Errata of the book "Wilhelm Weber Main Works on Electrodynamics Translated into English", edited by A. K. T. Assis, Volume 3: "Measurement of Weber's Constant c, Diamagnetism, the Telegraph Equation and the Propagation of Electric Waves at Light Velocity" (Apeiron, Montreal, 2021), ISBN: 978-1-987980-27-1.

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- Page 13, the 2nd line of the 2nd paragraph should be replaced by:
discuss more carefully the consideration which led to the conjecture of a *diamagnetic induction of*

- Page 14, the 6th line of Section 2.1 should be replaced by:
iron and a bar of bismuth, the iron exerts magnetic forces at a distance, compared to which the

- Page 15, the 2nd line below Figure 1 should be replaced by:
trodiamagnet consisted of two spiraling copper wires. Each of these spirals had a length of 190

- Page 18, the 4th to 6th lines should be replaced by:
important to achieve this *without changing the strength of their diamagnetism and without inducing through this movement a current in the conductor bismuth.* here the advantage of a *electrodiamagnet* compared to a *usual* one became manifest. In fact, a *usual* diamagnetic material

- Page 20, the line of item 8 of the Table should be replaced by:

| 8. | above | 489.7 | 487.3 | $\pm$ 7.0 |

- Page 21, the title of Section 2 should be replaced by:
Experiments with One Little Bar of Iron

- Page 21, the 3rd line of Section 2 should be replaced by:
spiral up and down and then in the second one. The little iron bar had the same length

- Page 23, the 18th line of Section 2.4 should be replaced by:
$= \log \frac{3}{2}$ and therefore it suffices to divide the value of the nth oscillation arc by $\left(1 - \left(\frac{2}{3}\right)^n\right)$ or

- Page 24, the 12th line should be replaced by:
rest states of the needle were obtained alternately for the *upper* and *lower* position:

- Page 28, the last line should be replaced by:
opposite direction, as with the bismuth bar.

- Page 29, the 1st line of Section 2.6 should be replaced by:
The experiments about *diamagneto-electric induction* are obviously more difficult than the previous

- Page 29, the 1st line of Section 2.7 should be replaced by:
Here I describe a different diamagnetic inductor than the one with the help of which I

- Page 29, the 5th line of Section 2.7 should be replaced by:

in the *Philos. Transact. 1850, P. I.*[20] However, Faraday did not succeed to detect diamagnetic

- Page 29, the 1st line of item 1. of Section 2.7 should be replaced by:
1. Instead of a usual electromagnet, an *electrodiamagnet* is used for the induction, whose moment due

- Page 32, the 3rd line of the Section The Induction Spiral should be replaced by:
belonging to the electrodiamagnet through which the current of the galvanic pile flows and has

- Page 32, the 9th line of the Section The Induction Spiral should be replaced by:
electrodiamagnet or more precisely the spiral was wound arount it.

- Page 33, the 4th line should be replaced by:
of the needle to the other side, a second commutator *ee* next to the observation telescope in Figure 6 E is

- Page 34, the 14th line should be replaced by:
West *reversed displacement.* Finally the position the *rotating commutator* had during the

- Page 34, the 8th and 9th lines from bottom to top should be replaced by:
induced current created a decrease of the present oscillation arc, which then by a continuous change decreased until zero and then started increasing until it attained its limit. When the

- Page 46, the 8th line after item 2. should be replaced by:
the magnetoelectric effects requires the application of quite different devices than the mag-

- Page 46, the 15th, 16th and 17th lines after item 2. should be replaced by:
been even much larger if the difference between the *masses* of bismuth and iron, which were used for the various electrodiamagnets and electromagnets, had not already been taken into account in determining these ratios. By taking into account the inequality of the masses, the coarsest occurring

- Page 48, the two last lines of the footnote 26 should be replaced by:
the thickness of the wire was 2.8 millimeters. Consequently, the strength of *the separating force* exerted by the current of one layer of turns whose radius $= r$ on a point of the iron bar laying at the distance $= a$ from the center

- Page 49, the 7th line from bottom to top of the footnote should be replaced by:
weight $= 7.78$, so that one finds for its thickness $d' = 0.8342$. The value of X' for this little bar is determined

- Page 51, the 18th line should be replaced by:
poles. Some experiments by Poggendorff (*Annalen* 1848, Vol. 73, p. 475)[32] followed immedi-

- Page 53, the 1st line of the 2nd paragraph should be replaced by:
Among the devides which allow an even higher degree of fineness and accuracy than

- Page 53, the 14th line of the 2nd paragraph should be replaced by:
of the experiments, but that it is in any case far preferable to eliminate this influence

- Page 58, the 12th line should be replaced by:
that through *continued* increase of the magnetic separating force, *in the ideal distribution*

- Page 61, the 5th and 6th lines should be replaced by:
This integral value is the *some of the products* of the *intensity* with the *element of time* during which the force with this intensity is acting, according to the absolute measure [of current intensity] determined on page 321 of this Volume [page 321 of Weber's *Werke*].

- Page 62, the 10th line should be replaced by:
Here i denotes the intensity of the *inducing* current according to the same measure.

- Page 66, the 1st line of the last paragraph should be replaced by:
For each of the two main cases a *theory* can be developed and each of the theories can be split

- Page 67, the 9th line of the 2nd paragraph should be replaced by:
already existing rotatable molecules (molecular magnets or molecular currents) and into the

- Page 71, the 1st to 3rd lines of footnote 61 should be replaced by:
[Note by WW:] Namely, according to this assumption, the magnetic state of equilibrium is defined by the fact that on the surface of all molecular conductors there is a distribution of the two magnetic fluids acting on all points in the interior of the molecules in such a way taht the effect of the external separating forces gets cancelled. It follows

- Page 71, the last two lines of the 2nd paragraph should be replaced by:
a given magnetic or electromagnetic separating force) a substitute for the magnetic fluids through electric currents is possible.

- Page 72, the 10th line from bottom to top should be replaced by:
is then just due to the magnetism of iron which can be determined by the same acuteness

- Page 77, the 1st line should be replaced by:
ND. However, this driving force, which is due to the interaction of the molecules, has to increase according

- Page 88, the last line of footnote 80 should be replaced by:
current" in all places.

- Page 88, the 17th line of the 2nd paragraph should be replaced by:
resistance. The *other* currents, which are excited by the same force of separation in larger trajectories, but

- Page 90, the 6th and 7th lines of footnote 81 should be replaced by:
where n signifies the number of coils, r the radius, and a the length of the axis of the spiral. This value holds first of all for the force of separation at the center of the cylinder, but approaches it for every other

- Page 97, the 7th and 8th lines of Section 3.1.7 should be replaced by:

iron are the rotatable bearers of permanent molecular currents, be assumed, from it will follow a different law of the dependence of the variable magnetism on the magnitude of

- Page 99, the 8th line should be replaced by:
moment y to the force X, in the theory of rotatable molecular currents, has the same meaning as the

- Page 101, the 4th line of the 2nd paragraph should be replaced by:
connexion with the results of certain experiments made at the Institute of Physics in Leipzig by him and Prof. Hankel,[104] M.

- Page 101, the 1th and 2nd lines of the 3rd paragraph should be replaced by:
"A current of four elements of Grove[105] was made use of, and the magnet was maintained in its former position by a multiplier placed on the side, which was achieved on 1 to 1.5 parts of the scale. The bismuth was chemically pure,

- Page 102, the last line should be replaced by:
the bar of bismuth in the middle of each oscillation, the following results were obtained:

- Page 103, the 3rd line below the Table should be replaced by:
smaller numbers; the same was observed when the bar of iron was reversed. The stand

- Page 103, the 6th line from bottom to top should be replaced by:
be increased to 57.5 divisions of the scale, and retained at this magnitude, inasmuch as the action

- Page 106, the 11th line should be replaced by:
a particular form of the iron bar and for a definite strength of the magnetizing force acting on the iron, namely

- Page 109, the number in the last column of the Table should be replaced by:
32° 10′ W

- Page 113, the number in the last column of the Table should be replaced by:
31° 39′ W

- Page 115, the 2nd, 3rd and 4th lines of the paragraph below the Table should be replaced by:
the inductive shocks[108] (caused by the motion of the bismuth to and fro) over the entire period of oscillation of the needle, it is easy to deduce the limit-value which would correspond to all the inductive shocks during one period of oscillation concentrated on the center of the period of oscillation. The value of the

- Page 116, the last line should be replaced by:
upon the remote magnetometer, a conclusion capable of easy proof. The entire action exhibited

- Page 117, the penultimate line should be replaced by:
the iron M, divided by the mass of the iron expressed in milligrams, $p = 8190$, and thus reduced to the unit of mass,

- Page 127, the 1st sentence of the last paragraph should be replaced by:

However, from the above, when one observes that only half of the *positive* amount of electricity E flows from the Leyden jar to the Earth, because the other half is neutralized by the *negative* electricity that flows from the Earth to the jar in the opposite direction, one will have the quotient $E/\int i\,dt = c\sqrt{2}$, in which c denotes the desired constant.

- Page 128, the 4th line of the 3rd paragraph below the Table should be replaced by:

e.g., that a positive amount of electricity of $16\frac{4}{9}$ trillion units of measurement and an equal amount of

- Page 140, the 4th line should be replaced by:

of water in a column 1 millimeter long were linked in a string, and all oxygen particles in another string,

- Page 148, the 4th line of the 3rd paragraph of Section 7.4 should be replaced by:

is ordinarily chosen to be the unit of the strength of all other currents by observing it with

- Page 149, the 4th line of the 5th paragraph should be replaced by:

amount x of positive electricity that flows through the cross-section of the conductor during

- Page 149, the two last lines should be replaced by:

which is a result of whose validity one can easily convince oneself, whatever idea one may have of what happens inside the conductors during the discharge.

- Page 150, the 5th line from bottom to top should be replaced by:

If one then multiplies $\frac{1}{2}E$ by the number that shows how often τ is included in one second,

- Page 151, the 8th line of the 4th paragraph should be replaced by:

electrometer,[186] which will yield the ratio $1 : (n-1)$ of the amount of electricity E remaining in the bottle to the

- Page 151, the penultimate line should be replaced by:

through the Leyden jar, the fixed ball through the large one, and the moving one through the

- Page 153, the last line of the 1st paragraph should be replaced by:

measurements could be performed, especially towards the end of each series of experiments.

- Page 154, the 1st paragraph below the Table should be replaced by:

The last column in this Table, under n, gives the *ratio* of the charge in the jar before contact with the ball to the charge after contact, calculated for the moment of contact from the two observations made immediately before and after, contained in the second and third columns, according to the following rule:

- Page 158, the 6th line of the 3rd paragraph should be replaced by:

observer at the telescope m' watched the elongation of the magnetic needle of the tangent

- Page 160, the 8th line should be replaced by:

That yields for the cited values the desired ratio:

- Page 162, the 4th line from bottom to top should be replaced by:

of the extended line c; i.e., *the repulsive force of the two balls*:

- Page 163, lines 4 to 7 should be replaced by:
Finally, the product of the force of repulsion between the two balls with the perpendicular drawn from the axis of rotation to the direction of this force — i.e., to the line c — gives the value of the *rotational moment* that this force of repulsion exerts upon the torsion balance, which should be equal to 1.

- Page 163, the 15th and 16th lines should be replaced by:
From this follows the *rotational moment* exerted on the torsion balance by the electric force of repulsion between the two balls will be equal to:

- Page 163, the last sentence should be replaced by:
This determination of ε is based on that quantity of electricity as a unit which exerts the unit of repulsive force on an equal quantity of electricity in the unit of distance at relative rest.

- Page 172, the 23rd line should be replaced by:
that is exerted upon the compass will be equal to:

- Page 174, The 7th and 8th lines from bottom to top should be replaced by:

$$T = 1.798\,3\ ,$$

$$\lambda = 0.070\ ,$$

- Page 176, the 7th to 11th lines of the 3rd paragraph of Section 7.15 should be replaced by:
of the magnetic unit for current intensity to the mechanical unit, since the amount of electricity that passes through the cross-section in the same time interval will then be:

$$155\,370 \cdot 10^6$$

times greater in the *magnetic* current unit than the amount in the *mechanical* unit of current. As a result, from the cited

- Page 177, footnote 215 should be replaced by:
[Note by HW:] Wilhelm Weber's *Werke*, Vol. III, p. 614.

- Page 179, the 4th line of the last paragraph should be replaced by:
and negative electricity, against which those forces would disappear. Wherever

- Page 180, the 3rd and 4th lines of the penultimate paragraph should be replaced by:
(From Section 7.14), $\frac{1}{2\tau} \cdot E$ then denotes the number of millimetres that both electricities must traverse in the opposite directions in 1 second in order to make:

- Page 182, the 4th line of item (4) should be replaced by:
conductor element of length α' at a distance of r when α makes an angle of ϑ with r and α'

- Page 184, the 1st line of the 2nd paragraph of Section 7.19 should be replaced by:

The above sentence is self-evident if electric masses are so connected to their ponderable carrier that they cannot be moved without it.

- Page 184, the 5th line of the 2nd paragraph of Section 7.19 should be replaced by:
finds a coupling between the electrical masses and the metallic particles that must be dissolved

- Page 184, the 19th line of the 2nd paragraph of Section 7.19 should be replaced by:
immediately vanish as soon as the driving force ceases. — It will then follow from this that,

- Page 185, the 15th line of the 4th paragraph should be replaced by:
a Voltameter is introduced into a circuit, then the electrical separating forces that act in the

- Page 186, the 1st line of the 3rd paragraph should be replaced by:
Now, if the current intensity for this *resistance* is to be $= 106\frac{2}{3}$ in *magnetic* units —

- Page 187, the 2nd line of the 2nd paragraph should be replaced by:
that act in the direction of the current in *each unit* of free positive electricity (in the

- Page 188, the 1st line of the 2nd paragraph should be replaced by:
Should the water be decomposed at a smaller rate under the same conditions — e.g., with a rate

- Page 189, the 12th line of the 3rd paragraph of Section 7.20 should be replaced by:
defined amount of neutral fluid, in addition, and finally, how the negative electricity on

- Page 191, the 1st line should be replaced by:
that is contained in each *element of length* in the conductor is exceptionally large. However, for a given current intensity,

- Page 191, the 7th line of the 2nd paragraph should be replaced by:
units, together with 1/9 milligram of hydrogen, will move in one direction, while an equally-

- Page 191, the 8th line of the 1st paragraph of Section 7.21 should be replaced by:
another mass at a unit distance that would impart in the unit of time a velocity to the latter that would equal

- Page 191, the 2nd line from bottom to top should be replaced by:
each other, by the unit of length, if they are to have no influence on each other according to that law.

- Page 192, the 8th line of the 2nd paragraph should be replaced by:
be 439450^2 billion times larger, and the previous acceleration would be equal to:

- Page 193, the 1st sentence of Appendix I (Description of the Torsion Balance) should be replaced by:
In order to avoid as much as possible an unequal reaction of the walls of the torsion balance, electrified by the charged spheres through electrostatic induction, on the movable sphere, the balance is constructed on an unusually large scale.

- Page 195, the 8th and 9th lines should be replaced by:
c a 5 mm protruding threaded spindle, in order to attach either the body, by whose period of oscillation the torsion coefficient should be determined, or the brass wire

- Page 195, the 3rd line of the 3rd paragraph should be replaced by:
at right angles to it, a brass rod rt with a running weight. The tips rested on brass bearings, q in a conical hole, p in a slot. The running weight pushed the

- Page 215, the 10th line of the 2nd paragraph should be replaced by:
If the corresponding expression be formed for i, remembering the equation by which h has

- Page 217, the 6th line of the 2nd paragraph should be replaced by:
which the wire is at each moment divided by this point, the same current intensity exists everywhere

- Page 217, the 1st line of the 3rd paragraph should be replaced by:
The current intensity before the point at which the break occurs, considered without regard to

- Page 219, the 4th line should be replaced by:
This expression shows that the current intensity at the commencement of the wire is 0 up to the

- Page 219, the 1st line of footnote 276 should be replaced by:
[Note by AKTA:] In the *Philosophical Magazine* this equation appeared as

- Page 223, Equation (9.16) should be replaced by:

$$\frac{\partial^2 V}{\partial s^2} - \frac{2}{c^2} \frac{\partial^2 V}{\partial t^2} = \frac{r}{8\gamma l} \frac{\partial V}{\partial t} \ .$$

- Page 241, the 1st line of the 3rd paragraph should be replaced by:
With Jacobi's resistance standard,[319] a copper wire of 7.62 m length, 0.333 mm radius,

- Page 248, the 3rd line should be replaced by:
important that the same determination should be repeated for the two larger needles with

- Page 253, the 7th line of footnote 376 should be replaced by:
reverse the polarity of the needle, [WSH03].

- Page 258, the 1st line should be replaced by:
non-uniform and *rapidly changing* motions; because this law, first formulated by Ohm,[384]

- Page 258, the 5th line of the 2nd paragraph should be replaced by:
rapidly changing currents. Furthermore, the development of the laws, as far as it has been

- Page 271, the 1st line of the 5th paragraph should be replaced by:
Hence, the electromotive force due to a current element of length α with its current

- Page 280, the last sentence should be replaced by:

But now, when α is very small, the latter two parts of this value of U may be considered as vanishing compared to the first part, then one may put

- Page 281, the 11th line should be replaced by:

conducting wire, considered as a cylinder, on any point of the middle cross-section of this piece, is

- Page 287, the 5th line should be replaced by:

under consideration. Hence multiplying this force by the number of positive electric units of

- Page 287, the 1st line of the 2nd paragraph should be replaced by:

In order to take into account all forces which act on the electric particle of the conducting wire under consid-

- Page 289, the 5th line of the 4th paragraph of Section 18.6 should be replaced by:

rather $\lambda = \infty$ when α vanishes, as is easily seen because the number, $= \mathfrak{E}$, of positive electric units

- Page 308, the 7th line of the 2nd paragraph should be replaced by:

locity during the unit time on a mass of one milligram), it follows that r^2 is the force exerted by *one*

- Page 309, the 2nd line of Section 18.15 should be replaced by:

itself in a circular conductor after an arbitrary disturbance of equilibrium turn out to be a series of *wave*

- Page 310, the 1st line of the 3rd paragraph should be replaced by:

The *intensities* of the various wave trains, which are proportional to i^2 according to the rules of wave

- Page 313, the 3rd line should be replaced by:

Already Kirchhoff has found this velocity for the propagation of electric waves and remarked:[434]

- Page 313, the 3rd line from bottom to top should be replaced by:

measures of resistance, we have $W = \pi c^2 a w'/4$ or $a^2 c^2 w'^2/128 = W^2/[8\pi^2 c^2]$, after what[437]

- Page 329, the 2nd line of the 1st paragraph should be replaced by:

have at the same time equal *phase* and oscillation *amplitude* in all parts of a circular conductor, even if the

- Page 330, the 6th line of the 2nd paragraph should be replaced by:

velocities of the small magnet. Choosing the three conducting wires already exemplified in Section 18.16, we get

- Page 337, the 3rd line of the 2nd paragraph should be replaced by:

wires and the solenoid weight carried by them, there is a *static directive* force for the solenoid which can easily be determined and shall be denoted

- Page 339, the penultimate line should be replaced by:

to the first part and the solenoid to the latter part of the closed conductor. Then from this

- Page 345, the 7th line of the 7th paragraph should be replaced by:
wire f^{III} and the multiplier wire f^{IV} of the second dynamometer, but will

- Page 353, the 15th and 16th lines should be replaced by:
After this mutual comparison of the sensitivities of both dynamometers, the observed deflections of one dynamometer alternatively switched onto two different places of the circuit may

- Page 353, the 23rd line should be replaced by:
other dynamometer is valid, and this *deflection calculated for the first position* of the main

- Page 360, the 11th line should be replaced by:

$$625.20, \qquad 625.29, \qquad 621.70 \ ,$$

- Page 380, the 1st line of the 2nd paragraph should be replaced by:
Hence it would be possible to determine *directly* the magnitude $r\mathfrak{E}$ *without consid-*

- Page 393, the first line after Equation (19.19) should be replaced by:
same way as he had written them in his 1871 postcard to Tait, namely:[507]