ  
 διάφορος

Ὁ  
 ἀπόδοσιν  
 καλαμιὰ

## ΕΠΙΔΡΑΣΙΣ ΤΗ

καὶ τῆς ὑπ' ἀριθ. 5  
ἀποδόσεως 93,3 κιλ

Ἡ ὑπ' ἀριθμ.  
μέσῃν ἀπόδοσιν 105  
τῆς προστεθείσης ἀξ  
τοῦ σίτου.

Ἡ ὑπ' ἀριθμ.  
σεως (Λ2) μέσης ἀπ  
ὑπ' ἀριθμ. 3 περίπτ  
λιπάνσεως μέσης ἀπ  
καὶ κατὰ στρέμμα, π  
κοῦ τούτου ἀγροῦ.

3. Ἡ προκύπτ  
διὰ τὸν (Α) ἀγρὸν ε  
διαφορὰ τῆς μέσης ἀ  
4 περιπτ. ἐξ 117,8 κ  
ρικῇ (ὥς ἡ διαφορὰ  
τῆς ὑπ' ἀριθμ. 6 περ

Εἰς τὸν (Β) π  
χρησιμοποιεῖται οὐδ  
περιπτ. ἐξ 104 κιλῶν  
τριετίας). Ὅμοίως ἀ  
μένη καλαμιὰ μετὰ  
περιπτ. : Μὴ καιομέν  
ὑστέρησιν τῆς πρώτῃ

Ὡς ἐκ τούτου  
καλοῦσα καταστροφῇ  
ἀναπληρωθῇ ἀπὸ τῶ  
παραγωγικῆς δυναμ

Τοῦναντίον εἰς  
οὐσίας ἀναπληροῦτα  
ἀποθέματα, ὥστε νὰ  
αὐξήσῃς τῆς ἀποδόσε

4. Ἡ ἐπιτυγχ  
γονιμότητος ἐδάφη δ  
ποίησιν» τῆς προστι  
φρώσεως τοῦ καιομέ  
σαν ἀντιμετώπισιν τ

Μὲν  
γενικὸν ὅρ  
0,28 % ἄ  
σον ὅρον  
λῶν ἀχύρ  
ὀξέος, 2,70

Ἐπ  
ρῶς, γενικ  
ἐνίσχυσιν  
περιεχόμεν  
σωπεύει, ὁ  
ἀναποφεύ

5. Ἐ  
ἀντίδρασι  
δοσιν 105  
ἀριθμ. 5  
ἀποδοθῇ  
ἄζώτου το  
ταξὺ τῶν  
φυτῶν μὲ  
τὰ μικρόβ

Αἱ  
γίζονται  
ἀποσύνθε  
τοῦνται 2,  
λιπάνσεως

Πρὸ  
σον αὕτη  
καταστάσε  
δῶν σύνθε  
ταξὺ ἄνθρ

Ὡς  
τανάλωσιν  
τῆς ἀφομο

Τοῦ  
σφάλιζεν  
κῆν οὐσία  
ὅσον καὶ

## ΕΠΙΔΡΑΣΙΣ ΤΗΣ

Ἡ σύνθεσις π  
Σταθμοῦ Λαορίσης  
ψυχανθῆ: ὡς *Trifolium*  
*piurus subvillosus*  
(1,85%) κλπ. εἶδη.  
*ris paradoxa* (2,74%)  
*nodon dactylon*, Ἡ  
φόρων ἄλλων οἰκογε  
*Scandix pecten ven*  
*Galium tricornis*, Ρ  
βλάστησιν ἀνέρχεται  
σεως αὐτοφυοῦς χλω

Ἡ ἔγκαιρος ὁ  
περιθώριον χρόνου  
προσφορωτέραν ἱκαν

Διὰ τὸν λόγον  
καθιέρωσιν τῆς μονο  
κῶν ὀρυκτῶν λιπασμ  
18-25 κιλῶν κατὰ στ  
σιν διὰ πολυδίσκου  
μεταξὺ 10 ἕως 19 κι  
κῶν λιπασμάτων, κατ  
δόσεις μὲ τάσιν καὶ π

6. Ἡ μονομερ  
νιμότητος (Α) πειραμ  
θετικὴν ἀντίδρασιν:  
ριπτ. 1 μὲ ἀπόδοσιν  
ξάνει τὴν παραγωγὴν  
περιπτώσεως: Καιομ  
ἔναντι τῆς ὑπ' ἀριθμ.  
ἀπόδοσιν 117,8 κιλά)

Τοῦτο ἐπιβεβα  
ἄζωτοπενίας, ἥ ὁποία  
φωσφόρον, ἀκόμη κα  
καλύπτει ὅτι καὶ μὲ τ  
κιλῶν χούμου καὶ κατ  
ρᾶς οὐσίας: ἐπιτυγχά

τιμήν 3 δ  
σεως 3 μ  
στρέμμα  
λίπανσιν  
βάρος κυ  
καὶ τῆς ἀπ  
καὶ ἡ ἐξά

7. °

ἔδαφος κα

Τοῦ

107,9 κιλά

γενομένου

ὑπολειμμα

οὐσίας, ἀ

ἀπαιτοῦντ

Κα

ναμικότητ

τῶν γεωρ

μεγαλυτέρ

Διὰ

νικὴν οὐσ

ἐκ παραλ

μικρὰ προ

θοῦσαν ὁ

θερωτέραν

γητικῶν π

8. °

λίζει μεγα

ἑδάφους κ

Προ

μότητος ἀ

καιομένη

καλαμιὰ κ

°Ο

τέραν παγ

σιν 3, 163

μιᾶς 16,9

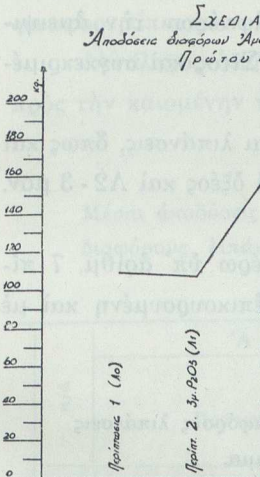
εἰς τὴν ὑπ



## ΕΠΙΔΡΑΣΙΣ ΤΗΣ

πτωσιν, μὲ μέσῃν ἀντι-  
 ρικῇ λίπανσις ἐν συνδ<sup>ύ</sup>  
 ἐπαρκῇ φυσικῇν γονιμ<sup>ο</sup>  
 ποίησιν. Τοῦναντίον  
 ρον, καθόσον μὲ τὴν  
 ὀργανικῆς οὐσίας τούτ<sup>ου</sup>  
 πάνσεως πρὸς ὄφελος

9. Ἡ ἀναπτυσσ<sup>ο</sup>  
 κῆς διὰ τὴν καταστρο<sup>φ</sup>  
 καὶ ἔχουν τὴν εὐκαιρί<sup>α</sup>



οὔτοι ἐπὶ πλέον προστε<sup>θ</sup>  
 ἀπὸ δερματώδεις βελο<sup>ν</sup>  
 calis daucoides — εἴτε  
 βρώμη Avena fatua,  
 ζιζανιοκτόνα κλπ.

Κατὰ τὴν 9/7/1  
 κρασία ἐδάφους καὶ ἐ<sup>κ</sup>  
 ἐνὸς ἕως πέντε λεπτῶν  
 κατὰ τὴν καῦσιν Γεω<sup>τ</sup>

Ἐπίσης ἡ θερμ<sup>ο</sup>  
 μεγίστης θερμοκρασία  
 ἐργασίας.

Κατόπιν τούτου  
 σίτου καὶ οἱ ὅποιοι πο<sup>σ</sup>



κεχωρημ  
gium ca  
riola, Pa  
κώσεως  
κρότερον  
τῶν ὑπερ

Αἰ  
ἀριθμ. 1  
παριστοῦ

Ἐ  
σποράν  
ως Λάθ  
Εἰ  
εἰς τὸν σ  
P205 κο  
Τα  
νακα. Ἐ

Ma

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7	
8	
9	

## ΕΠΙΔΡΑΣΙΣ ΤΗΣ

3 μον. φωσφορικοῦ  
πάνσεις ἐπὶ τοῦ σίτου

Καθ' ὃν χρόνον  
ἄνευ λιπάνσεως, ἀποδ  
τος μὲ τὴν ἰδίαν λίπαν  
P205 (ἀμειψισπορὰ 6  
μιουργούμενον ὑπὸ τ  
ἀπόδοσις τούτου ἀντ  
ἐπερχομένην διαταρα  
τὸν λάθυρον μὲ ἐπ  
κατὰ μέσον ὅρον διε  
φωσφορ. λίπανσιν.

Ἀνάλογος ὑπερ  
πρὸς τὴν καιομένην

Μέσαι ἀποδόσεις  
διαφόρους λιπάν

α/ἄ	Ἀ
	Πρώτου
1.	Σῖτος (μὴ καιο
2	» » »
3	» » »
4	» (καιομέν
5	» »
6	» »
7	Λάθυρος (Λ0,
8	» »
9	» »

Ἐκ τοῦ πίνακος  
ται μὴ καιομένην καλ  
170,7 κιλά, ἐνῶ ἀντισ  
καὶ διαδέχεται λάθυρο  
νεκτικὴν παραγωγικὴν

Ἡ εὐεργετικὴ α

συσσωμά

C:N καὶ

σον πρὸς

τρεχουσῶ

Το

ραγωγικό

γωγῆς ὡς

Αἱ

ραι τῶν

θῶς καὶ

Μέ

τεμ

σμά

ρίου

Μ

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## ΕΠΙΔΡΑΣΙΣ ΤΗΣ

φωσφορικοῦ ὀξέος (Α)  
πολὺ ἄνωτέρα τόσον  
καλαμιὰν καὶ μὲ πλῆ  
ὁποίαν διαδέχεται κα  
μὲ ἀντίστοιχον μέση

Ἐκ παραλλήλο  
σον εἰς χουμάδα ὅσο  
σπορᾶς, συγκριτικῶς

Ἡ ὑφισταμένη  
ραπεύεται προσφορᾶ  
θοῦς· διότι τοῦτο ἀν  
τὴν καῦσιν τῆς καλ  
καυμα—, ἡ ὁποία δι  
σμόν του εἰς ἀπεγν  
ἀποθεμάτων μὲ σύν  
λικῆς αὐτοῦ παραγω

Ἐκ τῆς διενερ  
ἐπὶ τοῦ παρόντος τὰ

1. Ὑπὸ τὰς συ  
γικότητος ἐδαφῶν κα  
τῆς καλαμιᾶς δὲν ἐνδ

2. Κατὰ τὴν κ  
διαφόρων καὶ ἀνεξα  
λαμιᾶς ὥς καὶ ἡ προ  
λιπαντικῶν στοιχείων  
φωσφορικῆς λιπάνσε  
ξησιν τῶν ἀποδόσεων  
τέραν κινητοποίησιν  
τος τοῦ ἐδάφους καὶ

3. Ἡ καῦσις τ  
σειρὰν ἐτῶν εἰς τὰ μ  
καὶ ἐπικίνδυνον καλλ  
τῶν πλεονεκτημάτων.

4. Εἰς τὰ στερο  
ἔστω καὶ προελεύσεω  
λογῆται καὶ κάθε καλ

διότι τότε

5. ὅ

τὸ πολὺ π

6. Τ

τῆς παραγ

τὴν οἶκον

παραλλήλ

ὀλικοῦ ἄζ

τρεχον

δεχομένων

7. ὅ

καθιστᾷ π

ἢ ὑπ' ἄρι

Ὡς

καὶ ἀπ

κοπήν

8. ὅ

καὶ δέον

σεως ἐπικ

ἄλλων ἀπ

9. ὅ

ταῦτόχ

δισκοσβά

ἀποσύνθε

συγκράτη

λειαν τούτ

καὶ πολυτ

ΣΗΜ

συνειργάσθη

Αἰκατερίνην

νον Ἀδαμίδ

1. JOFFE

2. »

p. 14

3. ΚΑΤΑΚ

Ἐργ

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ΠΡΑΓΜΑ

---

ΤΕΤΡ

ΓΡΑΦΕΙΟ



## ΠΡΑΓΜ

## ΤΕΤ

Πρόκειται ἐν τῷ  
ξεων *tēthea*, *ōrum*,  
θεα) καὶ *τεττῖγον*  
θηλ. καὶ *tettīgonia*,

Αἱ λατινικαὶ αἱ  
τοῦ πρεσβυτέρου κατ  
πεντάκις, ἢ δὲ δευτέρ

Ἐπειδὴ ἐν τῇ  
ἄλλα τινὰ οὐχὶ ἄσχετ  
τάσωμεν ταῦτα, ἐφ' ὅ  
νὰ ἐλέγξωμεν ὅσα ἐξ  
ἐρμηνείας.

Ἡ λέξις αὕτη,  
γραμμένη ἐκ τοῦ ἑλλ  
ὑπ' ὅψιν ἐν τῇ συγγ

Ἀντίστοιχοι κα  
λέξεις τήθηα (ὄνομ. τ  
τήθη κατὰ τὴν γ' κλ

---

\* Ἀνεκοινώθη κα

\*\* HEINR. SKASS

<sup>1</sup> Ὁ Ε. BOISACQ  
ρῶς ὅτι τὸ ἔτυμον τῆς  
(Etym. Wört. d. Griech

ἐξηγήσεις  
 ποιούντα  
 ὁ Ἀριστο  
 ὥτια λέγο  
 3, 13 ἀνά

θος εἶναι  
 \*θ ή - θ υ ο  
 (-θυον) πα  
 Περί τοῦ  
 Etym. W  
 γήθυον ἐν

Τοῦ

τῆς ὁποίας  
 καὶ ΗΟΦΜ  
 22 καὶ Θεο  
 ἔλεγον οἱ  
 λῶς θὰ συ

<sup>2</sup> Ἐ

520 δενδρέ  
 δρω — δένδ  
 δοτ. πληθ.

Ἀττικοῖς ἦ

δένδροις Ε

951 κλπ. 2

ΔΑΚΙ, Μεσ

θους καὶ ἐ

§ 76 [= Ἐ

θεα-στηθέα

λοχῶ ἐπὶ

ρημένον δ

Εὐρ. frg. 4

to Eurip.

δένδρον. Ψ

<sup>2</sup>1885 καὶ τ

<sup>3</sup> V

<sup>4</sup> A.

<sup>5</sup> E.

<sup>6</sup> Ὅ

κείμενον τῇ

<sup>7</sup> Α

πους τῶν δευτεροκλ  
 531a 9. 535a 24. 54  
 τῷ Ξενοκράτει 58<sup>1</sup>  
 τῶν Φλαβίων (54-  
 Μάλιστα δ' αὐτῶν τ  
 χον κακουργουμένοι  
 π η γ ά ν ο υ <sup>13</sup> διδό

Ἡ λ. tēthea ἰ  
 δοσιν τοῦ ὄρου τήθ  
 λεξικῶν ἄλλα μὲν κα  
 ōrum, οὐδ., καὶ τέλο  
 λήξεως **-a**, ὡς tēthe

Τῶν χωρίων το  
 κλίσεως), δύο εἶναι ὁ  
 λυκοῦ γένους (τῆς ἀ  
 πρέπει τὰ δύο ἄβεβο  
 ταῖον, γένους θηλυκ  
 ἑρμηνείας, εἰς τὸ αὐτ

Πρὸς τοῦτο ἰ  
 (κατὰ τὴν ἔκδοσιν το

1) Plin. nat.  
**untur** haec in foliis

<sup>8</sup> LEON. DITTMER

<sup>9</sup> BERNH. LANG

<sup>10</sup> Τὸν Ξενοκράτη  
 σεων, ὧν πολλὰ κατεχω  
 et med. Graeci min., 1

<sup>11</sup> Ὁ Πλίνιος πο  
 nat. 1. 20. 21. 27. 29. 3  
 Ζήνωνος).

<sup>12</sup> Πρβλ. Plin, n  
 βοηθοῦσι, εἶναι ὠφέλιμ

<sup>13</sup> Πρβλ. Plin. n

<sup>14</sup> Καλὴ κριτικὴ ἔ  
 τ. 6, (1ος τ. 1870) ἧς συ  
 τοὺς indices). Καλαὶ ὡ  
 1851-1855 (τ. 6) καὶ ἡ τ



2)

lia sunt

Εν

καὶ ἀριθμ

Εν

3)

donax s

thynnīs,

4)

myaces.

Εἰς

φαβητικῶ

(ἀπὸ § 1.

ταῦθα τὸ

τερα τὸ t

διὰ τοὺς

οὐδετέρου

πληθ. τοῦ

(Florenti

ὑποπτον

τῇ ἐκδόσε

καὶ ὑποσ.

Εἰς

Τοῦτο, ὥς

γούμενα,

ostreo), εἰ

πράγματα

νεωτέροις

15 Π

μὲν πρὸς τ

16 Ὁ

καὶ δημοσι

τὴν θέσιν

17 Ὁ

ἥτοι ἡ ἐκδ.

νίσεως τῆς

ρήθην, καὶ

Ἰδοὺ τὸ χωρίον

5) Plin. nat. h.

que similis o

Πρῶτος παρε

θέσει πρὸς τὰ ἄλλα

ὥς οὐδετέρου, ἀντὶ τ

tethya similia<sup>19</sup>.

Ὀλίγα μόλις

BENEDICTUS<sup>20</sup> προ

ὥς νομίζομεν, πλευρ

διορθώσεις, ὧν αἱ δι

τουσιν ἄλλα καὶ διότι

DICTUS: tetheaque

διορθώσεων θεωροῦ

BARBARUS. Οὕτω μ

ἄνευ ἄλλης τινὸς με

μικρᾶς μόνον ἀλλαγῇ

δηλ. t' τ. ἔ. similit'

ὅχι μόνον ἀπεςόβησε

θηλυκοῦ, ἀλλὰ κα

περιγράφει τὰ tethea

<sup>18</sup> Οὗτος φέρει

Gallia transpadana):

L. Plinii Secundi nat

quam emendatissimi

tethya συμφωνοτέραν

<sup>19</sup> Ἀμφότεραι το

ἐκδοτῶν Λατινικῶν λεξ

(<sup>3</sup>1827) καὶ ἐξῆς, ὥς καὶ

<sup>20</sup> L. Plinii Sec

emendatiores redditi

<sup>21</sup> Ἀποροῦμεν τῇ

τοῦ ostreo προέτεινε

ostreum κ. ostrea ὅστε

θαίρετος εἶναι ἢ ὑπὸ το

<sup>22</sup> Τὸ περίεργον

ταλαντευόμενος, καταχω

ἐν λόγῳ χωρίον. Πρῶτο

ὥς ἤδη π  
 μένως, ἐὰ  
 χωρίον la  
 in cibo  
 ἱππόκαμπ  
 ἐν τῇ τρο  
 Εἶναι γνο  
 γουμένοις  
 τητας φα  
 μένων εἴ  
 Ἐκ  
 γραμμένο  
 ἀνεκδότω  
 ἀρχεῖον ε  
 νεπιστημι  
 εὐχαριστί  
 Ἐκ τῆς  
 οὐδέν τι  
 παρενθέσ  
 διὰ τὸ τέ  
 tetheaqu  
 ostreo in

Ὁ

thea 32, 9  
 σ. 414), ἐπ  
 τὴν διόρθ  
<sup>23</sup> καὶ ἀλλαχ  
 γλαυκίδιον  
 s u m p t a  
 aurata in

<sup>24</sup>

Plin. nat.  
 m e l l e  
 ipsius va  
 ἐκ φαγητῶ

<sup>25</sup>

τῆς ἐκδ. το  
 ρωματικῶς

διορθώσεως τοῦ *Barbarus*... *schreiben* w  
λουθησάσας παρατη  
γνώμην καὶ δεχθ  
ἐκεῖ, διευθετεῖ ὁρθώ

Μετὰ τὴν ἀπό  
ζομεν, νὰ πιστεύωμε  
δετέρου γένους ἐν χ  
πάντων τῶν μέχρι σή  
σημειοῦται λίαν ἐμο  
93. u. 99 u. a. (*fals  
min.*), ἀλλ' ἄνευ συγ  
93) τὴν διόρθωσιν τ  
μένου — καὶ αὐτοῦ κα  
θηλυκοῦ (*tethea sin*

Καὶ νῦν τίθετο  
σήμερον καταχωρισθ  
εἶναι ἀπλῆ, διότι εἰς  
ἐφ' ὅσον συμπεριελή  
δὲ τὰ μετὰ ταῦτα δη  
τοῦτο λῆμμα, εἰς ἄλλ  
σιν ὅμως καὶ ἄλλα ε

---

<sup>26</sup> Ὁ αὐτὸς *MAV*  
ὁρθαὶ παρατηρήσεις κα  
(π.χ. τοῦ *BARBARUS*, το  
τὴν προσοχὴν αὐτοῦ.

<sup>27</sup> Συντομίας ἐνε  
γάλου κύρους Λατινικῶ

1) Λεξικά μετ'  
*KLOTZ*, καθηγητοῦ τοῦ  
*Praef. Corradini* ἐν *F*  
τὴν Λατινικὴν λεξικογρ  
αγγλικὸν τοῦ *LEWIS* ap  
εἶναι τὸ μόνον σχεδὸν  
Λατινογερμανικοῦ τοῦ  
μικρὸν μὲν ἀλλὰ λίαν πε  
*XIDENAKA TANAKA*, ἐπ  
τεπιστέλλοντος μέλους

πρωτόκλητον  
 ōrum, οὐδ.)

Μεθ'

πρῶτον κατε

τὸ ἐκδοθὲν

τοῦ πρώτου

νείῳ Πανεπ

Ἑρρίκου Νι

ὁ σοφὸς κα

θήκας καὶ β

ῶφέλιμον.

ματα. Πρῶτο

καθ' ὅλας τὰ

τερον τὴν λ.

γων (!!). Πό

σπόγγου (σφ

Ἐκ τῆ

σημασίας το

ὀφθαλμῶν

λεξικὰ τὴν λ

συγκεκριμένον

an animal

θέου), PA

2) Λεξι

ἐφ' ὅσον ἡμεῖς

τῆς Gius. Fu

ἰταλούς, γάλλοι

3) Λεξι

(γαλλ. μετάφρ

2729. (Τούτου

τόμ. 3ος στήλ

1935 (συντετ

<sup>28</sup> Τοῦ

φιλολογίας ΣΤ

ὑπὸ τῶν καθη

ὀφείλει πολλά

λογία) διὰ τῶν

Ἀθ. 1883, ια'



τυχῶς ἐν τοῖς πλείστοις  
κώτατα παρεχομένη (π  
παρέχει ἀπαιτηλὴν ἐ  
moluschi, eine Art  
Weichtiere).

Σύγχυσις καὶ ἀσ  
καὶ ἐν τῷ εἰδικῷ συγ  
SAINT-DENIS<sup>30</sup>, ὥστ

Τέλος, περὶ τοῦ  
ἀνακριβειῶν ὅμως — κα  
ΕΡΡΙΚΟΥ ΣΤΕΦΑΝΟΥ  
(1925-40). Ἐν τῷ τε  
οὐδ. πληθ. τῆς β' κλί  
θηλ. γένους (Plin. H.  
βείας, διότι, ὡς ἐν τοῖς  
τὸ tēthea ὀφθαλμοφα  
ραδειγμάτων ἐκείνων,  
γένος αὐτῶν, δι' ὃ καὶ  
μειωθῇ ἀσφαλὲς ἕως  
οἱ ῥ'Αγγλοι ἐκδόται εἰ  
ἐδείχθη ὅτι καὶ ἐνταῦθα

Οἱ ῥ'Αγγλοι, ὡς  
Ἑλλην. γλώσσης, ἠθέλ  
περὶ τοῦ γένους τῆς λέ  
ΣΤΕΦΑΝΟΥ εἰς σφάλμ  
currunt<sup>33</sup> καὶ 32, 117

---

<sup>29</sup> Οὕτω καὶ ἐν τῇ  
1840-56, 35 Bdchn) : te  
gleichem einem grossen  
ἐκαλοῦντο παρὰ τοῖς Βυ  
ΚΟΥΚΟΥΛΕ, Βυζ. βίος καὶ

<sup>30</sup> Le vocabulaire  
tēthea σελ. 112 (πρὸβλ. κα  
ques au temps de Plin

<sup>31</sup> Ἰδ. ἄνωτ. ὑπ' ἀ

<sup>32</sup> Ἰδ. ἄνωτ. ὑπ' ἀ

<sup>33</sup> Οὕτω ὁ CAESAR



στερούμενος  
ζετο ἐπὶ κει  
ρίον τοῦ Πλ  
νωσ ὡς θηλυ

Τοῦ λ  
παρέλκει, φ  
συζήτησιν θ  
ΕΡΡΙΚΟΥ Σ  
τὸν Ξενοκρά  
τούτους. Θὰ  
τὸ κείμενον  
πτώσει δὲν  
ματι γ ἢ θ

Τὸ λῆ  
τερα καὶ νεά  
καὶ ἀποδίδε  
sorte de pe  
kind of sm  
SHORT — ἴ  
τῇ Ἑλληνικῇ  
γόνιον (ε

Ἡ λ.  
μόνου τοῦ Γ

---

<sup>34</sup> =3,  
<sup>35</sup> Ἰδ. α  
<sup>36</sup> Κακ  
μεν. [Τεττιγόν  
οὐδενὸς τῶν π  
τοῦ BENJAM.  
ἀσφαλῶς εἶνα  
(11, 26=11, 9

<sup>37</sup> Δὲν  
γραφομένῳ I  
tissimo Euch

Ἐν τῷ βιβλίῳ τῷ  
καὶ δεύτερον ἐν συνε-  
μίμησιν τοῦ Ἀριστοτέ-  
λους ἐν ἰδιαιτέροις μά-  
ζων μορίων). Τὴν  
Πλίνιος ὥς ἐξῆς: nun-  
tim tractetur histori-

Τὸ χωρίον τοῦ

Plin. nat. 11,  
achetae et, quae mi-

Ὁ Πλίνιος προκ-  
καὶ τὰ tettigonia  
πολλάκις μεταφράζει χ-  
ρανοεῖ<sup>41</sup>.

Γενικὴ ὀνομασί-  
δὲ τοῖς Ῥωμαίοις cic-  
ἀντιστοίχως δὲ achetae  
γραφεῖσαι ὑπὸ τοῦ Π-  
στοίχου ὅρου, ὥς τοῦτ'  
θὰ ἦτο πάρεργον νὰ ἐξ-

Ὁ Laterculus ἐδημοσιεύ-  
antiq. IX chron. min. I

<sup>38</sup> Κατὰ τὴν ἐκδ. τῆς  
τοῦ Πλινίου εἶναι καὶ ἡ τῆς  
РАСКНАМ (παρὰ Loeb, I

<sup>39</sup> earum (sc. cicad-

<sup>40</sup> Ὀλίγον κατωτέ-  
καὶ cicādas surcularias  
frumentarias (τέττιγας ἐ-  
τοῖς βιοῦντας). Ὁμοίως  
ἀκάνθαις), ὁ λακέτας (ὁ ἡ-

<sup>41</sup> Περὶ αὐτοῦ ἰδ. ὁ

<sup>42</sup> Περὶ τοῦ ἐτύμου  
κλπ.), οἱ γλωσσολόγοι συμ-  
Gramm. frg. 161 p. 254  
ἀπιθάνως (i. ETTMAYER  
τύπον \*cicāla (τῆς ῥίζης  
τῆς προσφδίας ἀπὸ -ā-(cā-  
-l-(\*ci-cāla) εἰς -d- (ci-cā-

τέττιξ ἐξειλί-  
τινικῇ γλώσσῃ  
ποίησε πρῶ-  
ποιητῆς ᾿Α-  
(F.H.G. II  
πολλάκις ὑπ-  
στικῆς ἥτις  
σεως <sup>43</sup>, ἀντ-  
λειψιν ὅμως  
οὗ τὸ διὰ λα-

Μετὰ  
παραλλήλου  
θέλει σαφῶς  
τινικῇ. Τονί-  
χῆς, ἀπὸ τῆς  
ματος, ἐξακ-  
κατέχουσα τ-

---

λ. δάνειον ἐκ  
παρὰ Σιδήται  
Lautl. d. Lat  
MEILLET (Di  
Τὸ cīcāla δὲν  
τοῖς Γλωσσαρ  
μεν, ἐν ταῖς κ  
ἐ.ἀ. § 1 ὑπ. 1,  
γάρα) ἢ chich

<sup>43</sup> Ποβ-  
τίετα, νεφεληγ  
791), τὸ Ἑλεσ  
Α' σελ. 499 κα

<sup>44</sup> Ποβ-  
(᾿Αλκαῖος 39 I  
MAX TREU, I  
F ᾰ δ ε α (ᾰχε

<sup>45</sup> Πρῶ-  
π.Χ.) ᾿Ανάνι-  
ται βεβράζωσι  
πεσι μεσημβρι  
λωδίαν]. Εἰρ.

<sup>3</sup> *Αριστ.* ΗΑ 55

Τῶν δὲ τεττίγων γ  
οἱ μὲν μικροί, οἱ πρῶ  
τελευταῖοι ἀπόλλυνται,  
ἄδοντες] οἱ καὶ ὕστερ  
πρότερον ἀπόλλυνται.  
τοῖς μικροῖς καὶ τοῖς με  
ρημένοι εἰσὶ τὸ ὑπόζω  
δ' ἀδιαίρετοι, οἱ οὐκ ἔ  
τοὺς μὲν μεγάλους καὶ  
τοὺς δὲ μικροὺς τεττι  
μικρὸν καὶ τούτων οἱ δ

<sup>3</sup> *Αριστ.* ἔ. ἀ. 55

εἰσὶ δ' ἄρρενες <sup>48</sup> μὲν οἱ  
τέροις τοῖς γένεσι, θήλε

τῶν δὲ τεττίγων γένη μ  
φαίνονται (*quae prim  
reunt*)... οἱ δὲ μεγάλοι  
δὲ τοὺς μὲν μεγάλους κ

<sup>46</sup> Ἐκ τοῦ *appar. cr*  
*v. tetogonia (-iae E')* *ll.*  
τος ἔκτοτε τοῦ ἀμαρτυρήτ  
ἔκτοτε ὑπὸ τῶν παλαιότερ  
ρων καὶ τὸ σφάλμα ἔξακολ

<sup>47</sup> Ὅτι οἱ θήλεις τέ  
τοῦ Πλινίου, πλὴν ὅμως ὁ  
ὑπὸ τοῦ πρώτου λεγόμενα  
τέρω *mares canunt i n*  
ξίμου Πλανούδη βυζαντινῶ  
του καὶ Πτωχοφιλῆς ἐπο  
ἐν τῷ ποιήματι αὐτοῦ περὶ  
*Bucol. Gr., Paris Didot.*

νοι προβάλλων τοὺς τελε  
σωφρονισμόν· «θήλυς δὲ συ  
αἰδοῦς νόμων ἄρρητον ὦδ

<sup>48</sup> Πρβλ. Αἰλίαν. ΖΙ  
θήλεια ἄφωνός ἐστι.

tur acheta  
cantur]). ἄχ  
cantur ach

εἰσὶ δ' ἄρρε  
genere), θή

Ἐκ τ  
μοποιήσας  
ὥς ὄνομα ο  
τὴν καὶ ὁ  
νως καταχα  
**orum.** οὐδ

Μεθ'

ΟΥΛΕΡΙΧΟ  
ἐκδόσεως το  
tettīgonia,  
ΚΟΥΜΑΝΟ  
γενομένη ὑ  
ἀκολουθησά  
ἐσφαλμένου  
φυγον ξένα  
ὥς καὶ ἄλλ  
CALONGHI  
CHARLES),

Ἐντα  
λουθα συμπ  
(ῆ) τοῦ ΘΣ

1) ἐσ

<sup>49</sup> Ἀρ  
τιγόνια μ

<sup>50</sup> Ὀρ  
Plin.-Stelle-  
δὲ καὶ ἡμεῖς  
τίου τοῦ Th.  
σ' 534): āche  
οἱ μικρότεροι

νώσκομεν ὅτι ὁ Πλίνος  
καὶ 46.

2) Κακῶς ἐπανά-  
φοι τοῦ Ἑλληνοαγγλ.  
plur. tettigoniae Pl.

3) Οὐχὶ ὀρθῶς  
acheta(s?), -ae f. [*a-*  
*cicadarum* genus ac

Ὡς πρὸς τὰ ἐν

α) δὲν βλέπομεν  
γένους σημειούμενον  
ληνικὸν ἄχέτα-ἡχέτα  
οὐσ. Ὁ τέττιξ πρβ. καὶ  
γένος ὁ γερμανὸς συν-  
minores ex his sunt  
ἀλλ' εἰς τὸ νοούμενον

β) πρὸς τί ἢ π  
εἰς acheta(s?); Ἡ ἀ-  
δεμία ὑπάρχει πρὸς τ  
ae, διότι εἰς οὐδὲν  
Ἀλλὰ καὶ ἐὰν παραδ  
γείτο ἢ ἐκδοχὴ αὐτοῦ

γ) κακῶς δὲν σ  
γούσης τοῦ ācheta, εἰ



## 1. Über

1, 32 37 und

In den

l i s. In der

sich alles au

betrachten

ostreo) als f

sich beseitig

CTUS angen

durch wird

menhang wi

Fortsetzer v

s i m i l i s,

angenomme

eindeutig, w

schreibt er,

**similia** sunt

Das Er

r a l i s sein

erwähnt. Da

buch von F

richtige. Da

K. GEORGES

Schlies

DELL - SCOTT

## 2. Über

Der V

telischen Ste

Plinius n e

genommen,

als f e m i n

niemandem

das im Th. C

Dies haben a

auch griechi

scheibt Th. G. L.,  
nimmt auch das L  
setzung wird gezeig  
paradoxenweise fals  
Schliesslich unterläs  
geben, obwohl er b



ΠΡΑΓΜΑ

ΔΥΟ ΔΙΑΠΛΑ

ΠΑΡ

TWO INTERE

COMMENTS ON

ΓΡΑΦΕΙΟΝ



# ΠΡΑΓΜΑΤ

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## ΔΥΟ ΔΙΑΠΛΑ

### 1. Ο

Ἡ ἐκτόξευσις τεχ  
τέστησε περισσότερον ν  
Ἐπὶ τῇ βάσει τούτων  
χαιότητος περὶ μοναδικ  
λην ἐντύπωσιν, ὥστε νὰ  
χρονολογικῶν σταθμῶν  
καὶ ἂν αὗται ἐξηγοῦνται  
ἐπὶ βραχὺ διάστημα ἐχο

Οἱ σήμερον ἐκτοξ

---

\* Ἀνεκοινώθη κατὰ τ

Ἡ παροῦσα ἐργασία  
ἰδιαίτερον «hobby», καλλι  
μάλιστα ἔτη, ὅποτε ὁ ἀριθ  
ἐτησίως περὶ τῶν προόδων  
κ. Στ. Πλακίδης ἔθετε πάν  
παροῦσα μελέτη ἐξεκίνησεν  
μέλος κατὰ τὸ 1958/59, εὐδ  
σεῖα Σικάγου καὶ Νέας Ὑό  
φήν κατὰ τὴν ἐβδομάδα τῶ  
σως πρὸς τὸν ἐν τῇ Ἀκαδη  
τὸν κόπον ἢ περαιτέρω ἔρ  
καὶ ἐνθαρρυντικῶς, ὥστε θ  
περιπτὸν νὰ προσθέσω, ὅτι

Μετὰ τρεῖς ἡμέρας  
μιακὴν Κλινικὴν «Βασιλεὺς  
μορφὴν προσέλαβεν ἡ ἀνὰ  
ταῦθα, ἵνα δικαιολογηθῇ ἡ  
ἀγαπητοὺς συναδέλφους κ.κ  
τὸ λοιπὸν ἱατρικὸν προσωπ  
κόλυνε τὴν ἐργασίαν καὶ ἤμ



ταχύτητα, ὅ  
τίθενται πέ  
μάξης αὐτῶ  
βασίν του ἁ  
τος λόγῳ το  
ῇ διαρκῆς ἁ  
εἰς τὴν τροχ  
κῶς “βαρύτ  
τῆς ἀτμοσφ  
ἀρκούντως ἁ

Τὰ κα  
μαθηματικῶ  
m καὶ ταχύ  
νὰ ἰσορροπ  
καταπέση ἐ

Τὰ ἰσ  
πάντα προσ  
τείνει νὰ συ  
γονὸς ἢ πρὸ  
ἀφθόνως δι  
νοηθέντων.

ventum.

ad even

373 π.Χ. (ἵ

περίπτωσιν)

σαν δύο ἔτη

φαινόμενον,

καιομένη, ἁ

ἀκριβέστερο

μήτου. Εἰς

τὰ πράγματα

Πράγ

ῶν τὸ ἕτερο

κας τόσον ἁ

ζωηρὰν καθ

1. Διοδ

2. Ἀρ

περὶ τοῦ γεγονότος καὶ  
Δαΐμαχος (παρὰ Πλο-  
Διογ. Λαέρτιος, Φιλό-  
ωρίτης κατέπεσε πλη-  
τὰ τὸ μέσον περίπου  
συνέβη ἢ πανωλεθρῶς  
μετεωρίτου συνεδέθη  
παρὰ Πλουτάρχῳ θὰ  
σύγχρονος πρὸς τὴν  
ριον Χρονικὸν (καὶ ἰ-  
ἀστρονομικῶς), ἢ πτῶ-  
τὸ 468/7 π.Χ., καθ’

Ἐκ τῶν μαρτυριῶν  
ὑπὸ τοῦ Πλουτάρχου  
πρὸς τὸ γεγονός. Ἐξ  
μόνον λόγῳ κύρους, ὁ  
τοῦ γεγονότος. Δυστυ-  
ἐκθέτει οὐ μόνον εἶναι  
ἀλλὰ καὶ συμπληροῦσι  
ἔπεσε λίθος ἐκ τοῦ ἀέ-  
μήτης ἀστήρ γενόμεν  
λευταῖα εἶναι ἰδιαιτέρως  
περὶ τοῦ περιφήμου  
κατὰ τὴν πτῶσιν τοῦ  
ξηρὸς καὶ Βόρειος χει-  
Βορρᾶς, ἔξω δὲ τούτου  
ὅτι οἱ κομῆται προκα-  
γὴν καὶ εἶτα πτῶσιν τ

---

3. Βιβλιογρ. παρὰ  
ἐποχῇ 57.

4. F. JACOBY, *Da-*  
LII (σελ. 108). Ἐλάχιστα  
σέβιος (466/5), διότι πρό-  
(78ης). Διογένης ὁ Λαέρτιος  
σως προηγουμένης Ὀλυμ-  
γεγονός ἐντὸς τῆς πενταε-  
διὰ τὴν περίπτωσιν τυχόν  
σεως τοῦ κομήτου τοῦ Η

5. Μετεωρολ. Α, 7

Μὲ πολλὰ  
 χων ὥς πηγὴν  
 περιγράψας γὰρ  
 τὴν αὐτὴν ἐπο  
 ῶνος, ἐπομένον  
 πτωσίς πάντων  
 αἰτέραν βαρύν  
 σμένας λεπτομ  
 νος δυνατὸν ν  
 τῆς Γῆς. Τὸ

«Μερικ  
 τοῦτο <τὴν κα  
 πιστεύουν, ἐξ  
 ἀκόμη καὶ σή  
 γραφὴ τῶν θ  
 Συμφωνεῖ δὲ  
 ἱστορῶν ὅτι  
 εἰς τὸν οὐραν  
 φερόμενον εἰς  
 πλανητικῆς φ  
 καὶ νὰ ἐκπέμπ  
 τὸ σημεῖον το  
 βους συνέρρει  
 πῦρ, ἀλλὰ μόν  
 ἀναλογίαν προ

Ἡ διήγ  
 πεῖραν τῶν μ  
 μήτου, ἀλλ' ε  
 ὅμως, ἀκόμη  
 φανής. Ὁ ἴδι  
 ὅτι μᾶς τὴν δ  
 ριφράσεως, ὅ  
 ἐπιεικεῖς ἀναγ  
 πρὸς τὴν ἐξ ο

6. Πλουτ.

7. Περί

8. «Πολυ

τοῦ παραδεδομ

πεσόντος ἀναφέρει ἄν  
πολλῶν,,). Ἡ εὐσυνε  
φέρη καὶ τὴν ἀντίθετ  
λεγόμενα ὑπὸ τοῦ Δα  
ταρχος, χωρὶς νὰ τὸ ἴ  
αυγείας τοῦ φιλοσοφί

9. Ἡ δυσπιστία το  
ωριτῶν ὥς καὶ ἡ πίστις το  
ὑπερόχων ἐκείνων σημεία  
λογον πρὸς τὸ ἐπίτευγμα  
τρον τῆς ἐπιστημονικῆς ἐ  
σκέψεως, καθ' ἣν ἐποχὴν  
ὑπὸ τὸ κράτος δεισιδαιμο

Κατὰ Πλούταρχον  
τῶν μετεωριτῶν. Ὁ τῶν  
φερόμενος δὲ ὑπὸ ἀνεμο  
ῶπαδων τῆς θεωρίας ταύ  
αίους ἀνέμους, ὧν εἷς ἄν  
Α, 7 : «ὑπὸ πνεύματος ἀρ  
νόμενος ἀφ' ἐσπέρας. Κ  
Κατὰ τὸν Ἀναξαγόραν, τ  
προεῖπει, ὅτι κάποτε θὰ ἴ  
ἄστρα δυνάμεων. Διότι, ἐ  
καθ' ὅμοιον τρόπον ἐρμη  
Ἐὰν ὁμως, συμπεραίνει ὅ  
τοῦ Δαῖμαχου εἶναι ἀκριβ  
σιν τῶν μετεωριτῶν.

Ἡ εἵδησις φυσικὰ  
στευόντων εἰς τὴν γήινην  
φικῆς ζητήσεως ἥδη κο  
ἄθλον τοῦτον θὰ ἐκτιμήσ

Μέχρι καὶ πέραν τῶ  
φαινόμενον ὑπὸ τῶν ἡνδρ  
καὶ τῆς Χημείας. Πρῶτος  
μετεωρῖται καὶ οἱ διάττον  
ψαν τὴν θεωρίαν του, ὅ  
Σύμπαν δέν θὰ ἦτο μηχαν

Κατὰ τὸ 1802 ὁ Ε.  
πει νὰ θεωρηθῇ ἐξηκριβω

Τὴν 3ην Μαΐου 180  
Maraïs, ἐχαρακτήρισεν  
περὶ σφαίρας πυρίνης ἐν  
τόπου, ὅστις ἐμελέτησε

Ἡ περ  
ἀποδίδει ὅλα  
φανές, ὅτι τὸ

πρώτη φορά,  
πραγματικότη  
λαοὶ εἶχον τήν  
τας κεραυνοὺς  
καὶ τοὺς ἀπέθε  
καλούμενα. (Me  
derwearon 16  
εἰσέτι ἀστρο-πε

Μετὰ τὰ  
γηίνης ὕλης συ  
γνυνται ἐκ χημι  
κεῖται περὶ ὀγκ  
place, ἐτροποπ  
στείων τῆς Σελ  
διαττόντων, ἵνα  
πλήρως παρὰ  
Olbers καὶ Ne

Ὁ Ἀναξ  
νων σωμάτων»  
εἰς τόνον μεγαλ  
ρόφωτα (λάμπε  
τοῦνται ἀπὸ τ  
συνέβη κατὰ τ  
σθησαν ἀπὸ τοῖ  
σθημα ἢ σάλο  
τῆς Γῆς, ὥστε  
εἶπον καὶ οἱ ὅ  
ὅτι εἶναι «ῥῖψ  
Γῆν. Τοῦτο δ  
τροχιᾶς των (α  
ἐκδότηι, δὲν εἶν  
λῶν»). Ἀκόμη  
πτουσιν εἰς τήν  
ται καὶ σήμερο  
ὑδάτων. (MASO  
σαν τοῦ ἀρχικο  
πιστευομένου, ὅ

Οὕτως ὁ  
βώσεων τῆς ση  
πέτειαν διὰ τήν  
καλέσῃ τὸν Ἡλ



κοντα πέντε ἡμέρας,, ἦ  
ρει ὁ Ἀριστοτέλης. (Ὁ  
ριγραφῆς τοῦ μετεωρί-  
τεωριτῶν γνωρίζει, ἐπι-  
τῶν μετεώρων (διαπτόν-  
ῃ καὶ εἰδικὰ περὶ τούτου  
εἶναι αἱ ἐξῆς :

Τὰ μετέωρα γενι-  
σι τὴν ταχύτητα τῆς ἐλ-  
ῆτοι 40 χλμ. καὶ τι π-  
μέτωπον τὴν κινουμένην  
πρωινήν) πρέπει νὰ π-  
καὶ ἐπὶ πλέον ἕτερα 5, ἐ-  
μετεωριτῶν, ὅταν μάλ-  
εἶναι μεγάλη. Ὁ μετεω-  
θραύεται εἰς μικρὰ τεμ-  
εἶναι μαλακόν. Ἀκόμη  
ἀποτέλεσμα εἶναι ὁ σχ-  
ringer τῆς Ἀριζόνας,  
λος ἔτι μείζων ταχύτης  
μα ἐξουθενωτικά. Ὁ μ-  
καὶ τῆξιν τοῦ πετρώμα-  
κατ' ὄγκον. Ὁ κρότος  
καταπληκτικά, ὥστε ἐλ-  
νιωτάτων ἄλλως καὶ πο-  
Μία τοιαύτη περίπτωσις  
ἵχνος τούτου ἀνευρέθη)  
ἐντὸς δάσους παρὰ τὸν  
δάσους, εἰς ἀκτῖνα μέχ-  
τὰ γῆς, μὲ τὰς κορυφὰς  
θῇ παντὸς κλάδου καὶ :

Ὄταν τὰ μετέωρα  
μεσονυκτίου) τότε ἡ τα-  
χονται εἰς τὴν ἀτμόσφαι-  
ἐπιβραδύνονται περαιτέρ-  
τεωριτῶν πυρακτοῦνται  
νέου λόγῳ ἀπωλείας τα-  
σφαίρας. Ἄν ὁ μετεωρ-



ὅμως εἶναι

Κατὰ κανόν

σκληρὸν ἔδ

προσδιδού

νος, κυλιν

γλῶσσαν τ

Εἰς

ωριτῶν, τὸ

«Ὁ

ὀπισθέν το

νέφος κονι

μεγάλη, ὅσ

πρὸς τὸ ἔδ

τητός του

ναφῇ. Ἡ

ζεται κυρί

τὴν ἐπιφάν

Μικροὶ μετ

λακοῦ ἑδάφ

Τοιαῦται τ

200 μ./δευ

Ὅταν ἡ τε

μόνον προ

τοῦ σημείο

γίζων 100

κὴν ἐνέργει

τῆς αὐτῆς

εἶναι σύμφ

τόννων ἢ π

Τῆς

10. Τὰ

World, Uni

τεωριτῶν μ

250 ἔξ, ἰδίᾳ

Press 1956, 9

διατροφήση τῆ

ταχύτητος 17

11. Βλ

κά, ὥς ἤδη ἀνεφέραι  
μνημονευθέντος μετε  
ἐπὶ κατωκημένου μέρο  
τοῦ ἀνθρώπου ἀπὸ το  
πτώσεως τοιούτων μετ  
πότητος λανθάνει μία  
ἐν λογοτεχνικὸν προῖο  
τῆς δευτέρας χιλιετηρί  
συλλογὴν Πετροπόλε  
σις τοῦ Ναυαγοῦ,, ὅπ  
τυχεῖς ἐπίσης, ἥ οἰκογ  
γυναικός, ἐβδομήκοντα  
ἐξ οὐρανοῦ<sup>13</sup>.

Κατόπιν πάντων  
δεδομένα τῆς σημερινῆ  
φέροντα συμπεράσματα  
περὶ γενέσεως κρατῆρο  
συμπεράνωμεν, ὅτι το  
οικοὶ ἅμα τῇ παρόδῳ  
ραίνομεν, ὅτι ὁ λίθος  
ἀπέμεινε τὸ κύριον τεμ  
νωμεν, ὅτι τὸ ἔδαφος τῆ  
της. Πρὸς πληρεστέραν

---

12. F.L. WHIPPLE  
1958) σ. 79 ἐξ.

13. ERMAN-RANKER  
περὶ συχνότητος τῶν μετε  
ὅμως τὸ 70 % τῆς ἐπιφαν  
πιπτόντων μετεωριτῶν δια  
νιον φαινόμενον τὸ νὰ ἴδ  
αὐτοῦ εἶναι ἐκμηδενιστικῶ  
ρίτου εἶναι ἢ περίπτωσις  
ἐπὶ ἀνακλίντροῦ μετὰ τὸ  
οἰκίας, ἀνέτρεψε τὸ ραδιό  
·Ο LA PAZ κατὰ τὸν Mas  
των ὑπὸ μετεωριτῶν. Εἰς  
καλῶς ἐνθυμοῦμαι, δὲν πια  
ἐκτίθεται τὸ ἐμπρόσθιον μ  
τοῦ καθίσματος τοῦ ὁδηγ  
τοκινήτου καὶ τὴν στέγην τ

καὶ τὴν μαζὴν  
μεγέθους δὲν  
σκεφθῶμεν,  
τόνων καὶ  
νες, ἐπομένως  
τόνου.

Τὴν μὲν  
ἢ περιγραφῇ  
μία δύναται  
τοῦ Διαμάχου  
ἦτο ἢ ἐλαχίστος  
ὅτι ὁ λίθος  
ὁ μετεωρίτης  
μικρῶν ἀστέρων  
μεθὰ μάλιστα  
τὴν ὥραν τῆς  
3ης καὶ 4ης

Πάντα  
μάζης τὸ ποσόν  
δὲν φαίνεται  
θός ἦτο μάλιστά  
εὐκολώτερον  
μέρος, χωρὶς  
ἐπὶ τοῦ ἐδάφους  
Φεβρ. 1948  
δύο γνωστοὶ  
θογωνίου  
‘Ο δὲ A h p  
N. ‘Υόρκην  
σχήματος καὶ  
δηριτῶν κυρίως  
νὰ φαντασθῶμεν  
μεγέθους,,  
τόνων πίπτει  
φευκτός. Τοῦ

14. BAE

15. BAE

Μικραὶ παραλ.

σου τροχιᾷς (ὄρα ἀμέ-  
"Ας ἐλπίσωμεν, ὅτι,  
θὰ λυθῶσι καὶ τὰ πρ  
ἂν ἀληθῶς ἀποδειχθῇ  
νείας τοῦ ἐδάφους, δι  
μετεωριτῶν. "Οντως,  
τμημάτων του, ὑπελ  
τῆς ἐπιφανείας. "Υπε  
τῆς ἐξηφανίσθη λόγ  
στὸς μετεωρίτης, εὐρέ  
τῶνος, ἐνθα καὶ ἐκυλί  
Αἶγος Ποταμῶν, περὶ  
Γῆς, καὶ ἂν εὐρεθῇ ἐ  
τηθῇ περὶ τῶν νόμων  
καὶ ἡ σημασία, τὴν ὁ

"Απομένει πρὸς  
τοῦ Δαϊμάχου, ὅτι τὸ  
ναὶ δύσκολον νὰ ἀποδ  
κομήτην. Πιθανῶς δυ  
εἰς τὸν μετεωρίτην, ἂν  
τροχιὰν πέριξ τῆς Γῆς  
τεωρίτης κατὰ τὴν διά  
ματα τῆς ἀτμοσφαίρας  
τῆς τότε ἐπυρακτοῦτο  
"Ελευθερούμενος ἀκολ  
του ἐντὸς τοῦ Διαστήμ

"Εὰν τὰ ἀνωτέρω  
λόγῳ τῆς μικρᾷς τροχι  
ονάκεις τῆς ἡμέρας καὶ  
ἀπὸ τὰς κάπως παραδ  
"Αναμφιβόλως γίνεται  
τοις, ἂν ἐπρόκειτο περ  
μαχος θὰ ἐχρησιμοποί  
(δέον "νύκτας,,), καθά

"Αν ὑποτεθῇ, ὅ  
(ὄρατὸν κατὰ τὴν νύκτ  
κατὰ τὴν ἡμέραν) καὶ ὁ  
γοῦνται. Τὸ νέφος, τὸ

νατο νὰ παρ  
τροχιάς τοῦ  
περίπου ὥρα  
κῶν σημείων  
νεῖς ἀστέρας  
σκιρτήματα.  
τηρηταὶ τῆς  
δὲ εἶναι γνα  
πέριξ πλανή  
τὸν ἄξονά το  
ζοντος, ἥτοι  
ρου ἐκ τῶν δ  
νὰ ἐξηγήσου  
ἐν τέλει ἔδει  
καὶ κεκλασμέ

Κατὰ  
νατα οὐδὲ ἀν  
φαινομένων  
ματα ταῦτα  
μοι, καὶ δὴ  
Αἰγὸς Ποταμ

Ἡ μαρ  
Ποταμῶν ἐνε  
ἴσως ἀνακρι  
ἡ εἵδησις το  
ἀστὴρ κομήτ  
πλησιέστερος  
ναφέρωνται  
ὅτι ἐπὶ “75 ἡ  
βῆς. Τοῦτο δ  
φαινόμενον τ  
δηλαδὴ τὸ οὐ  
παντὸς ὅτι ἀ  
ψεις, ὅπως ἀ

Ἡ διπ  
ξαιρετικὴν λα



το περὶ τοῦ κομήτου  
468 π.Χ., ὥστε ἡ οὖν  
τὸ φαινόμενον τῶν δ  
θυμοῦμαι ζωηρότατο  
πρὸς τὴν Γῆν (χωρὶς  
τὸ φαινόμενον εἶχε π

Ἡ ἔρευνα, κατ  
ὑποπτευθεῖσαν διάβα  
ἱστορία τοῦ περιβοήτ  
μους) ἔχει ὥς ἐξῆς.

Ἄν ἐν λόγῳ κο  
ἔχει τροχίαν περιοδικ  
τὸ ὄνομα φέρει. Ὁ Ε  
τοῦ λαμπροῦ κομήτου  
δύο προγενεστέρων κ  
τοῦ αὐτοῦ κομήτου, ἔ  
κομήτης θὰ ἔπρεπε ν  
εὔρε τότε, ὅτι ἡ περί  
νωμαλίαν εἰς παρεκκλ  
ιδίως). Ἐν τῷ μεταξ  
ἀκριβείας. Ὁ Clairaut

16. Ἴσως δὲν εἶνα  
ἀναμνήσεις μου. Ἐπὶ π  
τόσον πλησίον τῆς Γῆς, ὅ  
πάσης ζωῆς. Τουλάχιστ  
συγκεκινημένος, δεδομέν  
ζον τὰς ἁμαρτίας μας κα  
Ἐνθυμοῦμαι ζωηρότατα  
ὑπὸ τῆς βωβῆς ψυχρᾶς α

Ἐτυχε τότε νὰ φι  
ζόμενον Βιλατόρια (Βιγλ  
κεντρικὴν ἀμαξιτόν, ἡ ὁ  
ἀρίγγας, παρεκίνουν δ' ὁ  
Γῆς. Αἱ γυναῖκες ἡ δὲν ἐ  
σχετλιαστικὰ ἐπιφωνήματ

Ἡ ὥρα παρήρχε  
φωτεινὸν τέρας. Μετὰ τὸ  
ζον σιγὰ σιγὰ νὰ ἐνθυμο  
νὰ κοιμηθοῦν, εἰρωνευόμε

17. R.H. BAKER,



τοῦ κομήτου  
 μεταξὺ εἶχεν  
 τελευταίαν ἀ-  
 ἄστρονόμου  
 κάμει τοὺς ὕ-  
 Σήμερον ἢ  
 μέσον ὅρον

Ἡκολο-  
 θεία Κινεζικ-  
 ἐξαιρέσεως,  
 τῶν 76 ἐτῶν  
 Εἶναι λοιπὸν  
 τοῦ Δαϊμάχα  
 ἀστρονομικῶ-  
 γὸς Ποταμῶ  
 τούτου εἰς τ-  
 ξὺ τῶν δύο

Ἄς μ-  
 του ἀναπτύσ-  
 τῆς Γῆς, δη-  
 κατάλογον κ-  
 ἀναφέρει καὶ  
 ὑπὸ τῆς βία  
 “ἐξέπεσε μετ’  
 τρόπος, καὶ  
 ἀκριβῶς ὑπ’  
 ρου, τὸν ὅπο-

Ὁ Ἄ-  
 γὸς Ποταμῶ  
 χεν ἐμφανισ-  
 μάτων τῶν ὁ-  
 ὃ ἐνδιαφέρω-  
 νικόν, ἐπὶ ἅ-  
 τίωνος εἶναι

18. R. H.

19. Ὁ H

Halley καὶ το

νίσεων κομήτου, αἵτι  
μία εἶναι δυνατόν νὰ

Ἄρχων	Ὅ
1) Δημοτίων	
2) Θεαγενίδης	
3) Εὐκλῆς Μόλωνος	
4) Ἀστεῖος	1
5) Νικόμαχος	1

Ὁ μέλας λίθος  
ἱστορικοῦ μετεωρίτου,  
συνελέγη καὶ ἐνεκτίσθη  
ναι ἀρχαιοτέρα τοῦ 46  
οἱ Χερσονησίται εἶδον  
λίθου τούτου, ἥτις διε

Ἐφόσον δύναμα  
τεωρίτης, ὁ τυχὼν ἐπι  
διότι ὁ μετεωρίτης συν  
κὴν καὶ φοβερὰν ἐμφά  
κῶς ἴσως ὑπὸ τῶν εἰδι  
μικρῶν ἀστεροειδῶν, ο  
ματίσθησαν περαιτέρω  
ὅτι δυνατόν μερικοὶ μ  
Fensekon ὑπεστήριξαν  
τούτοις δὲν ἀφῆκε κρα

Οἱ εἰδικοί πιθαν  
δυνατόν καὶ ὁ μετεωρί  
ἀφοῦ ἔχομεν ἤδη τὸ δε  
σίον τῆς Γῆς, ὥστε νὰ  
τυρίαν τοῦ Ἀριστοτέλο

τεωρόλιθοι

νοῦνται κα

Τὰ

λα. Περιω

ἡμῖν τὸ ζῆ

Βε

ὁ μετεωρίτ

Ἑλληνικῆς

ληνικῶν ἐ

Θὰ ἦτο ὅμ

ταχύτερον.

χαιολόγων.

ὅτι οἱ Χερ

γενικῶς τὰ

μένονται ὁ

τῆς ἀνακαλ

Ὁ λ

μέσον περὶ

δύναται νὰ

δὴ “παμμε

Φυσικῆς Ἰ

ἱστορικώτα

Εἰδι

λόγῳ τῆς ἱ

περὶ μετεω

ἱστορικοὶ μ

περὶ τοὺς μ

τὸν σκοπὸν

πρωτοβουλ

ἀκόμη γενν

να εἶναι τε

21. Β

22. Π

οὐδὲν ἀναφέ

BCH IV 188

dere, Bazar

antique».

χνευσίν των ἢ προμή-  
τινα ἐπίτηδες ἐπενοήθη  
Σήμερον οἱ μετε-  
τοῦτο ἀναζητοῦνται μ-  
Watson “οἱ ἄνθρωποι  
‘Ἡνωμένας Πολιτείας  
cical Society. ‘Ο Η-  
ἔρευναν. Περιοδεύων  
σώζει παλαιοὺς μετεω-  
κνύων δὲ καὶ μετεωρί-  
ἀνηκόντων εἰς τὸ ἀπλο-  
νας καὶ τὸν βοηθοῦν τ-  
οὔτως εἰς τὸ ἐνεργητι-  
τεωριτῶν<sup>24</sup>.

Χαρακτηριστικοὶ  
ον ἔργον του<sup>25</sup>. Συμφά-  
παγκοσμίως γνωστῶν μ-  
μετεωριτῶν ἐξαρτᾶται μ-  
βαθμοῦ τοῦ πολιτισμοῦ  
τεωρῖται ἔχουν ἀνευρε-  
κῶς μικρᾶς ἐκτάσεως χ-  
ὑψηλὸν ἐπίπεδον τῆς π-

Δὲν γνωρίζω ἂν  
ψιν καὶ ἡ φυσικὴ διάπ-  
καὶ τοῦ βαθμοῦ τῆς μο-  
ὑπὸ θαλασσίων ἐκτάσε-  
μετεωριτῶν νὰ διαφεύγ-  
Βουλγαρίας καὶ Ρουμα-  
μετεωριτῶν (18 χονδρῖ-  
χονδρίτας καὶ ἓνα σιδη-  
γραφέως (σ. 21), ὅτι χ-  
ὀλίγους σιδηρίτας, διότ-  
Οὔτως ἡ Β. Ἀμερικὴ π-  
42 μόνον σιδηρίτας ἓνα

23. F. WATSON, Be-

24. F. WATSON 128

25. MASON, Meteor

26. MASON 22.

Λαμ  
νησος καὶ  
Αἰγύπτῳ κ  
μέταλλον (   
ωριτικὸς π  
τὸ 3500), ἔ  
ἔχομεν ἀρα  
νικέλιον ὁ

Χαρο  
Αἰγυπτιακή  
τελευταῖα ἔ  
να τοῦ W  
τάλλου εἰς  
χαρακτηρισ  
πρώτην φο  
ρούμενον μ  
θεὸν τῆς θ  
καὶ εἶναι ἔ  
συνδέεται π  
καὶ ὁ γηίν  
τῶν Χετταί  
ται γνωστὸ  
τὴν λ. ΒΙΑ  
τὸ Κοπτικὸ

Εἰς τ  
λας. Ἀναφ  
δ' οὐκ ἔσκε  
τάλλον. Εἰς  
δηρον πρὸς  
ὄνομα τοῦ  
sidus - si  
μετάλλου τῆ  
σις, ἥτοι μέ  
καταγωγὴν

Εἰδικ  
πλουσιωτέρ



ΣΠ. ΜΑΡΙΝΑΤΟΥ.







βάτης, δίδουν τουλάχισ-  
τας. Εἰδικοί τινες ἔρε-  
ον ὁ ὕψιστος τῶν Θεῶν  
τεωρίτας. Κατὰ Παυσανίαν  
λίθος ἀργός, ἦτοι ἀκ-  
τῶν φιλολόγων καὶ ὁ  
Cook ἐν τούτοις, θεο-  
λίθον ἐρμηνεύει καὶ  
ὁ ὑπὸ τοῦ Κρόνου κα-  
λούς<sup>29</sup>. Μιὰ εἰδικὴ νέ-  
χαιολογικῶν χώρων  
τέρω, ὅτι ἐν τουλάχισ-  
τον

Μεταξὺ τῶν πε-  
πρωτον καταλέγει τὸν  
ἀπαριθμεῖ<sup>30</sup> τὸν τῆς  
Φρυγίας, τὸν τῆς Ἀ-  
τρεύετο ἐκεῖ,, (προφα-  
ἀναφέρει τὸν λίθον ἐ-  
φοῖς. Ἐξ ἄλλων χω-  
τῆς Μέκκας, πολλοὺς  
ἐντὸς ἐκκλησιῶν κα-  
θέντα ἐντὸς δωματί-  
ταινιῶν.

Περατοῦντες τὸ  
ἐνταῦθα ἓνα μετεωρί-  
λίθων κειμένου ἐντὸς  
Νοτιά πλευρᾷ τῆς Κ-  
ἐκτεθέντα περὶ ὑπάρξε-  
λει νὰ καταχωρισθῇ ε-  
ἀνασκαφῆς καὶ ἐξ ἴστ-

Ἄλλοι μετεωρίτης

---

28. FRAZER, Pau

29. A.B. COOK, Z

30. Antiquity 19.

31. Ὁ MASON, (M  
πει νὰ θεωρηθῇ ὁ μέλας

32. Ἐπεκράτησε  
των : MASON, Meteorite

σκαφὰς τοῦ  
 Μὴ ἀναγνωρ  
 γωνίαν τῆς ὁ  
 δαῖα ἱερὰ ἐντ  
 δος, εἰς τὸν  
 ταξὺ ἄλλων,  
 εὐρέθησαν εἰς  
 μα ἕκαστον).  
 ρημάτων, εἰς  
 πόθεν καὶ πό  
 ἐξωκρητικῆς  
 σπουδαῖον κέ  
 νωρ] Ὁ μετ  
 μέγιστον πλ.  
 ναι (ἐξωτερικ  
 πιφάνεια τοῦ  
 νισμοῦ εἶναι  
 πρὸς βιομηχα  
 οὔδεμίαν λεπ  
 φέρω. Ἀπόκ  
 3913 Ἀποδε  
 μεν εἰς μερικ  
 τῶν τοιούτων  
 ματίτην καὶ  
 ταλλίνη, εἶναι  
 157 ν3 Ἀλλα  
 ἔχομεν πολὺ  
 μετάλλου) εἶν  
 σαρᾶς (τρίτη  
 Σπήλιου (Κν  
 τῆς Κρητομυ  
 μερον συστημ

---

33. Τὰς  
 Μουσείου Ἡρο

34. S. F  
 θέν τελειωτικῶ

35. Σίδη

Ἡ μόνη αὐθεντική ὁ-  
εἶναι τὰ ἴχνη προιονισ-  
Συστηματική ἐ-  
βαιον, ὅτι θὰ ἀποδώ-  
κταῖον, ὅπως ἀναληφ-  
θῇ καὶ ἐνταῦθα ὁ κλ-  
κύψει ἐπὶ πλέον καὶ π-  
ἔχει νὰ ἐπιδείξῃ ἐπὶ τ-  
ρίδας, δύνανται νὰ π-  
χρησιμοποίησεως μετ-

---

εὐρεῖαν βιβλιογραφίαν):  
Bull. Soc. Lund VI 193  
Τελευταίως ὁ L. J.  
γλῶσσαν καὶ γραφήν, ἐπ-  
Grec et en Latin, Antiquité  
ὄνομα τοῦ σιδήρου, Fer-  
χετύπου \*Pers- ἢ \*Pars  
ἥτις γενικῶς εἰς τὰς Ση-  
εἶναι τὸ ἐμπορικὸν ὄνο-  
πόριον. (Ἑλληνιστὶ δηλαδ-  
Kadmos I (1962) σ. 91  
τοῦ σιδήρου εἰς τὴν Χου-  
τὴν λ. haralki, ἥτις οὐδε-

Ὡς πρὸς τὴν Ἑλλ-  
νον «ἐκτὸς τῆς ἐπιρροῆς  
μου ἀνεξαρτήτους ἐρεῦνα  
Αἴγυπτον, δὲν ἀπαντᾷ εἰς  
delle Scienze Preistoriche  
οἱ Ἕλληνες, διὰ νὰ δηλα-  
ὄνομα τοῦ μεταλλεύματος  
(αἵματίτης κλπ.) καταλήγ-  
(ροιά), πρὸς ὃ συνάπτει  
(Τὸ ὄνομα θὰ ἤρμοζε τό-

Οἱ γλωσσολόγοι βε-  
ὅτι παρὰ τὰς εὐφυεῖς εἰκ-  
Πρέπει δηλαδὴ νὰ προϋπ-  
ἐγνώριζον, ὅτι τὰ ὑπέρυθ-  
φαίνεται νὰ συμβαίνει : Π-  
ἐξ οὐρανοῦ, καὶ βραδύτε-  
τὴν ἐκκαμίνευσίν του. (Γ-

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Phocas, N. Tsa  
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T

they are placed into weight in relation to through the perigee owing to friction with a continual loss of energy, it retains it in orbit, and continually «heavier», loses atmosphere, ignites and they are sufficiently

The facts set out automatically expressed mass ( $m$ ) and a velocity, brated for a duration ultimately falls down

The historic data to all who take note tends at all periods to some historical event are amply embellished after the event. Such p In like manner we n of Helice by earthquake example chronologically connected with the disaster later and of which it phenomenon occurred torch, owing to its phenomenon more precisely. In the following cases are otherwise.

Indeed, here it is of which one was the in such unusual circumstances during the whole of and, moreover, so does to Plutarch ) and Aristotle

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1. Diod. Sic. XV. 5

2. Aristotle. Meteorology



lostratus,<sup>3</sup>  
 Aegos Potamou,  
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 that the fa  
 Athenian f  
 later on the  
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 468/7 B.C.,

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 was dry an  
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 that, for he  
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 in question

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3. Biblio

4. F. JA  
 (page 108). S  
 (466/5), since  
 Diogenes Lae  
 preceding Oly  
 years 470-465  
 more accurat  
 See about th

5. Meteo

T

Much greater de  
authority the histori  
described events of th  
that very period. It is  
century and in conse  
the meteorolith, the  
His testimony has, t  
length regarding the  
suspicion that the me  
before its final fall. T  
ff. Loeb):

«And some say a  
( that is the annihilati  
a stone of vast size ha  
day by the dwellers o  
long description of the  
teorites ). But Daïma  
xagoras. He says that  
was seen in the heaven  
not resting in one pla  
so that fiery fragment  
ed in all directions and  
in that part of the ear  
amazement, were asse  
as a trace thereof, bu  
bore almost no propor

The account of D  
may conclude, is in so  
comet, but is accurate  
however, even for the  
precedented. The mo  
since he has preserved  
conviction by the roun  
gent readers ». Plutar

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6. Plut. Lysander 12

7. Regarding Daïma

8. «Complicated and  
traditional «polyplous» or

derivation  
the stone v  
was correc  
learning, h  
he agrees  
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ficent mon

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(9) The  
faith of Ana  
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So that full a  
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winds; it was  
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cterised the e  
in full dayligh  
had happened

## The description

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«stone or metal» thunderbolts from a folklore point of view. In the 19th century thunderbolts fell in the sky and were collected the neolithic people used them as means of punishment. (Among others see A.B. Pilecki) or star-axes, and

After the positive identification of terrestrial material on the moon got condensed by chemists it was a matter of time before the famous Laplace, altered his theory of the moon. Many more stars before it was verified. (H.S. WILLIAMS, The Sun and the Stars)

Anaxagoras, (presumably) the first of our planetary system of celestial bodies are stony and hard. They are in motion but their fall is prevented. The same happened during the time they were detached from the Earth, so that its resistance should be loosened by the Earth, so that its resistance

Even this formula explained regarding the celestial bodies», carried out of the Earth, relaxation in the tension of the Earth (=unusual) to περιτρώμενος as the «unusual» expression. The course, according to the theory of Lysander, IV p. 265). The theory that they fall «into the great void» is proved by our modern science. The theory by water. (MASON, Meteorology) the initial one Elementary theory that is our Earth shows

Thus Anaxagoras' theory of the origin of life is a confirmation of contemporary science. His adventurousness owing to the fact that he had dared to describe the origin of life as a process «atheist» Chladni

the comet and self-evident in the skies for « several refers. (See however, hold meteorites known regards the more or specialised lines are the

Meteors speed of their somewhat over in opposite direction the speed of the a further 5.5 rites especially is not great. They into small fragments larger speed is the formation as diameter striking speed rally evaporate where it struck as also the apertures is lacking nesses. Generally of the equally which on the 3 guska, and of fifty kilometres tops turned to bared of all but

When they then their speed enter the atmosphere to friction with before these s



passage through the  
it is generally broken  
and not of great bulk  
into which it sinks  
glaciers ) rolling forward  
giving it either a spheri-  
conic shape. Such stones  
Eskimos ) <sup>10</sup>.

In B. Mason's book  
described as follows:

« The meteorite trail which appears  
The intensity of its light  
a meteorite strikes the  
city and the nature  
of the meteorite are  
or less are determined  
meteorites reach the  
retained. For small  
formed at the point  
rable with the diameter  
recorded )...made a  
velocities of meteorites  
of 100-200 meters  
tends to break up..  
( which is possible for  
quite different: a point  
may be called an explosion  
king the Earth at 100  
than the same mass

---

10. The book of F. L. FLETCHER  
Univ. of California Press  
and meteorites in the  
FLETCHER G. WATSON,  
regarding the speed of meteorites in the  
atmosphere of the Earth  
of between 17 to 70 kilometers

11. BRIAN MASON,



tely vaporized  
meteorite of

The resu  
ple <sup>12</sup> rightly  
Siberia, that  
be incalculab  
the exception  
ancient recol  
led narration  
dle Kingdom  
served upon  
Petersburg, a  
wrecked Man  
including the  
all, together  
the heavens

After all  
of contempor  
conclusions a  
the formation  
that such ph  
tants, after re  
in size, we ca  
into fragmen

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12. F.L. WI

13. ERMAN  
regarding the f  
But since 70 %  
in the water es  
meteorite, and  
record of a pers  
1954). This lad  
broke through  
a slight bruise.  
struck by meto  
member rightly  
of New York.)  
seat of the dri  
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ned we must surmise  
not fragmented, that  
should also have the  
a great stone and of  
they are of a genera  
time in which vast s  
traves, drums, and m  
of immense size a s

The greatest sig  
in the description of  
Not the slightest do  
by Daïmachos to oc  
been the lowest pos  
given by Aristotle, th  
ing doubt that the  
family of small aste  
explained <sup>14</sup>. We ca  
of Aristotle as to th  
between the third an

All these things  
culty, if the meteorit  
said that the express  
gency, and that the  
The meteorites of a  
rious climatic influen  
count their breaking  
that the largest know  
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known greatest sider  
shape and of dimens  
Ahnighito, removed  
1894 has dimensions  
are also several doze  
We must imagine it  
was characterised as

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14. BAKER, *Astrono*

15. BAKER, *Astrono*  
differences exist in the

out by exposure  
of a crater  
of curious  
of the stones  
hope, that,  
will also be

In cases  
tons and in  
can put even  
Indeed: Has  
been estimated  
about 100  
rounds it.  
Pleistocene  
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that «the  
glaciation»  
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strange expressions  
confusion is being m  
standing, if it were  
Daimachos would ha  
« days » (instead of n  
sible « continuously »

If we suppose th  
only during the nigh  
day ) and that the t  
explained. The cloud  
with the tail of the c  
rican satellite « Echo  
the Earth, know tha  
They also know that  
an irregular trajector  
optical illusion, but k  
and similarly the san  
orbiting from West t  
tion of this planet up  
opposite part of the  
smaller satellite of M  
descriptions by Daïm  
was an «immense stor  
orbit.

According to all t  
not appear to contain  
owing to the simulta  
the comet and of the  
dealt with by archae  
meteorite of Aegos

The testimony of  
Potamoi a comet app  
probably inaccurate as  
is the information giv  
brilliance. Finally, eve

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a periodica  
bears. Halle

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16. Possi  
ries. For man  
the Earth, tha  
contingency.  
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I vividly rem  
silent cold fla

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on to the mai  
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the last upon  
bolder ones u  
Time went b  
monster held  
started little l  
after the other



comet of 1682, very  
comets of 1607 and  
having in consequence  
again after 76 years  
period fluctuated but  
as due to deviation  
Jupiter). In the mean  
accuracy.

Clairaut discovered  
to even 600 days.  
be justified, the comets  
week of the year. (It  
was day of 1758).  
information was only on  
perihelia of the comets  
always due to the

Historical research  
help of Chinese and  
are testified up to the  
of its orbits bring us  
Earth). I did not pre-  
lay hidden in Greek  
however, that the  
Daimachos refer to  
thus being also very  
to fall during the  
Earth. If it is possible  
phenomena, it is a

It is perhaps very  
Meteorology (A,7) of  
bodies, provoke with  
several comets, the  
this occasion, that  
stone was taken also

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17. R.H.BAKER, A

18. BAKER, 246.

19. F.G. WATSON,  
Comet.



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peared». Plut  
was Aristotle  
Aristotle tries

Aristotle  
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according bo  
another less t  
der DE, whic  
which in reali  
the correct, a

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*Archon*

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- 1) Demotion
- 2) Theagenide
- 3) Eucles, son  
of Molon.

4) Asteios

5) Nicomacho

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The black  
an historic me  
collected and  
this date is

of Plutarch's source  
stone falling. Hence  
in the days of Plut

In so far as I c  
object of official an  
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spectacular and frig  
believed to day by  
asteroids, which afte  
and assumed vario  
meteorites are deriv  
terrific explosion of  
was due to the fall o

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it is possible for the  
comet, since we alrea  
to the Earth, as to ca  
the explicit testimo  
teoroliths falling u  
in the same directio

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the experts. We hav  
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nomers can take up

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20. B. MASON, *Met*

21. MASON 24-25.

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The word  
According to

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22. A prov  
but it made no  
BESNAULT, BCI  
dere, Bazarlik,

23. F. WA

24 WATSO

25. MASON

throughout the world depends to a large extent on the civilisation of the countries found in Japan, «a country, but which re

I do not know whether in connection with the natural correlation and level of elevation stretches of sea and land will pass unnoticed. This is represented in Map 1. In connection with the fact that countries with low elevation since the inhabitants have 330 siderites to the ton as against 300 siderites to the ton.

Good examples of this are found in Egypt. It is also known from the time before it made its appearance (2000 - 1900 B.C.), and in Egypt already during the prehistoric period. Analyses have shown that the iron is of meteoritic origin.

Characteristic of the iron and possibly also in the iron have been written about the iron hold an outstanding position. The emitted metal in the iron the author are characteristic of the first encountered iron metal, associated with iron etc, was called by the name of iron, while the word iron the other it is always

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26. MASON, 22.

27. G.A. WAINWRIGHT

is that since  
of the Hitti  
in Egypt, a  
was added

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ked), stone  
tas. The res  
conclusion<sup>28</sup>  
meteorites,  
which was s  
lus in Emes  
Greek sanct  
be of value.

Among  
catalogues t  
that of the  
stone which  
of Aegos Po  
Macedonia  
stones of Ar

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28. FRAZER

29. A.B. C.

30. ANTIQ.



SP MARINATOS.







might be counted as  
to that of Casas Gran  
fully bound in ribb

Concluding the  
a meteorite (Plate 1)  
within the excavation  
Crete. It is a find wh  
rites in certain archa  
catalogue of meteorit  
historic surrounding

The meteorite of  
the excavations of th  
B.C. Not being recog  
in a corner of the exc  
several important sh  
it belonged, as a most  
of this flourishing co  
gated and valuable w  
store room 19 talants  
gically therefore the  
between 1600 and 14  
came and how it ende  
carried there from a  
fines, considering tha

The meteorite h  
length 29 cent., as gr  
weight 9,900 grammes  
through its melting, t  
cuts made through sa  
rather destined for  
stone was made, and  
chemical or other c

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31. MASON, (Meteorit  
must be reckoned that of

32. The usage has b  
which they were found:

33. The above dimer  
of Heracleion. Dr. St. Ale

We have  
seals. We have  
stone has  
times «met  
certainly a

We have  
1200 B.C.)  
dized lump  
lennium B.  
around 180  
mainly ring  
more prec

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34. s. F  
published in

35. Iron  
bibliography  
Soc. Lund V

It remain  
the study of  
of view. (Le  
According to  
one from a st  
parcillu, whi  
the commerc  
to the Grrek  
He believes  
or in the Het  
except «hapa

Concerni  
the Greeks r  
my own inve  
B.C. in Egyp  
Mycenaen re  
my paper Th  
Europe (p. 1  
riche, Vol.

Further,  
extracted, to  
arrives at th  
σίδη side ( po  
should mean

meteoritic origin

It should be  
the meteorites of C  
desirable that it sh  
tain that addition

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Surely these are  
it is to be observed,  
presuppose the fact, th  
(it should be much mo  
that the reddish ores c  
name existed earlier  
falling from the heave  
to get smelted iron fr  
cerning them).

## ΠΑΡΑ

Ἐν πρώτ  
νην νὰ μὲ κο  
όποίαν κατώρ  
τὰς γνώσεις ἐν

Ὁ κ. Μα  
καὶ ταχύτητα  
ἰσορροπήση ἐπ  
τελικῶς ἐπ' αὐ

Ἐὰν θεω  
δάγματα τῆς C  
μία περιοχὴ ὅ  
τωτέρω ἐπιφάν  
ἔχει ἀκτῖνα 0.0  
λαδὴ κατὰ τι  
μάξης, ὅπως ε  
δύναται, ἐφόσο  
ἐντὸς τῆς περιο  
φήν δορυφόρο  
εἶναι γνωστόν,  
εἶναι ὁ Ἀπόλλ  
ὁ Ἀδωνις, ὅστι  
ὅστις πλησιάζει  
ἀστεροειδῶν τοι  
βῶς δὲ σήμερον  
τορνώσουν νὰ  
Γῆς, διηνεκῇ δο  
ὑποστῇ διαδοχι  
νείας ἐπαφῆς τῇ

ἀναγκασθῇ οὗτος να  
εἰσέλθῃ ἐντὸς τῆς ἐ  
καταλλήλως, ὥστε τ  
συνάγεται ὅτι μόνο  
μάζης, ἀφοῦ εἰσέλθ  
τοιαύτας, ὥστε νὰ κ  
ρετηρήθῃ μέχρι σήμ  
μετεωρίτης, ὅστις ἔ  
φόρος τῆς Γῆς ἐπὶ  
δόχως ἐκ τῆς ἀτμο  
θὰ ἐμείωνε λίαν αἰ  
νὰ εἰσέλθῃ κατ' ἐπο

Τὸ πλέον ἀξιοσ  
ροφορία τοῦ ἙΑριστ  
ρας» καὶ ὅτι ὁ κομ  
εἶναι ἀτελής. Διότι  
κατὰ τὴν ἐσπέραν  
μιας νύκτας πρὸ τῆ  
τὸν Δαῖμαχον ἐπὶ  
παμμέγεθες ὥς φλογ  
τεθλασμένας τροχιάς  
ται θραύσματα διά  
ὅπως ἀκριβῶς οἱ διο  
ἐπρόκειτο περὶ κομή  
τὰ γνωστὰ φαινόμεν  
οὔτου εἶδους φαινό  
τὴν πτώσιν τοῦ με  
εἰς τὰ ἀρχαῖα κείμεν  
φαινόμενον τὸ ὁποῖ

Ἕτερον ἐνδιαφ  
στοτέλην κατὰ  
ἡ θάλασσα ἦτο κυμ  
γας νότος. Ἐκ πρῶ  
ρολογικῆς καταστάσε  
ὄρον «μέτωπον». Το  
τῆς πτώσεως τοῦ με  
κατὰ τὸ θέρος. Τοιο  
σεως καὶ θὰ ἐξηκολο



ὅμως τοῦ Ἀ  
 θεωρεῖ αἷτιον  
 ἐπρόκειτο οὐχ  
 στάσεως, ἥτις  
 ὑπόνοια μήπο  
 σεως καὶ οὐχί  
 πρὸς τὴν ξηρό  
 τῆς Χερσονήσου  
 τοῦ Ἀριστοτέ  
 ἔξω δὲ τούτου  
 ἐὰν πράγματι  
 φαινόμενον ἂν  
 ἐν φαινόμενον  
 Tunguska τῆ  
 (ὁ παρατηρηθ  
 τούτου δὲν π  
 νον ἀπὸ συσσ  
 ούρας τοῦ κο  
 τηρηθέντα οὐ  
 τελευταία αὐτ  
 τηρήθη εἰς τ  
 ρου τῆς Tung  
 εἶναι λίαν ἐμφ

Ἡ παρο  
 τὰ οὐράνια τ  
 τημα: ὁ κομή  
 μὴ περιοδικὸς  
 Τὸ γεγονὸς ὅ  
 ἐτῶν ἀπὸ τῆς  
 240 π.Χ., μᾶς  
 μετεωρολίθου,  
 Ἀριστοτέλους  
 περὶ τοῦ κομή  
 μερινῆ ἀνακοί  
 ληνικὴ ἐπιστή  
 ἱστορικῶς ἐξη

Ἐκ τῶν  
 ἀλλήλων φαιν

τοῦ μετεωρολίθου κα-  
πτώσεως τοῦ μετεω-  
ρολογηθῆ ὥς σημαί-  
νεται ἀλλὰ κατὰ τ-  
αυτῶν τούτων φαι-  
νόμενως πρὸς τι-  
σὶν πίπτουν ἑτησίως 20  
πιθανὸς ἀριθμὸς τῶν  
χῆν τὴν περιλαμβάν-  
ουσα δηλαδὴ περιοχὴν ἐκ-  
τεωρίτην κατ' ἔτος.  
τὴν ἀντιτάσσει πρὸς τὴν Γῆν  
πιθανότης τῆς συγχ-  
ροῦ εἰς τὴν προανα-  
φερθέντος διελεύσεως μ-  
ετὰ σπόντου εἶναι 1 : 2  
ἀνεξάρτητα ἀλλήλων  
πιθανότης δὲ αὕτη  
τῶν Αἰγῶν Ποταμῶν  
τέρας μάζης.

Τέλος ἡ πρότος  
ἀνεύρεσις τοῦ ἐν λῶν  
μάλιστα σύγχρονα μ-  
ετὰ γάλη, ἰδίᾳ ἐφόσον π-

Ἐπίσης ἐπιθυ-  
μητοῦ δημοσιευθῆ, εἰ δυνατόν  
ἀλλοδαποὶ ἀστρονόμοι  
λευσίς τοῦ κομήτου  
ὅπως ἰδιαιτέραν σημ-

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One of the most important pieces of information given by Aristotle is that the comet which appeared in 374 B.C. was unfortunately Aristotle's last observation of the comet was visible for only a few days and not for many months. On the other hand «for the body of vast size, but moving along a path broken from it by a series of and flashed fire, just as in a depression, that we are familiar with well known phenomena. This comet had some independent phenomena should be observed it also. Unfortunately because the comet which overshadowed

Another important piece of information of the meteorite. According to the stone the weather was very agitated and within a few days wind. At first sight the conditions known to be very common in the very rare during the weather conditions but also during a rare event. Unfortunately Aristotle does not record of Aristotle about the comet according to the philosophy prevailing only during the time then these weather conditions themselves, i.e. we must not fall. Now, in order to observe a northerly direction from the northerly direction from

unately. And if we accept that we are obliged to look for analogies to, for example, the Tunguska (Siberia) disaster, or the consequences of the coming of a relatively small meteorite, the remaining phenomena (e.g., the Tunguska event, etc.). One of the most interesting phenomena observed in the history of meteorite the Tunguska event, of many kinds.

The present study of celestial bodies, this comet, or another, appeared since the year 468, historically, according to the support structure, indeed Halley's special interest, mean, that of Halley's.

We then, the occurrence of a comet, (2) through the phrase of Aristotle, time of the simultaneous possible. In the mass of 200, probable number, Greek Peninsula.

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proach to the E  
bility of a close  
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Finally, I v  
meteorite. With  
is very great, es



















