VIII. On a new mode of equally tempering the musical scale

Mr. John Farey

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distilled water, or on the side of the positive pole, without any disengagement of gas having been perceived in the solution of nitrate of soda, or from the negative pole.

But the poles having been changed, so as to make the distilled water communicate with the negative pole, and the solution of nitrate of soda with the positive pole, the energy of the pile became instantly very sensible in the two tubes; and there were soon established, towards both poles, considerable currents of bubbles, and continuing nearly 200 hours quite visible through the bell glass which covered the apparatus.

M. Riffault has also subjected to experiment the solution of nitrate of soda in both tubes. He still continues these two experiments, and attends to them with great care. He hopes they will present some interesting results, with which he will make the Galvanic Society acquainted.

VIII. *On a new Mode of equally Tempering the Musical Scale.* By Mr. JOHN FAREY.

To Mr. Tilloch.

SIR,
FOR the information of such of your musical readers as may be advocates for the *isotonic* or *equal temperament* scale, and also for enabling those who prefer other systems, to make deliberate and just comparisons of that system in practice, with their own favourite systems, I embrace the present opportunity of stating, that in pursuing the inquiry which (vol. xxvii. p. 204, of your Magazine,) I recommended to musicians, and beg here still further to recommend, into the many different *wolves* which can arise by comparing the seven conchords with each other, in all their possible combinations, I discovered, on the 12th ult.—that 5 true *fourths*, when compared with 3 true *fifths* and a true major *third*, or 4ths — 3 V — III, give a wolf or difference, which agrees with the proper flattening of the *fifths* in *equal temperament*, to a surprising degree of exactness; differing therefrom no more than 3,2114 in the logarithms of eleven places

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of figures, wherein the elementary comma ($\frac{1}{16}$) is expressed by 53950,3189; being an error but of one part in sixteen thousand eight hundred parts of a comma!

The practical application of this will consist, in tuning five successive *fourths* upwards from the key or pitched note, each quite perfect; from the last note tuning downwards two *fifths*, and a major *third* in succession; and considering the last note so tuned, as the equal temperament *fifth*; from which *4ths* are again to be tuned upwards and $2V + III$ downward, for the second *Vth* in this scale, repeating the operation as above, and descending octaves when necessary, until the twelfth *Vth* is compared with the octave of the key-note, from which it will not differ in any sensible degree, if the operation be rightly performed; because 12 of my fifths as above*, differ from 7 octaves but $\frac{1}{14106}$ th part of a comma.

I intend to publish the further details of this system when leisure will permit; and am, sir,

Your obedient servant,

12, Upper Crown-street, Westminster,
June 21, 1807.

JOHN FAREY.

IX. *Description of the Optigraph (invented by the late Mr. RAMSDEN) as improved and made by Mr. THOMAS JONES, Mathematical, Optical, and Philosophical Instrument Maker, No. 124, Mount-street, Berkley-square.*

THE methods used to facilitate the practice of drawing in perspective, as well for those versed in this polite art, as for those who have made less proficiency, have been various and numerous. Though some have supposed that the warmth of imagination and luxuriance of fancy, which impel the mind to the cultivation of the fine arts, are not to be confined to mechanical modes, yet upon observation and inquiry they will find that the most able and accomplished artists are often obliged to have recourse to some rules, and to use some mechanical modes to guide and correct their

* Which are each $2t + 3H$, or $\frac{375}{2^{14}}$, and their log. .8243988,5.

pencil :