

# **A PROTEST AGAINST THE MODERN DEVELOPMENT OF UNMUSICAL TONE**

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Unmusical Tone. - The evidence of the development of unmusical tone is constantly on the increase. Organs, Church Bells, Pianofortes, and some of the Orchestral Instruments manifest this downward grade in constructive aims, and, doubtless, the pernicious system of forced tone in the training of voices in the present day is another symptom of the concurrent yielding to false ideals. Seemingly the deviation from pure tone is cultivated deliberately with a pride in its achievement. The evil has proceeded so far that I cannot refrain any longer from raising my protest against it, well assured that I am not alone in deploring it.

How and why this vulgar and baneful tendency has become so assertive, - whether it is due to sheer incompetence to judge, or to a hankering after notoriety, or to a common submission, both on the part of the makers and of the public, to the bad influence of certain examples, - it is not my purpose to inquire; I take note of it because it is forced upon my attention as a tendency strongly emphasized in modern doings, and in modern handicrafts connected with music-making, and I strongly feel that those who, caring for the best interests of musical art, have the position and the power to influence, should make their voices heard in combined efforts to stay the general decadence.

For myself, I confine my observations to

ORGANS,  
CHURCH BELLS,  
PIANOFORTES.

As organ builder, bell founder, and pianoforte maker, fully matured in thought and judgment by experiment and experience through a long series of years, I have some record. Let me say at the outset, that I wish my remarks to be taken as quite apart from personal or business interests of any sort, and with this view I mention no names in the instances I refer to, for my sole object is to repress the false and point the way back to "pure tone".

Unmusical Tone - Pure Tone. - I say "unmusical" because it is deficient of those elements, harmonic and constituent, which are essential to the satisfaction of the refined musical ear. In using the characterization "pure tone", I am confronted with the possibility of other notions of pure tone being held as of equal validity, and of the whole question being lightly disposed of by the phrase "tastes differ". Now, I cannot admit that it is a matter of taste, to my mind it is one of natural law, of art-rules, and principles. My ideal "pure tone", what is it? I can only define it by details set forth as follows:

In organ-work the ruling power of the whole body of tone is the Diapason: it

rules every other stop in the completed organ. Every keyboard instrument is considered to have middle C as its standard note, and to it all other notes throughout the scale are held subordinate, both as regards power and quality.

In an organ this note is called two foot C, the pipe producing the note measuring very nearly that length, and the rest of the tone throughout the organ should be regulated by it, everything else should be in balance with it. Hence it will be obvious that the selection of this one pipe is of paramount importance; if chosen too large in scale, then, as a pattern of quality, it will of a surety prove itself a bad guide, the stop springing from it will be thick in character, heavy, and in the treble octaves, lifeless; if too small in diameter, then the quality will be thin and wanting in the dignity that should belong to the Diapason tone. Not alone is the scale or diameter of pipe in consideration, but every feature of detail must be also duly proportioned thereto, else the pipe will display the divergence from right principles by the quality heard in its sound, and more prominently pronounced will be the quality when the stop is heard in the combinations of harmony.

Without doubt the prevalent practice of the present day is to appropriate "big scales", and its tendency is to "high cutting up" of the mouths of Diapasons, both fatally wrong, both productive of organ tone deteriorated in quality.

My standard of an ideal Diapason tone, as for a representative organ of good size, may be stated as the tone given by a cylindrical pipe, called two foot C, which is  $2\frac{3}{16}$  inches in diameter, having a mouth in width one quarter of the circumference, and its height  $\frac{3}{8}$  and  $\frac{3}{32}$  of an inch, at the foot a wind-hole  $\frac{3}{8}$  and  $\frac{1}{16}$  of an inch in diameter, the wind pressure by gauge  $3\frac{1}{2}$  inches, the pitch  $267\frac{1}{2}$  vibrations at  $60^{\circ}$  Fahrenheit; the pipe being voiced to sound its note firmly, yet leaving it securely within that verge beyond which it might fly off to its octave. The bearing of these technicalities will be readily comprehended by those who possess the slightest knowledge of organs.

A pipe conditioned as described gives that tone which is fitly called Diapason, and exemplifies my ideal of "pure tone". To my mind the details I have given are fixed by natural laws of relation, and the pipe has that vigour in speech, that brightness and richness in quality, which should belong naturally to the perfect pipe, as conceived of, and appreciated by, refined judgment of ear. A stop worked out in scale on these lines throughout I accept as "musical".

The essentiality of the conditions I have named is confirmed by the results following any departures therefrom; thus, the slightest deviations in the height of mouth would cause amazing variations in the tone quality; if the mouth be cut higher, the ground tone will become more pronounced, be more or less unsteady, and the harmonies will not be pleasantly associated and related in the whole sound heard emanating from the pipe; if, on the other hand, the pipe is voiced with a lower mouth, the ground tone will be proportionately reduced, the harmonics be strengthened, and a thinner tone be produced, brilliant and piercing, in degree according to the reduction in the height, and may easily be carried to the disagreeable extremes often heard displaying too much of the so-called "Gamba" quality.

I will not enter into the matter of Flutes, Gambas, Salicionals, and many other stops, which, beautiful as they may be, have little effect on, and are subordinate to, the commanding influence of the Great Tone, by the character of which the whole organ is judged.

The prevailing plague which, for brevity's sake, I have called the modern development of unmusical tone, has been for some considerable time a topic of remark, and of discussion in musical circles, and the urgent need for some serious protest has been clearly recognized. I, in my private capacity, know that the evil is lamentable, and my desire is to help to remedy it. For my own part, in reference to the particular way of action I have chosen, I may say that the resolve to do so has arisen from some late experiences in visiting churches in London and elsewhere, and one I select as an instance for comment.

The church I allude to would be by an organ builder called an exceedingly fine place for sound, being in every sense equal to a cathedral for augmentation of sound, without the size conducing to its absorption. I take notice of this church, as the organ has been pointed out as one of extreme grandeur by many who, I have since thought, ought to know better. Being present at a service, I had a full opportunity for critical judgment of the instrument, and also for estimating how it fulfilled its purpose in choral services. Briefly, then, this was my verdict, the Great Bass, or pedal pipes as they are sometimes called, had great intensesness, but the diapasons were excessively coarse, being evidently pipes of large scale having high cut mouths, and consequently producing a ground tone approaching in character the hollowness of the Hohl Flute, that is, an unsteady ground tone, the harmonies, such as it had, being unpleasantly associated, and in fact a tone which could only be described as hooting. Needless to specify further, the rest of the organ of course following on the pattern lines, with more or less painfully enforced groupings of thick, unrefined tones.

Another experience was upon a visit to a church of far greater dimensions, but its equal as to its aids for sound. When I entered, the Psalms were being sung, and the tone of the organ was tolerably bearable. Before long, however, a stop was drawn more offensive in tone than anything I have ever heard; the stop indicating a large scale, and displaying high cut, over-blown tone quality, with all natural imperfections of such a system exaggerated to the highest degree, the consequence being the the singing was thoroughly interfered with, and there was no longer any sympathy between the organ and the voices.

Thoroughly disturbed, I turn away, wondering, as I leave the edifice, how it is that such organ work is tolerated, yet passing on, hear in the irresponsible chatter of society, congratulations on this side and on that, on "the fine organ we have in our church", - words which give emphasis to our nineteenth century notion of common property

With some modern organ builders, and some organ appraisers, a desire is manifested to get rid of the old acknowledged and appreciated mutation work. That work was well understood by the older builders, not for itself alone, but for its wonderful effect in combination with the Flue-work, and other stops; certainly nothing can be more magnificent than the Quint and Mixtures when they are properly scaled, and voiced to take up their designed position amidst their surroundings. Using his utmost discretion, the

first idea of an amateur is to get rid of things he does not understand, and as so many organ specifications are now drawn up by amateurs, the reason for the constant omission of Mixtures in modern organs is not far to seek.

To a similar source, in ignorance of knowing how to do better, may be tracked the modern practice of making heavy-pressure reeds insipidly smooth; fine quality reed-work is undoubtedly one of the most difficult departments of organ building, taxing alike skill, patience, and judgment of ear. Estimated by some recently accepted performances in this line, the reed-work, which of all others should give to the organ brilliancy and grandeur, has become another source of trouble to sincere lovers of the organ, and to pretenders an aid toward further experiments in the debasement of organ tone. In Diapasons there is nothing to my mind so objectionable as "slotting", and the practice should not be admissible even in the full-scaled German "Viol di Gamba", as it inevitably weakens the ground tone of the pipes; but it may be rightly carried out in the smaller scaled French "Viole de Gambe". The French builders are very partial to slotting, making it even a feature of their Diapasons. The quality, however, has been found so unsatisfying to English ears, that I have in more than one instance had to take out their Diapasons and replace them with pipes of more genuine Diapason character.

In Schulze's day the fault was the same as that I am decrying, although it had not then gone to the same extremes as now. On one occasion Schulze came to meet me in a large country town to examine an organ, at that time sufficiently novel and typical of the French style to claim attention. In this organ the same evil was apparent. Schulze could not bear the slotted Diapasons it possessed, especially a Diapason in the solo organ, and when I came to the Flutes he promptly dismissed them, saying he could not listen to them, they were all far too large in scale. I mention the incident because Schulze had the most refined ear and was one of the most acute judges of quality of tone ever known; with him I had many long conversations, and as we were both seriously in earnest upon the matter, these sometimes lasted all day, sometimes, too, pretty far into the night. Some rubbish I have seen in print about Schulze having taught voicing in this country, but that he never did; his scales he willingly gave away, but then, as he said laughingly, "after that, they have to be made to go", his good nature extended thus far, but stopped short at "teaching voicing". As his visits to this country were for the purpose of putting up his own work, it is not in the remotest degree likely that he would have disclosed those methods which, under his critical perception of quality, gave him acknowledged pre-eminence in his art.

In the present day of keen, almost fierce, competition, the inducements to using inferior materials in organ work are strong and pressing; few builders can resist the demand for cheap organs, and refuse to compete in tenders for specifications. The public demand is for cheapness, for a great deal for least money, and the lowest tender is flourished by the chief spokesman for it, much in the spirit of the bargain-hunting at a draper's counter. Builders who respond to this demand are doubtless wise in their generation; they agree to build an organ to answer the purpose for so much money, and as a mere matter of trading it is legitimate enough, there is nothing to be said against it; but protest may rightly be set up when such organs are passed off as the best that can be made, and with unabashed confidence proclaimed to be equal for good tone and workmanship to organs that are higher priced. I say build as cheap as you like, but don't represent it as the best. The

current notion of buyers seems to be that the low price named in a tender is due to a tenderness of conscience on the part of the builder, who is content to work for much less profit than those other men who are said to be exorbitant chargers, having no consideration. This very common error calls for some words of enlightenment. It is imagined that the high-priced organ building must bring in the largest profits, whereas the contrary is the case, for it is the building of cheap organs that pays best. The fact is well known. To fit the order it is only necessary that the labour should be paid for at a lower scale, a mass of details be less regarded, and the materials used be of a lower grade. To bring the matter home to the comprehension of the outsider, the question of "metal" will be to the point. What class of metal is used in cheap organs? Bear in mind that in very large proportion the stops of an organ are of metal. Now those readers who have the least aptness for problems in finance will be able to understand the scope for saving of cost, when I state that the metal used for making the pipes may be purchased (taking present market prices) at a cost of E10 per ton, or at a cost of E36 per ton. Between these two prices there are intermediate prices. Is it not to be expected that the cheap builder (and he prides himself upon being cheap) should suit his practice in this department of the work to fit the figures given in his tender? The pipes will look all right, the untutored eye will know no difference. My plea is for good tone, for that only, and I affirm that with a common grade of metal it is not possible to get the best tone.

In this country the combinations making up what is in organ pipes technically called "metal" are as follows:

No.1. Old lead, mixed with a proportion of antimony to obtain the necessary hardening. Old lead is a term describing such kinds of lead as old pipes, water pipes, sheet roofing, lead from old tea-chests, and scraps and sweepings, melted up together for organ pipe work.

No.2. Much patronized. Old lead together with plumbers' hards, and a little type metal, which consists of lead and antimony, being printers' worn out type bought for this purpose, and used in about the proportion of seven pounds to the hundred weight.

No.3. A better metal; lead with combination of twenty per cent. of tin and a little type.

No.4. Better still; this metal comprises two-thirds lead and one-third tin, but even this is not sufficiently hard to last. Tin at present time costs £60 a ton.

No.5. Spotted metal, practically half tin and half lead; this I have always used myself, considering it the best for tone, and of a more lasting character than any other. It is of importance that new lead should be used for this combination.

No.6. This is almost wholly pure tin. Seldom adopted, except in France.

On the Continent I believe that nothing less than one-third tin (as No.4.) is recognized by good makers as fit for organ metal pipes. The inferior combinations cannot be used in organs that can be held justly to claim being of good construction. The great and valid objection is that pipes made of the lower grades of metal do not last in proper condition; they sink at the feet and otherwise get out of shape, or, if a greater proportion of antimony has

been given for sake of the requisite strength and firmness, a metal so brittle is produced that it will not stand the ordinary manipulation in the processes of tuning, and splits under the action of cones.

Beyond spotted metal (as No.5) there is great difficulty in doing anything at all, no probability of property casting until we have almost pure tin, or with only nine pounds of lead to the hundred weight added, a trifling excess of the tin is called for when the substance of metal is great, in order to obtain the same character of spot. It is at a point a little over the one-third proportion of tin that the metal begins to spot, but this is small, and is called in the trade "pepper and salt spotting", not accepted as the true "spotted metal". I remember once building an organ in which I had a Double Diapason of spotted metal of considerable substance, also, for the sake of the contemplated comparison, an Octave Diapason or Principal of the same scale, and of equal substance and voiced exactly similar, but the pipes made with the greatest proportion of tin admissible, and after carefully testing the tone with a musician of considerable acuteness of ear for sound, we came to the conclusion that it was next to impossible to detect any difference, but that if one was more to be preferred than the other, it was the spotted metal.

Spotted metal of good substance does undoubtedly influence the tone, the pipes have a ringing brightness and life in their tone that is not yielded by pipes of inferior grade; some talk there is of the needlessness of paying for appearance, but it is not alone a question of appearance; the spotting is really the test of the hardness, goodness, and suitability of the metal, and although there is a scientific dictum that material makes no difference in sounds from pipes, I know by practical experience that there is a greater firmness in the body of tone, together with a greater richness of harmonics from pipes of spotted metal, and my conviction is that No.5 is essential for the production of good musical tone.

Wood pipes afford a good illustration of the effect of difference of material; it is quite impossible to get a fine Gamba, Violone, or Diapason quality from pipes made entirely of soft wood; for such quality of tone, they are best made of hard wood, or a hard wood lip inserted will greatly help to overcome the difficulty.

As regards zinc for large speaking pipes, I hold that pipes of that material are not desirable above the 8-foot C, for the tone becomes tight, with a sense of deadness. Once, building a large organ which had two very large fronts of zinc pipes, some of them being 16 feet, I was desirous of using some of the 8-foot part for the bass of the Open Diapason, but I found upon attempting to match the tone from the spotted metal with these zinc pipes, that at F# above 8-foot C I had to abandon them, and to carry my spotted metal stop down to G, and stand the pipes inside, behind the zinc front.