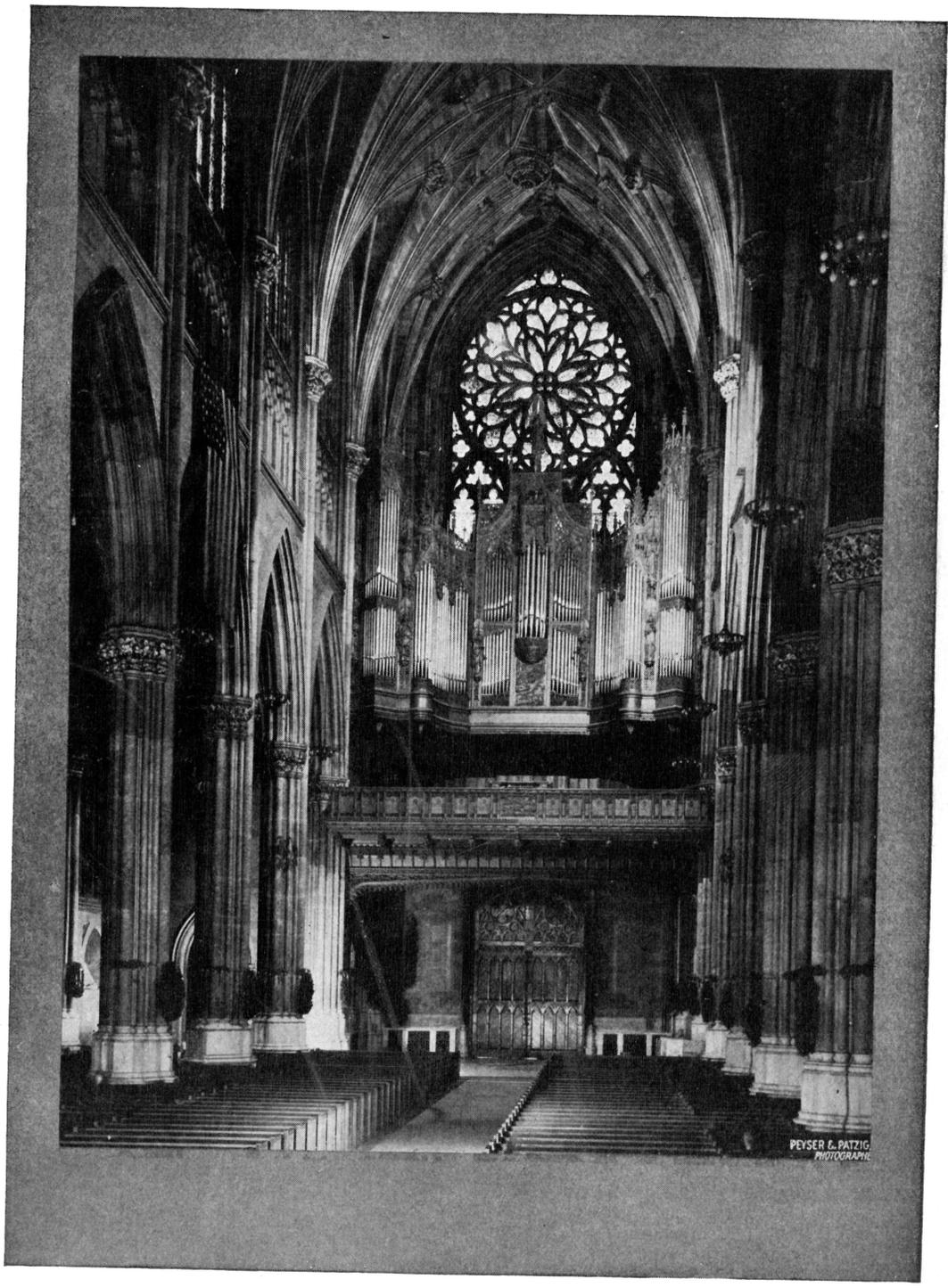


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An Advance in Organ Design

An Organ Builder's Statement of the Things he Believes Proved in
The Organ being Built for Mr. Joseph W. Clokey

By J. B. JAMISON



WHEN I LOOK BACK on the progress of the Claremont organ, and think how its specification was started in California, grew in London, was changed in Paris, and finally took fairly concrete form on paper laid on a window-sill of a hotel in Stuttgart, and then was revamped in Los Angeles and done over several times after that in Brattleboro—it seems logical that its sectional ensembles should be as international as its preparation. One of the chief claims this organ has to uniqueness is that it is an international tonal ensemble.

As I went from country to country and heard, tried, and studied the best features of national schools of organ design, it seemed to me that no one of them was entirely right or comprehensive, but that a judicious blend of the best features of American, English, French, and German practises, would result in the most catholic of organs, with the broadest tonal palette of all, and without question the most enjoyable of instruments, as well as the most majestic.

Therefore, the Claremont organ has a typical English Great, with one or two American embroideries, and one original idea of our own; a quasi-French Swell, an American Choir, and an American-English Solo. There are a few German touches and they are important ones. The Pedal has no claim to nationality, but is a rather comprehensive affair, with considerable independent work and a good supply of manual borrows.

After my return home, Dr. Alexander Russell, when I outlined to him what we intended to do,

was kind enough to say, "You have gone further along the right road to the ideal organ than any one has ever gone before." I thought so too, at the time, but as the thing gradually grew into actual chests and pipes, and the audible result took shape, I felt convinced that no one could have visualized how correct the original plan was, or how naturally the several parts would fit together when completed.

When some of the organists who visited the factory would be playing the Great, I have many a time shut my eyes and said, "I am in St. Paul's," and when the Swell reeds came on there was more than a suggestion of Notre Dame. The Tuba, being an English-cathedral scaled stop, swings the locality round again when it is played.

The most important manual of any real organ is the Great, and the Claremont Great deserves the name. It has weight, majesty, solidity, brilliance, and ease—all in abundance.

The first problem, after getting information from the acoustic engineer of the auditorium, was the choice of timbre for the first Diapason 8'. Inasmuch as the natural law of crescendo in all voices and instruments is from soft suave tone to powerful brilliant tone, the Claremont Great gets brighter as it gets bigger. I have never been able to understand how any correctly designed ensemble can get rounder in tone as it grows in power. It is contrary to nature, and illogical, to do so.

So, depending on the acoustic engineer for the period of resonance of the to be completed auditorium, we selected a slight modification of true Schulze Diapason tone for the First Diapason of the Great. On this timbre the rest of the Great is erected. Our own contribution—the original

idea mentioned earlier—was to have two complete Diapason choruses in the Great. One of them, outside expression, the brilliant one; the other enclosed, the blander one. Each of these flue choruses to be supported by its complementary reeds. This, we figured, would satisfy the proponents of unenclosed Great sections, and would promote playability and build-up.

So the Schulze Diapason chorus is made up of independent ranks of 16-8-4-2 pitches, scaled and voiced for correct relative power and timbre, on 5" wind, all outside expression. It was given the best possible location in the chambers. Completing it is a five-rank Cymbal, broken into a two- and a three-rank pair, after the composition of Harrison & Harrison of Durham, and made from close imitations of Silbermann pipes. Part of these chorus Diapasons and mixtures are fitted with slide tuners, part slotted, and part coned, according to their duties. Supporting this section, and also outside expression, are three Trumpets 16-8-4 on 7" wind. The choice of reed tone for the extension of flue volume has been fortunate. It is hard, solid reed tone, without fuzz, and with a certain brassy

NOTE: By Editorial request Mr. Jamison herewith discusses in detail the tonal aspects of the most important undertaking of the Estey Organ Co. to date—the organ being built for Claremont College. There is no longer any doubt that the Estey factory has, in this notable organ, done something that will write itself across the pages of American organ history. It is of vital importance to those seriously interested in the development of the organ that they know and can examine for themselves the impelling reasons behind the emphasis this noted firm is placing upon the changes inspired by Mr. Jamison after his recent intensive contemplation of organs abroad. In the words of Mr. C. Seibert Losh, the effort to persuade the American that the Englishman's idea of an organ is better than his can not meet with permanent success; it is wholesome to note that Mr. Jamison and the Estey Organ Co. find no more to praise in England, France, or Germany than in America, but have merely adopted equal portions of good from all four countries—a step the other countries are too tradition-bound to undertake. The reader is referred to the article by Dr. William H. Barnes on page 454 of T.A.O. for September, wherein Dr. Barnes reviews these same achievements from the standpoint of the disinterested spectator. Obviously Mr. Jamison deals with theoretical aspects of organ building and is more interested in foundational and fundamental tonal aspects than in any of the innumerable effects of loveliness which have made themselves increasingly prominent as added luxuries in American organs of the past decade or two. These things are easy enough to add. Mr. Jamison here deals with the more difficult problem of foundation and ensemble.—THE EDITOR.

splendor in the low octaves. These reeds are well developed harmonically, and blend perfectly with the flue work.

The 8' Diapason has very great power, and is so rich, harmonically, that the casual listener would suspect it had a soft mixture drawn with it. Yet there is not a trace of forced or overblown quality in it, and standing a foot away from the pipes, not a bit of windiness can be heard. These pipes are fitted with slide tuners. The Double has patented half-length pipes, bearded, for the 16' octave. Above that it is somewhat more foundational than the unison rank. The Octave and Fifteenth gradually increase in brightness. The Harrison-Silbermann mixture is a sheet of silvery flame. Its tone is musical and actually "sweet," the individual pipes having a charming timbre. It breaks at every C-sharp on a different harmonic, and is a very complex affair with nine different scales and two mouth-widths, and one change of scale ratio. I would be glad to furnish any enthusiast or builder with a scale stick, a note book, and free access to this mixture for a day, and be willing to wager he could not copy it.

When the 16-8-4-2 mixture chorus is drawn it sounds like one voice. A great many resultants—the result of proper scaling and voicing—of course creep into the ensemble, and do their share towards solidifying it. Rapid passages in the upper section of the keyboard emit a dazzling harmonic shower. Contrapuntal work is perfectly clear in all parts of the keyboard compass. A former organist of Cologne Cathedral called it "the nearest approach to the old Bach organ in St. Thomaskirche in Leipzig I have ever heard."

The enclosed Diapason chorus is, curiously, larger scaled than the exterior chorus, and is on higher wind—6". This unusual treatment is of course not obvious with the pipes in a box. But it enables the build-up between enclosed and unenclosed flue work to be most gradual—perfectly so.

It is based on an approximation of Harrison & Harrison Diapason tone. It is brighter than actual Harrison work, but the color spread between it and the Schulze chorus is just as wide as we could make it and still have them stick together when both were drawn. The contrast in mood, between these two choruses, when drawn with pistons and played antiphonally, is one of the finest effects I recall having heard. Each acts as a foil for the other. Sometimes I liked one better, other days the other, with a final settling of preference for the Schulze.

The Second Diapason 8' in this chorus is the finest job of individual voicing I have run across. It is a register that will stand any criticism for evenness of quality. It is supplied with a Contra-Melodia 16', for a double, a soft 5 1/3' Quint, an Octave, Twelfth, and Superoctave, and a four-rank Mixture, 17-19-21-22. Naturally this chorus is not as cohesive as the Schulze, not having the harmonic

development to make it so, but still it is far from being dull or "wooden" tone, or "aloof" tone. It runs into fairly bright trebles. It is supported by a unified Tromba at 8' and 4' on 12" wind. This reed is as powerful as the average four-manual Solo Tuba. The Clarion pitch enables it to fit into full Great without seriously hurting the clarity. I believe it would be wrong to leave it at 8' only, as then it could not be assimilated. It is not a honky Tromba, having considerable fire, but it is not so bright as the unenclosed Trumpets.

I have no sympathy with the habit of supplying, in a medium-sized four-manual Great, one reed, at 8' only. If it is voiced bright enough to be absorbed in the flues, it is a pretty thin tone, and if it adds body to the flues it is apt to be undigested. The color of an 8' reed (or flue) is to a certain extent absorbed by its 4' extension, and the 8' plus 4' tone is far easier to blend with bright work than the 8' alone.

It seems a good place to mention that American design has fallen down pretty hard in the past thirty years. Diapasons have been too dull, mixture work added to "brighten" them has of course stood apart from them, and the "one reed" curse, with the reed on the same wind as the flues (to make it worse put it "the flues on the same wind as the reed") one pressure for full Great, has proved a commercial cheat and has prevented getting a real full Great.

Diapasons were never intended to cope with chorus reeds in power. If they are made to attempt to do so, they cease to be Diapasons. No one has ever yet made true Diapason tone of sufficient power to do this. The real power of a Great should be reed tone. The Diapasons should tell by the accumulated power of a complete harmonic series, not by strength of individual ranks, and what one should hear is reed tone joined to weaker flue work by telling mixtures. When I hear it said that 16-8-4 reeds are not necessary in a Great section, it makes me feel a bit sad. There is no other way to get the majesty the section's name would indicate.

In the Claremont Great there are two more unison Diapasons, a Third and a Fourth. They are enclosed in the same box with the Harrison chorus. The build-up inside the box is as gradual as opening a swell-shade, and that between the box and the exterior chorus is equally satisfactory. Every one of the four unison Diapasons is a different color. Not just a little different, but quite different. The fourth is similar to an old Roosevelt Choir Diapason, while the third is something like the Schulze double. The Schulze double, by the way, will probably meet the taste of most of us, very beautifully. It is a very subtle voice. Each octave, fifteenth, and mixture is different. Different scaling and individual color. Each belongs to a chorus and each

is treated with that in mind, first, last, and all the time.

The Twelfth is structural in power, but the Quint is soft. I suppose that if one wished to be a purist the Quint would have to be made louder than it is, but the usefulness of an mp Quint is too great to permit the regulation that could be made. Added to any of the unison Diapasons or flutes it yields a quaint, archaic variety of tone that is delightful, and we desire to have it left where it is.

There are two 8' flutes in the Great. Neither of them can be heard when the Second Diapason is drawn—which is eminently as it should be. There is no logical excuse for Great organ flutes that can be heard in full Great, even slightly. The Hohlflöte is quite suave, yet is firm, while the Melodia is typically pithy and hard.

The power of the Claremont full Great is easily more than equal to an average four-manual organ on ordinary pressures, including the Solo Tuba, played full, yet it is intensely rich and interesting tone. One organist said, "I would rather have this one manual than a good sized two-manual of average make-up; you get something." He said this when only the Schulze chorus with but 8' and 4' reeds was erected. He did not hear the rest of the Great until he came again, some weeks later.

The Swell flue chorus is largely Geigen and Schulze tone. It builds up well and is complete harmonically, though partially unified. There are 16-8-8-4-2 tone, eight ranks of ff mixture work, three ranks of mp mixtures, and independent Twelfth, Fifteenth, and Seventeenth Dulcianas. There are two unison flutes. One a wood Rohrflöte, the other a harmonic Spitzflöte (Silver Flute). There are five strings. A regulation Estey Salicional and Celeste, a French Gamba and Voix Celeste, and a 4' Violina. The Gambas are especially lovely. They are quite broad, large scale, and blend beautifully with almost anything. They are the essence of reverent string tone. I get farther and farther away from keen strings every year. They can't blend and they have limited use. They are not as imitative as broader toned voices. Full Swell to Mixture, using the mutations and the soft mixture, is very satisfactory, and an effect not too frequently met with.

The Swell reeds start in where the Great Trumpets leave off. Thus the 16' Trumpet is brighter than the Great Clarion. The Horn 8' is a misnomer. Cornopean would describe it better. It is a shade darker than the Swell 16' reed, but not in any sense a closed tone. The French Trumpet is exactly what its name implies. Some of it was made in France by Cavaille-Coll. Without being too loud, it is just about as bright as a reed can be. It is not harmonic. It is perfectly clear and ringing—literally tonal incandescence. The Clarion is brighter than the Horn or the double. All four stops are on 8" wind and all are about the same

power. Their combined effect is just what one would imagine it to be. It has genuine snarl and threat, as dramatic Swell reeds should have. It has fair body, but is mostly fire. When all four and the V-VIII Mixture are drawn, and the shades tightly closed, the finest effect in the organ is obtained. The contrast between this effect and the Great Diapasons and Mixtures is something to be experienced. I call these Swell reeds real "smothered fire" with the shades closed; when they are opened there is nothing that could be called feeble about the tone that rushes out. Full Swell is not more than 75 per cent as big as full Great. It worked out as planned. But the difference in power is nothing like as pronounced as the difference in color and mood.

I hate to see a Swell loaded with extraneous matter. It is not necessary or advisable. Nearly every voice in this one is structural. The place for ear-ticklers is in the Choir or Solo, or both.

I forgot to mention the unified Oboe, which is after a scale drawn by one of England's greatest reed voicers. It is playable on the manual at 16-8-4 and is, to the writer's mind, the richest somber reed he has ever heard. The design of these pipes is unusual; the tone, while quiet and round, has an innate bloom. It is most valuable on the Pedal at 16' and is round, and extremely prompt. I also neglected to mention that the power of all the chorus reeds is well maintained in the trebles, the shallots being specially designed to take care of this. We tolerated no suggestion of weakening or turning fluty in the treble of these reeds.

While the French Trumpet has called forth the most compliments of any reed in either Great or Swell, I believe the best-voiced reed of the lot is the Swell 16' Trumpet, which is a first-class job. It has a brassy richness in its lower range that just suits my taste. If it and the Horn and Clarion are drawn, a typical fiery English Swell reed effect is obtained. Add the French Trumpet to this, or take off the Horn and add the Trumpet, and you cross the channel. The Swell then takes fire, and blazes.

The V-VIII Mixture is synthetic. It is the most powerful mixture in the organ and can be used only for fortissimo effects. It is very brilliant and will find its best use in the huge Claremont auditorium.

The Choir was mostly Mr. Clokey's idea. It is a great success. It is based mainly on Gemshorn or tapered flue tone, and is a collection of quiet colorings, built up to fairly good power with a 43-scale Schulze 8' Diapason, on 5" wind, and a moderately bright Trumpet. The Cavaille-Coll Harmonic Flute 8', the Haskell two-rank Clarabella Celeste, and the Cone Flute 4', all have character, and charm. I believe the 8' and 4' Harmonic and Cone Flutes are the two best Choir flutes of my experience; in this about forty organists concurred. There are an English Horn and a Clarinet, also a Celeste at 8 and 4. The Clarinet is noteworthy.

The Choir has its own ensemble and character. It is different from all the others, but the Schulze and the Trumpet, plus the IV Mixture, enable it to fit in with the other sections. It would never do to have it stand apart, and it does not. I would say the Choir is as powerful as the average two-manual full Great. The 16' Gemshorn appears to be the best choice of tone for the Choir double. It has more personality, and more uses than either a Dulciana or a Gedeckt. On the pedal it will from now on always take the place of a wood Lieblich 16' when I design small organs. It has the soft bloom of the Lieblich and yet has an edge and firmness that make it far more musical than any stopped flute. The 16' octave is made with the Haskell-type, patented, half-length pipes, which make it as prompt as the ordinary 8'.

The Solo has three kinds of string tone. Gamba and Celeste, with the former at 16-8-4, a two-rank Viole d'Orchestre Celeste, and a wood Cello 8'. They present three entirely different types of timbre and emotion, yet they blend well. They are all on 10" wind and constitute quite a string section.

There are three unison flutes. One is a metal Rohrflöte 8' with large pierced stoppers, and a light and quite peculiar tone; another is a slim-scaled metal Harmonic Flute, which is very imitative; and the Major Flute is a wood harmonic rank, of unique construction, which I prefer to any flute tone I have ever heard in an organ.

At this point, the reader should be privileged to look over his glasses and remark, "It seems to me I have heard that said before—in this article and out of it." I admit it. But nevertheless, this one is a wonder! It has a very creamy, "Melba-like" quality, and very great power. It is firm, solid, tone, and with all its sensational color, it is without the least taint of vulgarity. It is as far removed from Tibia tone as one could wish or imagine. For a soaring theme, it beats anything I have heard on the other side or this. It is a type of tone I should like to see adopted in American organs, because it would help educate the public away from big-scaled flutes; and it could do it easily, because every one who hears it likes it. Each of these flutes is on a different pressure. The 4' flute is derived from the metal harmonic stop. I think it is better to do this than to have two unison flutes and one 4' register, for almost the same money.

The reeds are satisfactory. One of them is unified at 16-8-4, simply to get balance for full Solo. It is on 15" wind, as is also the French Horn. But the Tuba is worth talking about. The 8' C lead block of this stop is as large as the average 16' F block one sees. It is harmonic from tenor F-sharp and is on 20" wind. It is very heavily made and the shallots are commensurate with the blocks and general scale. Its 8' C pipe has a $5\frac{1}{4}$ " bell. I have never heard a Tuba on the same wind that was more

than half as big. Starting on treble C and holding C-E-G-C, the resultants are startling. The treble C and E yield a resultant two octaves below C (tenor C) while treble C and G yield middle C. These resultant tones are as loud as an ordinary reed speaking its fundamental on average wind. The effect of such a chord made conversation difficult some distance outside the building and considerable distance away from the organ. This is a true example of the heroic proportions of a cathedral Tuba, with real clang. It is neither Tromba nor Trumpet, leaning slightly more to the latter than to the former. It is fully as musical and beautiful a voice as it is a big voice.

There is a Stentorphone which is not what its name implies. It is, rather, a very good illustration of how loud an almost true Diapason can be made and still not be forced. It is neither brilliant nor bland. Its trebles are pretty bright. The mixture is a 15-19-22—12-15-19—8-12-15 affair of special scaling. Drawing the 16-8-4 reed, the Stentorphone, Tuba, and Mixture, full Solo does not lack cohesion, and is a tremendous ensemble of pleasantly musical tone. There is great brilliance but no noise.

I suppose some would like to see more independent ranks in the Pedal. However, I should like to have those who hear it tell, without looking at the specification, how many ranks there are. We have attempted to get away from that kind of Pedal tone which is a dull boom, standing apart from the manual work, and to obtain plenty of 16' and 32' weight, with upper work that reaches up and meshes with the manuals. The 32' Bombarde is metal. The Diaphone, being a cross between flue and reed tone, with the weight of the former and some of the point of the latter, binds the flues to the reeds. This works out in practise as it promises in theory. The Bombarde has no pneumatic starters, yet can be played almost staccato. I would say that quarter-notes at a moderate tempo could be handled by it without a blur. It starts when one touches a pedal key and stops when the key is released. It has not the least suggestion of rattle. It is good solid reed tone carried down to 32', and a tune can be played on its low five notes and recognized. This remark also applies to the 32' Diapason, which is made with Haskell-type pipes.

No attempt was made to get power from this stop. It is soft enough to use with the Swell Salicional and Celeste, yet it gets under full organ and is easily felt when so added. It is also quite prompt, the ground tone entering in almost immediately. For 32' flue tone the Haskell pipe is entirely satisfactory. Such pipes require more wind than full-length pipes, but they are only 17' high, and are very solid and rigid, and prompt in speech.

The 32' stop is extended upward to 16' and 8' pitches. There is very little power break between the 32' and 16' pipes, which would not be the case

if the 32' were taken from the First Pedal Diapason. Above 16' C the tone is crisp, with plenty of point, and serves as most useful *mf* pedal stop.

The First Diapason is a full-length pipe of very large scale, CCC being 20 x 18, outside dimensions. Because of its scale it tends to be quite boomy, but aided by the Second (wood) Diapason 16', this quality is made less conspicuous, and the big tone is then easier to blend with upper work. The Diaphone also helps in this. The Bourdon, Dulciana, etc., are regulation. There are twenty-seven Pedal stops, including manual borrows—almost every kind of tone and power, up to 2' pitch.

I believe any kind of music can be played on this instrument and justice done to it. The first consideration—from the very start—was that the structural tone should be musical, and what power was developed should in no way be forced. Consequently there is extreme solidity and firmness to every section and to full organ. It is often a temptation difficult to resist, to strive for power past the capacity of the pipes. Quality at once goes by the board when this is done. But an additional loss, and an insidious one, in that it is difficult to locate and blame, is that solidity passes, as well as beauty. A trumpeter blows a forte tone. He blows harder and gets fortissimo. He comes to the point where he has the absolute maximum of power and good timbre—a compromise point and a very definite one. If he goes past this point and blows harder, his tone splits—which is another way of saying that the harmonics are no longer in phase (have their correct power relation to the fundamental) and the tone is actually not as weighty or loud as if he blew with less force. Any ensemble erected on such forced tone cannot have solidity. Many conspicuous organs are liable to this criticism. Builders should watch this point. The Diapasons are, of course, the injured parties. A Diapason has to be made a certain way if power is to be had without strain. There is no use trying to get away with antiquated pipe-making or unscientific pipe-formation and trying to make up by excessive blowing for the naturally powerful tone a correctly-made pipe can yield.

In the Claremont organ the Diapasons are correctly made and correctly voiced. Every one of them in the entire organ could have its pressure raised from one to two inches and still speak without overblowing, and yet I venture that they are the most powerful Diapasons ever heard in this country, on the wind given them and to which they are tuned. Compared, directly on the same chests, they exceed pipes three scales larger, by about 75% volume, when the larger pipes are made and voiced on the old system. The tone quality is greatly improved in the process, and the Claremont Diapasons speak out in no uncertain manner. It is a robust, virile quality that tells. I compared a 42-scale Schulze modified-type pipe, with the same note of a

double-languid Diapason voiced by Vincent Willis on 10" wind. The Schulze stood on 5" wind. The double-languid was bigger, but I should estimate that the Schulze was 60% as big.

We find that it is impracticable to try for this quality of tone with larger than a 41-scale pipe, or on more than 5" wind.

As I think over the stoplist of this organ, in all the Great and Swell there is not one mediocre stop. There is no explanation offered for this except careful, patient thinking and planning, and magnificent cooperation from the voicers. There is not a single accident in the job. It is all deliberate.

I imagine there are those who will wince a bit when they hear full organ for the first time, but I believe that when they go back to usual volumes

and usual ensembles, and then return to Claremont, they will like it better and better. We surely hope so. For we have gone into this work not with the idea of making merely a good organ, but with the determination to make an outstanding one, and we have done our best. It is an experiment in tastes. It is not an experiment in anything else. Every feature in it is recognized as a classic, in the country from which the idea was secured, and has been for seventy-five years past. With the exception of the two-chorus idea on the Great, and Mr. Clokey's choir scheme, there is not an original thing in it, and no claim is made that there is. It is simply an attempt to amalgamate the best points of design in all countries into one homogeneous ensemble; an attempt to set American organ building one step farther ahead.



MR. JOHN CONNELL

The famous Municipal Organist of Johannesburg, South Africa, who is now in England on tour, with the cooperation of the Government of South Africa, and who arrives in America early in November for a friendly visit to Canada and the States in an acquaintance-tour of our organs and organists.