LXI. Explanation of an experiment on tuning, in reply to a correspondent

M.

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preference over other yellows, on account of the small quantity of it which is requisite.

When mixed with gum, this substance might give a much purer and much more solid yellow than camboge.

From this examination of gum ammoniac, it results that 100 parts are composed as follows :

Gum	18.4
Resin	70.0
Glutinous matter	4.4
Water	6.0
Loss	1.2
Extractive matter	0.0
Total	100.

LXI. Explanation of an Experiment on Tuning, in Reply to a Correspondent. By M.

SIR, It was not till late in April that I had the pleasure of receiving your Number for the preceding month, otherwise I should have sent you the following remarks at an earlier period.

If the author* of art. xxxii. will, uninfluenced by passion, re-examine my letter on modes of tuning, (vol. xxxvii. p. 111), he will not discover any expressions to justify the charge of my having asserted the accuracy and success of a hasty experiment, there faithfully described ; of my having given any estimate of the power of any description of monochord ; nor of my having made a boast of any skill of my own : after due consideration, it will therefore appear that, instead of opposing my assertions, instead of controverting opinions which I have stated, this discerning writer has, in the elegant article referred to, been combating the mere creatures of his own disturbed imagination. We at the conclusion of the experiment, were, I think, as fully sensible as that very ingenious writer may be, of its errors ; and I should have inserted a table of the differences between the scale of sounds produced and the system attempted, had I been disposed to waste your valuable pages on unnecessary schoolboy-calculation. I repeat, that with practice, and by employing longer time, the errors would be

* I shall consider the Rev. C. J. Smyth to be the author, till I am better informed. Perhaps the person who could write it, will not be ashamed to avow himself the author.

less ;

less; if it were necessary to have recourse to such a method. But, although I have said that the majority of practical tuners are not guided by calculation, and that therefore such persons are not completely qualified to determine which is the best of the numerous unequal temperaments already published; I have nowhere affirmed that they tune by the melody. Nor have I ever imagined that the *differences* of monochord-lengths are proper measures of the intervals. This person boldly asserts, but for what purpose I cannot discover, that "tuners *never* resort to the melody in tuning." How then, let me ask him, is a tuner enabled to perceive whether the "conchord" which he is tempering be a fifth or a fourth? It is probable that his answer will not be hostile to what I have before advanced. I once saw a professional tuner much embarrassed in a first attempt to adjust the *bi-equal* thirds* of the Stanhope temperament; not perceiving, till he had recourse to the melody, that one of his thirds was beating flat.

It is with most tuners by profession as with the composer Grétry; who, after declaring himself ignorant of calculation, and describing his method of tuning by thirds, by fourths, fifths, sixths, and octaves, adds, "C'est alors un tempérament de sentiment qui guide l'oreille, et non celui de calcul." (Essais, vol. ii. p. 362). Their rule is the same as Keller's; namely, to make all the *III*ds as sharp, and all the *V*ths as flat, as the ear will permit.—See Holder's Harmony, 8vo, 1731; and Catalisano's Grammatica Armonica, 1781, p. 78 and p. 156.

In my last communication, F.750 instead of F.749, is an error of transcription. The following asterisk should have referred (as well as the first) to Chladni's Acoustics, wherein the lengths for the equal temperament are: C1.00000, C* or D^b.94387, D89090, D*84090, E79370, F74915, F*70710, G66742, G*62996, A59461, A*56123, B52973, C50000, p. 37, § 26.

The monochord we employed was constructed to determine the lengths of wire more minutely than your correspondent seems to have supposed; but owing to an accident, it could not be depended on to more than three places of decimals: three were therefore preferred to more, having only the semblance of greater accuracy. From this, he very logically concluded that we were quite ignorant of his seeming profundities.

To conclude, I leave Mr. Smyth to the arrangement, as

* See Mr. Farey's article "Bi-equal," in the Edinburgh Encyclop. vol. iii. p. 497. (1811.)

to the enjoyment of his feast of *palatable* dishes, as long as he is without the power of obliging me to conform to his *taste*; but expecting that, when he publicly holds up one system as better than others, he should give sufficient reasons for the preference: and I assure your correspondent, that whatever title he may next apply to himself, or to his opponent, will to me be a matter of the purest indifference.

May 1, 1811.

A. MERRICK.

LXII. *Method of procuring Turpentine and other Products from the Scotch Fir.* By Mr. H. B. WAY, of Bridport Harbour*.

SIR, THE enormous high price of turpentine, tar and pitch, last year, brought to my remembrance that I had, in 1792, when in America, made some memorandums on the subject of obtaining them in North Carolina, which, on referring to, led me to think that they might be obtained in this country. I was induced to mention it to my relation and friend, John Herbert Brown, Esq. of Weymouth, and of Sheen, in Middlesex, when on a visit at my house, and I expressed a wish that I could try the experiment with regard to turpentine; when he very kindly gave me leave to try it on three trees growing on his estate, about three or four miles from this place, and he went with me and fixed on them, and early in last April I had them prepared for the purpose of extracting the turpentine, and they have been running till the 18th instant. The weather, except the last month and part of this, has, from so much rain falling, and there being so little hot weather, been particularly unfavourable for this business, as, the distance being such as to prevent the trees being regularly attended, the hollows were frequently found by my men full of water, and a good deal of the turpentine, which ran off with the water, lay on the ground. Under all these circumstances I was only able to obtain from the three trees about two pounds and a half of turpentine. Mr. Brown being with me again the 16th and 17th instant, as he wished to take the trees down, I begged he would allow me to take a part from one of them, for the purpose of sending to the Society of Arts, Manufactures, and Commerce, with the turpentine collected from the trees; which he most readily complied

* From *Transactions of the Society for the Encouragement of Arts, Manufactures, and Commerce*, vol. xxviii.—The Society voted the silver medal to Mr. Way for this communication.

with.