

The Virtual Laboratory

Max-Planck-Institute for the History of Science, Berlin
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[Stumpf, Carl]. 1916. [Folder] Versuchsprotokolle (Phonogr. Vokale):
Hauptversuche mit v Hb [von Hornbostel] u Wertheimer (Mai 1916).
(Ethnologisches Museum Berlin SPK, Phonogramm-Archiv: Stumpf Papers -
[Envelope] 17. Phonogr. Versuche)

Hauptversuche

mit

VHf u. Westheimer

(Mai 1910)

Uhr gesetzt: Kubus etc

4/5 V. 16 Program m. V. 16⁷
c⁰ Flasche u. Wellthier

c¹ Gabel (Kofen)

c² " "

c³ " "

c⁴ lose Gabel

c⁵ Zungenplatte ⁿ (Reise-
Taschmesser) f¹, f²

H6: A 1) auf c⁰ 2) auf c¹

E

J

O

U

A''

O''

U''

v²: cafe
cora

Uher geset. Kukul ds

Wald 1

I V/1 2 3, 4

(U. 2000000, u. 2000
200. 2000000, 2000000)

2000000 : 2000000 = 1

Kraft . 2000000 . 2000000 , 2000000

U. 2000000

2000000 (2000000) :

U. 2000000 .

Wulze 2

3

Dr. V. J. ...

H. A. ... 1870 u

g. l. l. a. ...

c0

c2

c3 ...

c4 gut

c5 gut

...

A 870 u c0 - d

" " c4 - d

H' O' A' c0 - d

H' O' A' c1 - d

W. K. ...

4) ~~126~~ ~~126~~ ~~126~~

None

~~F0~~
~~0~~

~~c2~~

~~c3~~

~~c3~~

~~c5~~

c⁰, c¹, c², c¹

c³ (= b²) / ~~1, 1, 1, 1~~

c⁴ (= b²) "

c⁵ (= b²) "

f¹, f² s/w, n o q r.

A E J O U / / /

E^o A g^{re}, To Cas Rothern

E " " sent

F " "

O o.o-u

U by g^{re}, Intermed. the med. of

C^o A Ord

E by

F o u

O so

U

C^o U g^{re}

C^o U

R^o U

C^o U^o so

R^o

U^o U^o = O^o, U^o U^o

5/6 16

9/16-

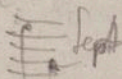
f I: 5/9 ~ 92 12 (Septima)

69
(16)

m. v. 46

- c⁰ vnoy
- c¹ vnoy d' vnoy, k' l
- c² d¹ vnoy, p d
- c³ d² v, o vnoy, k' p' vnoy d¹
- c⁴ d³ k' r - v, z, k' v
- c⁵ d⁴ " " , o d' o p k
- f¹ vnoy g⁰
- f² " "

c⁰ A vnoy, vnoy c¹ A vnoy Pa
 E o' de, vnoy E un frang, v, vnoy
 J o' vnoy, vnoy E h J o' vnoy, vnoy o' vnoy ?
 O vnoy, o' de vnoy, vnoy O vnoy, vnoy vnoy
 U o' vnoy, o' de vnoy U " , o' de
 A vnoy vnoy Oe A Un frang, vnoy vnoy
 Oe vnoy O-de Oe O vnoy
 Ue vnoy En Me En B

Uon Eho"  sept
 Kuteuk vnoy

Wald 3
II. VVM, 29 (105/6 F
e nächster)

1200 R. L. with, a Kapomator
70, 2160 R, a n R
10000. 10000

Ganglos ~~10000~~ 10000
(10000 9000). 10000

a) 10000
10000, 10000, 10000,
10000

10000 10000 10000 10000

Ab 1000, 10000
10000 javan. Metaphor,
10000

6) (V) 12 (9 1/2)

in 7g se 9 1/2 12.

c² - e², < r (name of the, 0 2 7 2 2)

c³ - e³

c⁴ - e⁴

c⁵ - e⁵ for us to

Tenonetes r Oboe, s f r primitive
Oboe, to us.

A -

E - } u v m, 0 2 2 2

J - } ~~A~~ m,

O - } u = O_u, J = F₀ e J-E

u -

H, O, U - for, < 2 2 2 2 2 2, 0 2 2 2

u 2 2 E, p E.

e g o r g c¹

c) 27/12/612

9

d) Depime \sqrt{m} $\sqrt{2}$

d // \sqrt{m} $\sqrt{2}$ $\sqrt{3}$

c² - = g^0 , \sqrt{m} ^{pins.} Cello 6, $\sqrt{2}$ $\sqrt{3}$

c³ - = g^1 $\sqrt{2}$, $\sqrt{3}$ $\sqrt{5}$

c⁴ - = g^2

c⁵ - = g^3 , \sqrt{m}

Tonometrisch \sqrt{m} , $\sqrt{2}$, $\sqrt{3}$, $\sqrt{5}$

c ₀	A	\sqrt{m}
	E	$\sqrt{2}$
	F	$\sqrt{3}$
	G	$\sqrt{4}$
	A	$\sqrt{5}$
	A ¹	$\sqrt{6}$
	A ²	"
	A ³	"
	A ⁴	"

c ₁	A	\sqrt{m}
	E	"
	F	$\sqrt{2}$
	G	$\sqrt{3}$
	A	$\sqrt{4}$
	A ¹	"
	A ²	"
	A ³	"
	A ⁴	"

$\sqrt{5}$, $\sqrt{6}$, $\sqrt{7}$, $\sqrt{8}$, $\sqrt{9}$, $\sqrt{10}$, $\sqrt{11}$, $\sqrt{12}$, $\sqrt{13}$, $\sqrt{14}$, $\sqrt{15}$, $\sqrt{16}$, $\sqrt{17}$, $\sqrt{18}$, $\sqrt{19}$, $\sqrt{20}$, $\sqrt{21}$, $\sqrt{22}$, $\sqrt{23}$, $\sqrt{24}$, $\sqrt{25}$, $\sqrt{26}$, $\sqrt{27}$, $\sqrt{28}$, $\sqrt{29}$, $\sqrt{30}$, $\sqrt{31}$, $\sqrt{32}$, $\sqrt{33}$, $\sqrt{34}$, $\sqrt{35}$, $\sqrt{36}$, $\sqrt{37}$, $\sqrt{38}$, $\sqrt{39}$, $\sqrt{40}$, $\sqrt{41}$, $\sqrt{42}$, $\sqrt{43}$, $\sqrt{44}$, $\sqrt{45}$, $\sqrt{46}$, $\sqrt{47}$, $\sqrt{48}$, $\sqrt{49}$, $\sqrt{50}$, $\sqrt{51}$, $\sqrt{52}$, $\sqrt{53}$, $\sqrt{54}$, $\sqrt{55}$, $\sqrt{56}$, $\sqrt{57}$, $\sqrt{58}$, $\sqrt{59}$, $\sqrt{60}$, $\sqrt{61}$, $\sqrt{62}$, $\sqrt{63}$, $\sqrt{64}$, $\sqrt{65}$, $\sqrt{66}$, $\sqrt{67}$, $\sqrt{68}$, $\sqrt{69}$, $\sqrt{70}$, $\sqrt{71}$, $\sqrt{72}$, $\sqrt{73}$, $\sqrt{74}$, $\sqrt{75}$, $\sqrt{76}$, $\sqrt{77}$, $\sqrt{78}$, $\sqrt{79}$, $\sqrt{80}$, $\sqrt{81}$, $\sqrt{82}$, $\sqrt{83}$, $\sqrt{84}$, $\sqrt{85}$, $\sqrt{86}$, $\sqrt{87}$, $\sqrt{88}$, $\sqrt{89}$, $\sqrt{90}$, $\sqrt{91}$, $\sqrt{92}$, $\sqrt{93}$, $\sqrt{94}$, $\sqrt{95}$, $\sqrt{96}$, $\sqrt{97}$, $\sqrt{98}$, $\sqrt{99}$, $\sqrt{100}$

By 2 of m 12,
 Octave 1^m gr. (va) & 2^m
 3^m (va)

10

c¹ - ~~o~~ /

c² - c¹ fod.

c³ - c²

c⁴ - c³

c⁵ - c⁴

} 2^m c² and 1/2 v.

Trononta ave, r A, 60 ft C.

c₀ A - 6^m gr, r d h c¹ - 6^m gr, r o o w

g - 6, o o

- B

7 - "

- 2 B

0 - 6^m

- 6^m o o

u - 6 B

250 km

A¹ -

c¹ -

u - B

} r

} r 20
 } r
 } ~~o o~~

$\beta) \begin{matrix} 20 \\ 20 \end{matrix} \begin{matrix} 12 \\ 12 \end{matrix} \begin{matrix} 12 \\ 12 \end{matrix} \begin{matrix} 12 \\ 12 \end{matrix}$

 $\frac{12}{12}$
 $\frac{12}{12}$
11

$c^1 \quad 1 \quad 2$
 $c^2 = f^4$
 $c^3 = f^3$
 $c^4 = f^3$
 $c^5 = f^4$

} da 2000000

Transm. Oberen S. 10.

c_0	A	6^m	zi	AOAE	c_1	-2AO	6^m	pvc
-	E	-	6000000	-	-	20	0	0
	T	-	00	"	-	0	0	0
	O	-	0AeL	"	-	0	0	0
	u	-	0zi	"	-	0	0	0
	A'	-	20	0-E	-	6^m	zi	0Ae
	O'	-	20		-	0	0	0
	U'	-	0	6000000	-	0	0	0

$\frac{1}{2} \log \frac{1}{1-x} = \frac{1}{2} \log \frac{1}{1-x} + \frac{1}{2} \log \frac{1}{1-x} = 12$
bl. 2y - 1/2

$c^1 - 1/2$
 $c^2 - a^1$
 $c^3 - a^2$
 $c^4 - a^3$
 $c^5 - a^4$

Spear, & bl. 2, 10 16

Tonon 2 eagl. Horn. *1/2 1/2*
1/2 1/2

c_0	A	$-$	A	c_1	A	<i>1/2 1/2</i>
$-$	9	$-$	0^3	$-$	0^3	$1/2$
	7	$-$	0^0		7	$1/2$
	0	$-$	0		0	
	u	$-$	$0u$		u_0	
	A	$-$	Ae		Ae	} <i>1/2</i>
	0^3	$-$	0^3		0^3	
	u^3	$-$	u^3		u^3	
	u	$-$	$u-0^3$		u	

Wage⁴ III. V ~~12~~ 12 9, 3 ~~13~~

(ohne 10) Quinta Bot. M^o 2
Quarta M^o 2
Aa clay AD EYU

a) Eya 12

0 1 1. 1 2 3 4 5 6 7 8 9
— 10 11 12 13 14 15 16 17 18 19 20 #)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Sp 16 92.

~~aa~~

#) ^{10.17} el. rare 12 13 14 15 16 17 18 19 20
10 11 12 13 14 15 16 17 18 19 20
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

x) 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

(Wage 4) 2 2/3 - 14

Belave before C. n. a. 2/3
10/10/10

Tonon., & Oboc, 12 Fugit

50	1/2	5	6	0	2
0	0	0	0	0	0
E	"				
J	2/3				
U	0/1				
H	1/2				
P	0/1				
U	"				

200/6, ~ 0.7 W.

92 2021 - Buntle

15

25

the $u = f$, sub ρ (P. 1000)
 $f^2, \rho \rho f^2$

Formen, \pm engl. Horn

c_0	A	AO	<u>c'</u>	A au AO
\rightarrow	O	O _u	—	O _u
	E	Oe	—	U ^u U
	F	U ^u	—	F _u
	U	O	—	O _u u
	A ^u	O ^u	—	Oe
	O ^u	O ^u 13	—	O _u u
	U ^u	O ^u - E	—	O ^u

und C₂ 2 C₁ / ab, U₂ u.

in O₂ 2 C₁ 180° f. A, u₂ u₂ u₂ u₂
aus 2/15/16. 17 A

d) E - m Puz $\sqrt{3}2$

16

Ue a' bit a''

or m & v plus 9.2.10¹⁰

Tomon. s. obocen L.

C⁰ A vs A₀ C¹ A

θ θ θ_n

ε ε_{oe} ε_i

ζ ζ ζ

U U₀ U

Be Be_{oe} Be_{oe}

Ö Ö₀ Ö₀

Ue Ue-ε Ue-ε

277.

e) E. K. F. S. 192 17

the es² hie es⁵
o-o, n-e, v-m co.

Tonon. E-o Oboen¹

c ^o	A	A	o ^{2u}	A	je
	0	0		?	h ^{no} ae ^x H ⁶ W ^{uth} no ^o
	E	o ^o	ae	E	
	J	7		7	
	U	U _o		U	
	Re	Re	o ^{2u}	Re	
	O ^u	O ^c	u	Oe	
	U ^u	He	-E	Ue	∩E

O⁵ s^o h^o l. v F.
 h⁵ s^o.

13
 ae, e o, u
 v^{all}. s^o?

A) E Tribbles

the $\sigma = \text{fis}^1$ (12. f. de l. ym)
 $c^2 = \text{fu}^2$, $c^3 = \text{fu}^3$, $c^4 = \text{fu}^4$, $c^5 = \text{fu}^5$

(As 18m; < A 5 f).
Zonometrie & so/efun, fove, & d
 Ex 30 mg. 2

c^0	A	A ^{deutnant} _(Ladats A)	σ^1 A	Me fe
	O	O _{us}		no Ae _{un d}
	E	E _{pretentio}		H6 E: no A0
	F	F		sich 13
	U	U-O		
	Ae	Ae		A _e
	Pe	Pe-E		Pe
	Ue	E		F _{ue}

24/V.16

19

D. e. 6 of a' su & quest. n. y. v
Jan 1916

m. v. H. 6 s. d. n. Walse 5, 1. d.
IV 902 v. 12 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
Oct

Q. 521 a) [?] v. n. 12

Q. 521	(1009 x)	He
c1	-	De
c2	v. v. m.	He
c3	"	He
c4	"	c1 A
c5	"	E
f1) v. v. m. n. 12	J
f2) v. v. m. n. 12	O
c0 A	v. v.	U
E		He
J		De
O		He
U		

x) n. 5/6 16
220 c0 4
c0 (12) 91 v. v.
12 1/2 v. v.
 J v. v. m. n. 12
6, 9 v. v. m. n. 12
220 c0 4

$\left(\frac{2}{1} \right)$

~~c_1~~ $c_1 = c_2, c_3, c_4$
 $c_2 = c_3$
 $c_3 = c_4$
 $c_4 = c_5$
 $c_5 = m \text{ Länge}$
 $f_1 = \dots$
 $f_2 = \dots$

$x/r \leftarrow a$
 f_1, f_2, \dots

$A = A \text{ (Satz)}$
 $E = Ae$
 $F = E \text{ (Satz)}$
 $\theta = A$
 $U = i, j, k, \dots$
 $A_e = A \text{ zu}$
 $O_e = Ae$
 $U_e = F - E$

(Ergebnis, auch 2. Teil)
 - $F_3 U$

V. gracilior

ad
Unit

Waltz
2. Hälfte

Trilobus + Alt

$$\frac{N^m \text{ } N^u \text{ } 5714}{\dots} = \dots \frac{1}{13}$$

2. Hälfte

alone

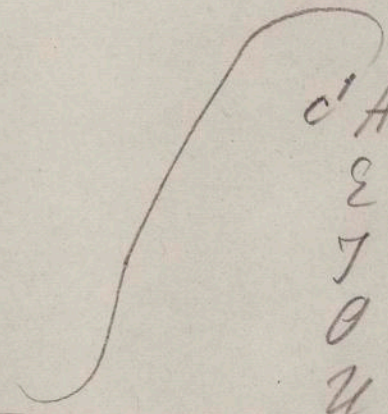
Prin. warden

copy - VI
c7 - VI
c2
c3 }
c4 }
c5 }

~~11~~
~~12~~

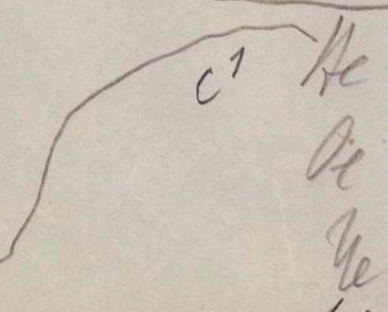
c⁰ A
2
7
0
u o p o

c¹ A
2
7
0
u o p o



c⁰ He
Be
u

c¹ He
Be
u
f¹ o p o
12 1



B C D E F G H I J K L M N O P Q R S T U V W X Y Z, $\text{Ocl} + \text{Trit}$ s. 92^d

(105)
 $\frac{1}{6} \frac{3}{1}$

6/9 -

c⁰ - 2/1

c¹ - = fin² ~~Ac~~ or ~~Ad~~
 c² - fin³ " "
 c³ - fin⁴ ~~Ad~~ "
 c⁴ - fin⁴ "
 c⁵ - in Ac or Ad "

Unlabeled:

c⁰ A - ~~Ad~~ A-Ac
 E - ~~Ad~~ no ^{and} ~~Ad~~ ^{and} ~~Ad~~
 J - E-De, s
 O - A
 U - A + ~~Ac~~ ^{Ac}, s

c⁰ Ac A
 Oe Ae ~~Ac~~
 Ue Oe ~~Ac~~
c¹ Ac A

c¹ A - ~~Ac~~ A-E
 E - A, - ~~Ad~~
 J - E ~~Ac~~
 O - A
 U - A ~~Ac~~

Oe Ae
 Ue E
 oe
 f¹ 5/2
 f² 2

so R V L 2 1 - 2 L₁ = A by E or Oe