

The King OF INSTRUMENTS FOR The King OF KINGS

(PART I)

DOUGLAS L. RAFTER

The fine arts were given to mankind by God to be used in His service and for His glory. We must remember that they are the means to an end, and as great composers, poets, painters, authors and sculptors have found in Christ their highest inspiration and joy, so must our religious emotions and aspirations find expression in our worship in vocal and instrumental music that is indeed consecrated and worthy.

Music is at once the most emotional and the most social of the arts. A piece of music will produce in the listener not just a single impression or emotion, but many, as compared to a painting. There is music for practically every occasion in human life, and every nation and tribe, regardless of how civilized or primitive it may be, has its music.

Christianity is and has been a singing faith. Music has a definite place in the plan of God and in the life of His people.

In the Scriptures are literally hundreds of references to music, in addition to the first hymnal, the Book of Psalms. Three-fourths of the books of the Bible refer to music, including the first and last books—Genesis and Revelation.

And it is indeed significant that in the music of Christianity alone, compared with the music of other religions of the world, do we find the joy, triumph and victory of the major key. The music of all other faiths is either in the minor key or else based on a tonal system which is far more closely allied with the minor tonality than with the major. Equally significant is the fact that in the realm of secular music, only in those nations whose history has been influenced and shaped by Christianity do we find the positiveness of the major key as a definite national musical idiom.

It is interesting to note here that all the musical instruments which are men-

tioned in the Bible group themselves into three sections or families of tone—string, wind and percussion—which are the same tonal divisions that characterize the modern symphonic orchestra.

Supreme among all instruments in the worship of God is the pipe-organ. Alone among instruments it can give utterance in music to all the varied moods and emotions of worship, and voice the longings and religious aspirations of the human soul. Because it has always been identified first and foremost with the church and the authority of Holy Scripture, does it not seem that it has the approval of Almighty God for His worship?

Although the King of Instruments has been used in the realms of concert (and it has no rival as a concert instrument) and entertainment, the highest and noblest function of the most beautiful and majestic instrument developed by man will always be found in the praise and worship of God.

When you look upon the keydesk of a pipe-organ, which is called the "console," only a small part of the organ itself can be seen. It is not only the largest but also the most complicated of all instruments. Above and beyond the rows of keys are symmetrical rows of pipes, some of which produce tone, others of which are for appearance only. The organ is built to be a part of the building in which

it is placed, with separate chambers or "rooms," and the pipes with the rest of the mechanism are hidden behind the walls of these "rooms."

There are literally thousands of pipes in even a moderately sized organ. Those which sound the heavy bass tones are as large as good-sized tree trunks, while the pipes which make the highest tones are smaller than a lead pencil. These pipes are rarely seen except by the technician who is entrusted with the task of keeping the organ in good tune and playing condition.

All the pipes are arranged in groups according to tone quality; these groups are known as "ranks" of pipes, each rank being controlled by a small draw-knob known as a "stop," because by it an organist can "stop" the tone of any rank of pipes at will.

Each row of keys is called a "manual," because it is played by the hands (from the Latin *manus*—meaning "hand"). In addition to manipulating the manuals and the different stops, the organist plays another keyboard with his feet. This keyboard is known as the "pedal."

In our next article on this subject, we shall trace the fascinating and absorbing history of the "most loved and least understood" of instruments—the organ. Our starting point will be Genesis 4:21-

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(PART II)

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The first recorded reference to the organ is to be found in Genesis 4:21, written about 3875 B.C., and refers to the organ of Jubal, which we suppose to have been a shepherd's pipe or Pandean pipes. Jubal is identified with the invention of the harp and the organ, or stringed and wind instruments. This same relationship of musical instruments also appears in the Book of Job and the Psalms in which the trumpet, harp (of two distinct varieties), timbrel (or tambourine), cymbal and organ are referred to. It is interesting to note that the Hebrew word in Genesis 4:21 refers distinctly to a shepherd's or Pan's pipes, which was a mouth organ having from seven to nine notes, made of reeds joined side by side in gradually decreasing lengths. The player would cover the pipes which he did not want to sound with his fingers, thus "stopping" these notes. This is the principle upon which the "stops" of a modern organ also function. The Greek word from which our word "organ" is derived, however, denotes in contrast an instrument of any kind.

After the Pandean pipes, there developed in time an instrument faintly resembling the bagpipes, in which groups of reed pipes were mounted on a small wind-chest, and the air for supplying these pipes was blown by the lungs of the performer.

The inevitable step which followed was the introduction of the bellows for storing and compressing of air.

In the second century before Christ,

Ctesibius of Alexandria, who is said to have been the first organist, invented the water-power organ, or the hydraulus. The pipes of this instrument were partly of bronze and partly of reed, and varied in number from one to eight rows. Pressure of water performed the same function that is accomplished in the modern organ by a weight. An hydraulic organ, with pipes of varying length and apparently about ten feet high, was shown on a Roman coin about A.D. 1.

Another important development was the introduction of the "slider"—a piece of wood perforated with holes, which could be drawn backward and forward to stop the sound of the unwanted pipes, leaving the desired pipe "unstopped" and therefore ready to play.

In the ninth century of our era, during the reign of Charlemagne, an hydraulic organ on the Greek model was erected in the church at Aquisgrana, the modern Aix-la-Chapelle.

It is interesting to note the ancient method of blowing which was used in these early organs. On each bellows was affixed a wooden shoe; the men who worked them held on to a horizontal bar, and inserting their feet into a pair of these shoes, alternately raised one and depressed the other.

Until the middle of the fifth century, the organ was used in places of amusement exclusively. It is said to have been applied to religious services in churches in Spain at about this time; in Rome about 658 A.D., and sometime in the eighth



century in France. It was introduced into England during the ninth century, and before the close of this century the building of organs was an established industry.

About 951, the abbey of Malmesbury and the cathedral of Winchester in England were equipped with organs. About 970 an organ was erected by Saint Dunstan in Abington Abbey. At this time and for two centuries afterward the compass was small, being usually from nine to eleven notes. The keys were from four to six inches wide and were struck by the clenched fist—the organist, therefore, was known as the "organ-beater."

The organ of Winchester, probably erected there by Saint Dunstan, possessed twenty-six pairs of bellows, four hundred pipes and it required seventy men to work it. This organ caused much comment by medieval writers.

From about 1500 A.D. the organ began to bear some similarity to the instrument as we know it today. The invention of the pedal is credited to Bernhard, a German organist, at about 1475.

The organ of Nürnberg had pipes from sixteen to thirty-two feet long in 1468 A.D., while in 1596 the organ of Breslau possessed most of the stops known at present.

We should mention here the "Regal," or "portative," and the "positive" organs. The former, as is implied by its name, was a portable organ having one row of pipes sounding the treble notes only, and

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was carried in processions by one person and played by another, and was used mainly to assist the voice and play the melody of the plain song. In contrast, the "positive" was fixed in position, equipped with a keyboard of full compass and was played by both hands. It was located before the great organ in churches, these two making a single instrument. This is considered to be the origin of what is now the "choir" organ, or third manual, on present day instruments.

Up to the fifteenth century, organs were chiefly constructed by the monks, but beginning with this period organ builders by profession are to be found in both England and on the continent.

In 1712 the expression or "swell" pedal was invented by Abraham Jordan to give variety to the tone of the organ. During the sixteenth century German builders introduced the "register" and the stopped pipe, and the keyboard was extended to four octaves.

From the sixteenth to the nineteenth centuries, there were no great improvements in organ building except gradual improvement in the pipe work.

Our final article will deal with the final stages in the development of the organ from one of the most ancient of musical instruments to the pipe-organ as we know it today, the most magnificent of all instruments, containing in its vast resources almost all the panoply of color of all other instruments.

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(PART III)

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Our previous articles have traced the development of the pipe organ from its first recorded reference in Genesis 4:21, and existing then as a shepherd's or Pandean pipes, through its gradual development during the many centuries that followed, into the superb tonal and mechanical wonder that we know today.

The twentieth century organ is a tremendously magnified, mechanized and electrified adaptation of the pipes of Pan, which were a set of seven to nine reeds joined in gradually decreasing lengths. In the organ of today we also find pipes of varied length and pitch, but multiplied by many hundreds in even a moderately sized instrument, and blown not by the lungs of the player but by mechanical means. When an organist depresses the key of a modern organ, he sends through the pipes a rush of air, generated and controlled by electricity, which causes these pipes to sound. Sixty, seventy, or even more pipes may sound simultaneously, emitting the same note in differing tone colors.

The organist of today has from one to seven keyboards, which are known as manuals, under his fingers. These man-

uals enable him to produce musical effects of solo and accompaniment, loud and soft, swelling and diminishing, and contrasting tone colors. In addition, he has a set of pedals played by the feet which produce the rich bass sounds of the organ, and additional pedal controls which govern the swell and build-up of tone and also the combinations of stops which he uses.

There are two factors with regard to tone that establish the organ as truly the "King of Instruments." First, the organ possesses a panoply or spectrum of tone color which includes the tonal qualities or "timbre" of all orchestral instruments. Second, the tonal range of the organ is much greater than that of any other instrument. It can sound from two octaves below the normal range of other instruments to a pitch level above their highest. Then, too, the organ is the only instrument which in itself can rival in richness and volume of sound the tone of a symphony orchestra. This fact becomes evident when organ and orchestra are played together in a concerto.

Each of us as human beings must have a heart, brain and lungs all functioning

together normally to live healthfully. This is paralleled in the organ which has parts which we can describe as its heart, brain and lungs—all of which must function together if the organ is to sound! The heart of the organ, furnishing its vital spark, is the electric generator or motor which is usually located in the basement of the building far below the other sections of the organ. The brain of the instrument is the console or key-desk, which contains the many nerve-centers, or wiring and contacts which lead and are connected to the speaking portions of the organ. The organ's lungs, containing its breath, are the chests which contain air under pressure, and are located directly beneath the speaking pipes, which we may also describe as the "vocal cords" of the organ. Without the generator, console, chests and pipes all working together, the organ simply could not sound!

In the accompanying sketch of a typical three-manual organ console, we can see the means by which an organist controls his instrument. Directly below the music-rack is a row of tilting tablets operating the couplers, which enable the tone colors of one manual to be also playable on the other manuals, or on the pedals. Below the couplers are the three-manuals, or keyboards, and below each manual is a row of combination pistons, or thumb buttons, each of which will furnish a differing tonal combination on its manual. On either side we see the rows of stop-knobs which are drawn by the or-

ganist either manually, or automatically, by means of the combination pistons. These draw-knobs are the tonal controls of the organ. Then, below, looking like an oversize piano keyboard, we see the pedal clavier, which is played by both feet and sounds the sonorous bass tones of the organ. Directly above the pedal keyboard we see the swell expression pedals, which control the swelling and diminishing of sound. There is also a row of toe-pistons, duplicating the manual thumb-pistons.

In the church service, the organ performs a triple function by leading congregational singing, by accompanying vocal music, and by furnishing solo organ music. And because it fulfills its noblest and highest function when used to the glory of God, it is the ideal instrument of the church. The following quotation, written many years ago, verifies this truth:

"The organ is in truth the grandest, the most daring, the most magnificent of all instruments invented by human genius. It is a whole orchestra in itself. It can express anything in response to a skilled touch. Surely it is, in some sort, a pedestal on which the soul poises for a flight forth into space, essaying on her course to draw picture after picture in an endless series, to paint human life, to cross the Infinite that separates Heaven from Earth . . . Out of the dim daylight, out of the dim silence broken by the chanting of the choir in response to the thunder of the organ, a veil is woven for God, and the brightness of His attributes shines through it."

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