

Errata of the paper by W. Weber, “Determinations of electrodynamic measure: concerning a universal law of electrical action”, English translation by S. P. Johnson, edited by L. Hecht and A. K. T. Assis, available through the magazine 21st Century Science and Technology, 146 pages in PDF, posted in March, 2007: <http://21sci-tech.com/translation.html> and <https://www.ifi.unicamp.br/~assis>

- Page 3, line 23 should read:  
 motions imparted to the ether by the electrical currents, could lead to the same formula.”

- Page 19, lines 28 and 29 should read:  
 72.589  
 36.786,

- Page 27, line 17 should read:

400	510.04			561.90		
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- Page 27, line 25 should read:

		79.45			298.81	
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- Page 27, line 40 should read:

westerly		192.02	192.17		297.99	297.81
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- Page 28, line 17 should read:

300	433.35			265.02		
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- Page 28, line 18 should read:

easterly		190.23	190.08		296.98	297.30
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- Page 30, line 13 should read:

	485.70			329.30		
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- Page 35, line 21 should read:

$R$	$v$	$v'$
0.5 m	0°10'12''	0°4'44''

- Page 36, line 13 should read:  
 is an expression for the magnitude of the reciprocal action of both elements;  
 the direction of this action for both

- Page 39, line 1 should read:

$$\frac{1}{r^5} = \frac{1}{l^5} \left( 1 + \frac{5}{2}k \cos \omega + \frac{35}{8}k^2 \cos^2 \omega + \frac{105}{16}k^3 \cos^3 \omega + \frac{1155}{128}k^4 \cos^4 \omega + \dots \right) .$$

- Page 42, line 11 should have  $\alpha^2$  instead of  $a^2$ , namely:

$$A \left( 1 - \frac{\alpha^2}{5000} + \frac{\gamma^2}{22000} \right) \cdot \alpha \gamma ,$$

- Page 46, line 9 should read (original German expressions: *nordmagnetische Masse*  $+\mu$  and *südmagnetische Masse*  $-\mu$ ):

If, in a steel rod, the north magnetic mass  $+\mu$  and the south magnetic mass  $-\mu$  are divided at  $C$  by line  $\alpha$ , which

- Page 46, lines 12 and 13 should read:

$\alpha$ , in which the mass  $+\mu$  is thought of as concentrated, and  $C$  its midpoint, and  $\delta$  designates the angle which  $Cn'$  forms with the direction  $CD$  or  $DC$  of the force given above, then  $\alpha \sin \delta$  is the distance of the points of action of

- Page 46, line 18 should read:  
force given above.

- Page 46, line 20 should read:

From the *electromagnetic law*, the effect of a closed current on the north magnetic mass  $+\mu$  of the

- Page 47, there should exist the following expression between lines 7 and 8:

$$\cos AC\sigma' = \sin ACs' = ACs'$$

- Page 48, line 12 should read:

magnetic rod at  $A$ , whose magnetic moment is

- Page 51, the equation on line 36 should read:

$$\frac{29314000 \cdot 21327000}{\frac{1}{3}\pi^2 \cdot 55.8^2 \cdot 44.4^3} \cdot \pi^2 i^2 = 180000$$

- Page 54, line 7 of the 5th paragraph should read:

of the induction mediated oscillations, as well as of the decrease of the arc of the oscillations,

- Page 58, line 4 of the first Table should read:

25.	23' 4.39"	28.17"	- 0.23"
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- Page 60, line 4 of the first table should read:

9.	32' 7.03"	464.44	679.15	2.831 966	
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- Page 60, line 9 of the first table should read:

74.	49' 16.79"	464.22	292.27	2.465 784	109.10
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- Page 63, the last line should read:

closed up and put into oscillation, while the current of the same voltaic battery was conducted through

- Page 65, line 7 should read:

calculates from the measured arcs of oscillation of our coil and from its periods of oscillation, likewise

- Page 69, the title of Section 14 should read:

14. Repetition of Ampre's fundamental experiment with common electricity, and measurement of the duration of the electrical spark during discharge of a Leyden battery.

- Page 69, line 10 of Section 14 should read:

However, it seems still more important to repeat Ampre's fundamental experiment with *common*

- Page 69, line 12 of Section 14 should read:

wire, since there are such considerable differences between this current of common electricity and all

- Page 69, line 16 of Section 14 should read:

of a current of common electricity, or, given a longer duration, the *discontinuity* of the current might be

- Page 69, lines 21 and 22 of Section 14 should read:

with common electricity, of which I will now give a more precise account here.

It is known, that the repetition of Oersted's fundamental experiment with the *common*

- Page 70, line 1 of the 2nd paragraph should read:

Now, while the main point of performing Oersted's fundamental experiment with common

- Page 70, line 8 of the 4th paragraph should read:

of common electricity passing through, turned out to be like that which was already *predetermined* by

- Page 70, line 10 of the 4th paragraph should read:

made with a current of common electricity.

- Page 70, line 3 of the 5th paragraph should read:

any cases at all, where the current of common electricity would yield Oersted's fundamental

- Page 71, line 1 should read:

experiment, but not Ampre's, or whether with respect to common electricity, both kinds of effects

- Page 72, line 4 below the second table should read:  
intensity of the discharge by means of the resistance of these bodies, and to make all the electricity

- Page 73, line 9 of the table should read:

1 000 mm	95.8	210.1	43.7
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- Page 74, line 7 below the third table should read:  
discontinuity of the currents of common electricity (which was already discussed above, and which

- Page 80, line 4 should read:  
greater range to electrodynamic experiments with common electricity, by rendering dispensable the

- Page 84, lines 17 and 18 should read:  
ponderable carrier, by means of which, in an immeasurably short time, it is canceled once more. Through this *resistance*, during the time interval in which this motion is canceled, all forces,

- Page 98, line 24 should read:  
to the same values, as are given for this case by the fundamental law of *electrostatics*; for these

- Page 101, the first line of the fourth equation should read:

$$\left( \frac{d^2 r_1}{dt^2} + \frac{d^2 r_2}{dt^2} - \frac{d^2 r_3}{dt^2} - \frac{d^2 r_4}{dt^2} \right) = +u \sin \vartheta \left( \frac{d\vartheta_1}{dt} - \frac{d\vartheta_2}{dt} - \frac{d\vartheta_3}{dt} + \frac{d\vartheta_4}{dt} \right)$$

- Page 103, the last line of the footnote should read:

$$y' - y = r_1 \cos RY .$$

- Page 105, line 2 upwards from the bottom should read:  
dependency given by Ohm's law of the current intensity on the electromotive force and the total

- Page 106, line 5 should read:  
effects of the above-cited currents, and which move the ponderable conductors themselves.

- Page 106, footnote 45 should read:  
[N. E.] See beginning of Section 22.

- Page 107, line 17 should read:  
masses, the electrical masses themselves are, however, somewhat displaced in their carriers, and

- Page 109, line 26 should read:

$$= -\frac{\alpha\alpha'}{r^2}i \left( \cos \varepsilon - \frac{3}{2} \cos \vartheta \cos \vartheta' \right) \cdot ae' u' \cos \varphi .$$

- Page 109, the last equation should read:

$$= -\frac{\alpha\alpha'}{r^2}i \left( \cos \varepsilon - \frac{3}{2} \cos \vartheta \cos \vartheta' \right) \cdot au' \cos \varphi .$$

- Page 111, line 24 should read:

element in a direction perpendicular to  $\alpha'$  and  $r$ . It follows from this the magnitude and direction

- Page 112, lines 1 and 2 should read:

axis and of line  $r$ , and the sine of this angle with line  $r$  is to  $\sin \psi$  as  $1 : \sqrt{1 + 3 \cos^2 \psi}$ , and finally, if for the sake of brevity,  $\frac{1}{r^3} \sqrt{1 + 3 \cos^2 \psi}$  is denoted by  $\bar{d}$ ,

- Page 116, line 26 should read:

(neutral) wire  $a'b'$  away from the (excited) wire  $ab$  at rest, one could do the opposite, and the induction

- Page 117, line 30 should read:

Here,  $u'$  and  $\alpha'$  are to be written  $v$  and  $ds$ , in accordance with Neumann's notation; hence the theory

- Page 117, line 32 should read:

$$Eds = -avDds ,$$

- Page 125, line 15 should read:

$\cos \beta = \cos \beta' = 0$ ; finally, for the 6th and 7th terms, which are proportional to  $\alpha_1 \alpha'_1$  and to  $\alpha_2 \alpha'_2$ ,

- Page 125, line 18 should read:

$$\pm \frac{ai}{2} \cdot \frac{\alpha_1 \alpha'_2}{r} \cos \vartheta' \cot \vartheta' \quad \text{and} \quad \pm \frac{ai}{2} \cdot \frac{\alpha_2 \alpha'_1}{r} \cos \vartheta' \cot \vartheta' ,$$

- Page 136, line 26 should read:

$-\frac{1}{2}mae$  were to flow with velocities  $-v$  and  $+v$  in the direction in which current element  $\alpha'$

- Page 139, line 6 should read:

straight line joining them is allowed. Finally, as happens in Section 29, in place of one element,

- Page 139, line 14 should read:

$$r = \rho^2 , \quad \frac{dr^2}{dt^2} = 4\rho^2 \frac{d\rho^2}{dt^2} , \quad \frac{d^2r}{dt^2} = 2\rho \frac{d^2\rho}{dt^2} + 2 \frac{d\rho^2}{dt^2} .$$