

# Birds, Bells, Drums, and More in Historical Italian Organs, Part 1

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It is a general belief that the stop composition of historical Italian organs is rather standardized, based on a series of principal-scaled stops forming the *Ripieno*, and enriched by one or two flutes. In many cases and especially for certain historical periods, this is correct assumption; however, exceptions abound.

Organbuilding has been greatly influenced by the peculiar Italian geographical configuration, by its very interesting history, and its political fragmentation into a number of states, to the point that even a small distance between two cities or two areas often exhibited marked differences in organbuilding practices. A notable example of this is the coexistence, around the middle of the 18th century, of two organbuilding schools, featuring drastic differences in the tonal character of their instruments: one in the city of Venice and the other in the Lake Garda territory, two areas that are geographically very close.

The Italian organ did not crystallize its tonal structure, as many believe. Quite to the contrary, it remained open to influences coming from across the Alps, incorporating new stops, mechanical features or accessories, and special effects that ended up becoming common even in smaller instruments. A notable aspect of this is the presence of accessories and special effects. The use of the tremulant, of ingenious systems imitating birds (sometimes of different species) or of singing insects, the rolling of drums, and the sound of shepherds' bagpipes is mentioned in a number of texts, not necessarily connected to organ music. Here are a few examples:

The organs built by Vincenzo the Flemish, the first located in the Cathedral of Orvieto played by Gio. Pizzoni, the second in S. Pietro at Gubbio and played by Grisostomo Rubiconi; they both deserve being greatly praised, and in particular the one in S. Pietro, which in addition to 12 continued organ stops [meaning Principal-scaled stops extended for the entire keyboard's compass], is enriched by the presence of an equal number of stops imitating stopped and open Flutes . . . Drums, Tremulant, and Nightingales . . .<sup>1</sup>

. . . there is a precious and rare organ, comprising 2,800 pipes, with 40 stops, the sound of which imitates that of Trompettes, Timpani, the song of birds . . .<sup>2</sup>

. . . In the organ of S. Giustina in Padova one hears the Trompette, and the Viola, the Violin, and also the song of various birds . . .<sup>3</sup>

The purpose of this article is to present the history of such effects and to provide suggestions for their use in musical performances, on the basis of documents, books written by scholars and composers of organ music, and also by notations in musical manuscripts (few in earlier times, but which became more and more abundant and specific later on). A further source is the *Tabelle di Registrazione* (registration charts) that a small number of organbuilders wrote and left with their instruments, as instruction manuals to prevent registration mistakes or to suggest the best ways to utilize their instruments.

While a wide variety of sources has been consulted, it is, however, almost inevitable to have left out some of them. Italy is extremely rich in this respect, with a large number of organbuilding schools and the variety of instruments that still exist or that existed in the past, but for which we still have documentation. Many documents (contracts, descriptions) are certainly yet to be discovered in the archives of churches and monasteries.

The starting point that I have chosen for this research is the first part of the sixteenth century. At that time, the Re-

naissance—one of the most extraordinary and rich periods in the history of humankind—was flourishing in Italy. The splitting of the territory into many different states ruled by marquises, dukes, princes, and kings—all very rich and prosperous, all competing with each other to obtain the work of the most famous artisans and artists—produced an artistic level that is among the highest in all of art history. The names of the painters, sculptors, and artists in general that one would have then encountered in the squares, churches, and palaces throughout Italy are the same names that we encounter today in the most famous museums. It is obvious that such intense artistic and economic activity would attract artists and artisans from other European countries. What was happening in the figurative arts had its parallel in music as well. The names of Costanzo Festa, Giovanni Pierluigi da Palestrina, and Claudio Merulo were mixed with those of Adrian Willaert, Jakob Arcadelt, and Orlando di Lasso, to mention just a few, the latter all coming from northern Europe.

In organbuilding, the work within Italy of artisans coming from across the Alps helped enrich the tonal spectrum of the Italian organ, and influenced the local organbuilding schools. The foreign organbuilders brought with them from their original countries the effects and accessories, but also different pipe types, such as stopped pipes, for example, and these new features and ideas were readily adopted by local organbuilders.

As we will see, during that period the new special effects (tremulant, rolling drum, and nightingale) were systematically introduced from the north to the south of Italy, even to already-existing instruments.

## The Tremulant

The introduction of the tremulant (*tremolo* in Italian, also referred to in the past as *tremolante*, *tremolare*, *tremolli*) in an organ requires a rather simple mechanism. Two types were used in the Renaissance and in successive centuries: the open wind tremulant (also called lost wind tremulant) and the closed wind tremulant.

In the first case, a pallet, to which a spring or a weight is applied, is located externally over an opening in the windline or in the windchest. When the pallet is released and made free to move, the pressure inside the wind system will try to push the pallet open, while the spring or weight installed over the pallet will react by applying a contrasting force. The result is an oscillation of the pallet, which determines a periodic release of wind out of the system and a resulting periodic pressure drop, which in turn creates the undulating effect in the sound. This was the most common system during the Renaissance.

In the second case (the closed wind system), the pallet is installed inside the windline to stop the wind flow. When the tremulant is not active, the pallet is pulled up in the open position and the wind can flow without restrictions. The device is activated by releasing the pallet, which, by falling down in the closed position, tends to prevent the wind from flowing. This creates a periodic oscillation of the pallet, pushed open by the wind rushing through, but the pallet being heavy enough to try to return itself to the closed position by gravity. The resulting wind instability creates the undulating effect. This system is very close, if not identical, to the one described a few centuries later as *Tremblant doux* by Dom Bedos.<sup>4</sup>

The two types of tremulant produce two different effects on the sound of the instrument: The “open wind” system has an oscillating frequency that is independent of the number of notes played

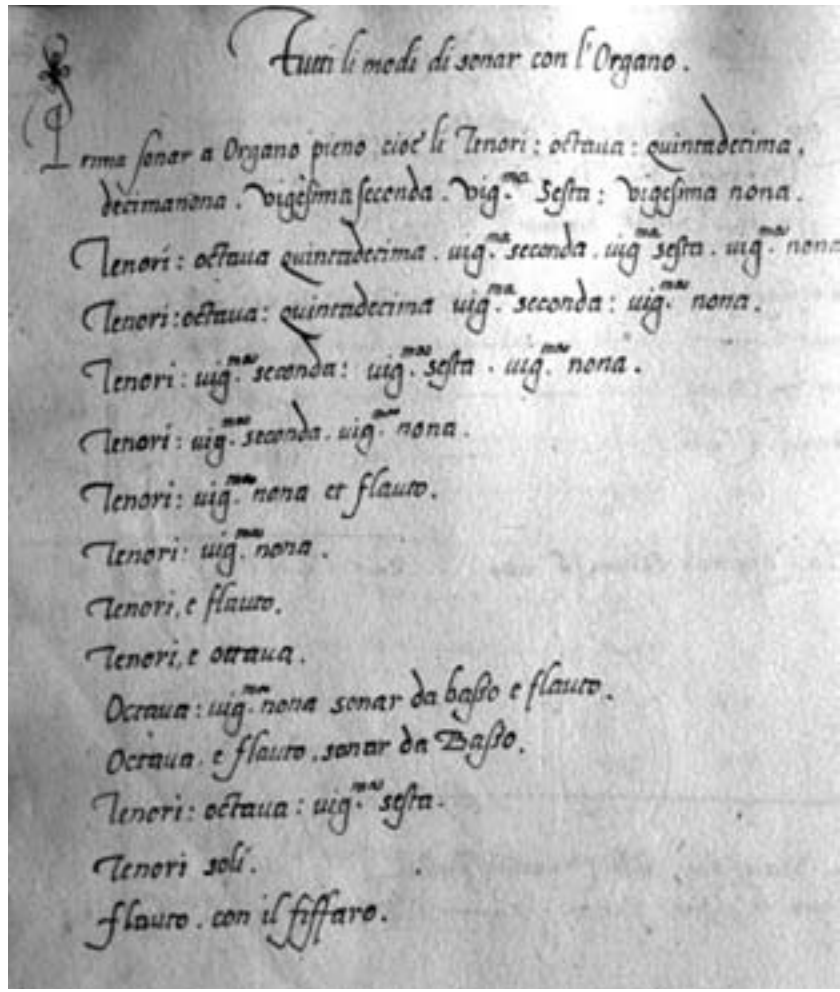


Photo 1. Valvasone, Duomo del SS. Corpo di Cristo: registration chart probably suggested by Vincenzo Colombi, written around 1558, entitled *Tutti li modi di sonar con l'Organo* (All the methods of playing the organ). The last line mentions the registration “flauto con il fiffaro,” where the term *fiffaro* indicates the tremulant (L. Stella archives).

by the organist (or, in other words, by the wind absorption), while the “closed” system is effective only when a few notes are played, but loses its speed and depth as the wind consumption is increased by pulling more stops or by playing big chords, to the point of losing its effect completely.

During the restoration of the 1519 organ built by Giovanni Piffero, located in the Palazzo Pubblico at Siena, one of the oldest examples of the introduction of an open wind tremulant in an Italian organ was found.<sup>5</sup> Starting from this date, evidence of the manufacturing of organs with tremulants, or of their additions to existing instruments, becomes more and more frequent in instruments located throughout the Italian peninsula.

In 1561, Massimiliano da Udine included the tremulant in the contract for the organ for the Sisters of San Daniele in Venice, an instrument that no longer exists.<sup>6</sup> During the same year, in Sicily, Silvestro Colliga included a “Flute in the German style with its Tremulant” for the organ of S. Antonio Abate in Palermo.<sup>7</sup>

In 1570, the Venetian organbuilders Emiliano and Giulio Zacchino were contracted to restore the new organ in the Basilica of S. Antonio in Padova, and, among other things, to update the *fiffari* (meaning the tremulant) to modern practices.<sup>8</sup> In 1577, the brother organbuilders Vittore and Federico Federici restored the organ in the Cathedral of Feltre, and among the repairs needed, they included a modification of the tremulant to make it reproduce the effect of the *fiffaro*.<sup>9</sup>

These last two citations are particularly important to help us understand one of the most frequent uses of the tremulant in musical performances.

It is first of all necessary to note that in Italy in the 16th and 17th centuries, the term *fiffara* or *fiffaro* was used with reference to the transverse flute (also then called *traversa* or *fiffaro traverso*).<sup>10</sup>

A further name for the same instrument was *Flauto alemanno* or *Flauto alla todisca* (or *tudisca*), meaning flute in the German style.<sup>11</sup> One of the most valued characteristics of such stops was the vibrato: Martin Agricola, in 1545, in the fourth edition of his work *Musica instrumentalis deudsch*, calls the transverse flutes *Schweitzer Pfeiffen*, and writes that it is good practice to use them with oscillating breath.<sup>12</sup>

One of the first sources on the use of the tremulant is the registration chart written or dictated, probably in 1558, by organbuilder Vincenzo Colombi for the organ in Valvasone, where the use of the “flauto along with the fiffaro”<sup>13</sup> is suggested. (Photo 1) The tremulant is there called *fiffaro*, thus exchanging the end result (the imitation of the transverse flute) with the means to obtain it.

As mentioned above, Silvestro Colliga in 1561 promised to manufacture a *Flauto alla todisca* with its tremulant. Similarly, in other contracts for Sicilian organs, in almost every case where flutes with stopped pipes are mentioned—to imitate the flutes *alla todisca*, or of German style—the tremulant appears as well.<sup>14</sup> It is therefore clear that it was rather common practice among organists to imitate the transverse flute by combining the flute stop (whether made of stopped pipes or not) with the tremulant. However, we need to wait until the beginning of 1600 in order to find texts of wider diffusion, containing specific indications on the use of tremulants in pipe organs.

In 1608, Costanzo Antegnati wrote *L'arte organica*. In the portion of this treatise that deals with registration practices, he explains that the tremulant can be used with the Principale alone, but only when playing slowly and without diminutions, in order to accompany motets with few voices or to play softly.<sup>15</sup> Later on, Antegnati provides another indication on the use of the tremulant, stating that

it can be used with the Ottava and the Flauto in Ottava, or (proposing the registration suggested by Vincenzo Colombi 50 years before) even with the Flauto in Ottava alone, again specifying that it is necessary to avoid fast playing or rapid phrasing. He had previously noted that those who play rapidly with the use of the tremulant show bad taste<sup>16</sup> because such an accessory confuses the sound when notes are played at a fast pace.

In 1610, Claudio Monteverdi, in his music for the *Vespers*,<sup>17</sup> expressly requests for the organ—which provides the basso continuo—the registration of Principale and tremulant,<sup>18</sup> from the end of the 11th to the 19th measure of Versus 3 “[*quia respexit*] *humilitatem ancillae suae*” of the *II Magnificat a sei voci*. It is to be noted that the same verset in the *primo Magnificat* had been orchestrated with two real *fiffare* (then two trombones and subsequently two blockflutes),<sup>19</sup> while the organ was accompanying with the Principale alone: once again, it is quite evident that the tremulant is used to imitate the “*affetto*” or the sensation created by the transverse flutes.

In 1622, Girolamo Diruta explains the use of the tremulant in the course of his dialogue *Il Transilvano*,<sup>20</sup> saying that the second tone makes the harmony melancholy, and it requires the Principale (by itself) with the tremulant, while the fourth tone makes it *lamentevole* (mournful), *mesta* (sad) and *dogliosa* (grievous), and this effect is obtained by the Principale with the tremulant or a Flute stop played in the appropriate range of the keyboard and with the correct melodic behavior. As one can see, Diruta narrows down, or redefines, the use of the tremulant, by associating it to the basic tone (second or fourth) of the music being played, and to the character that such tone gives to the pieces (melancholy, mournful, sad, grievous).

Toward the end of the 16th century, with the advent of the Voce Umana stop<sup>21</sup> (a principal-scaled rank of pipes beating with the Principale), once again called *Fiffaro*, the tremulant gradually disappeared from the tonal compositions of



**Photo 2. A four-pipe Uccelliera (Nightingale), in its more common form.**

new instruments. The sound of the new stop, which played in the treble section of the keyboard, was better, richer, and more interesting than the simple mechanical oscillation of sound. However, in 1718 it is possible to find yet another citation on the use of the tremulant: it can be found in the registration table of the organ built by W. Hermans in 1650 for the Cathedral of Como. It includes a complete description of the instrument and quite a few suggestions on the use of the stops. At #45 of the list in the chart, one reads “*Voce Umana, Principale e Tremolo*,” where the Voce Umana is in this case a reed stop (a *Vox Humana*). Later on, in the paragraph entitled “For the music,” it is explained that such a Voce Umana can be used with the tremulant in the bass portion of the keyboard, while the Principale and Tromba are played in the treble section, or the contrary (left hand with the Principale and Tromba, right hand with Voce Umana and tremulant). Such combinations are made possible by the presence of two manuals. As a conclusion for the long series of registration suggestions, the registration table states that “the tremulant can be used at the discretion [of the organist], when one, two or at most three stops are played.”<sup>22</sup>



**Photo 3. The beautifully decorated organ by Nicola Abbate, 1780, in the church of SS. Annunziata at Venafro (Isernia); restoration by Fratelli Ruffatti, 2003. The instrument contains a number of special effects and controls, among which is a pair of rare Nightingales.**

### The Nightingale

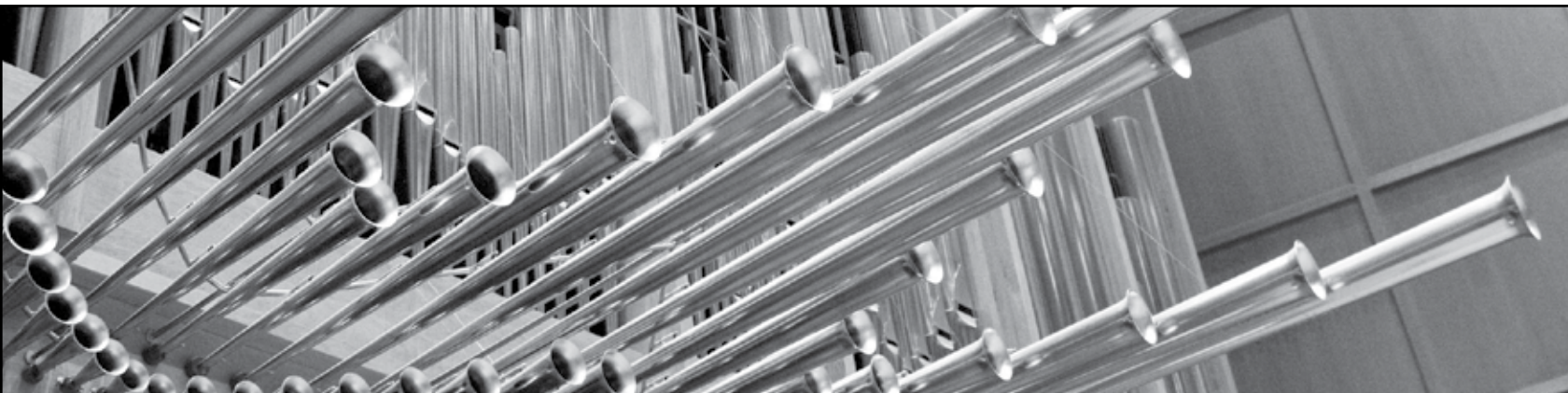
The Nightingale—literally translated in Italian as *Usignoli*, but normally referred to with the more generic term *Uccelliera* (song of birds) and sometimes also called, in various linguistic variants, *stortis philomelis*,<sup>23</sup> *ocellj*, *risignoli*,<sup>24</sup> *rosignoli*, *usignoli*, *passeri* (sparrows), *canarini* (canaries)—is uniform in its construction features: it consists of a series of two or more pipes mounted upside down, with the ends of their resonators submerged in water. (Photos 2, 3 and 4) When the pipes play, the wind coming out of the resonators sets the water in motion, and this creates an effect on the sound of the pipes that very realistically simulates that of singing birds.

Traces of the presence of nightingales even in important instruments are numerous. Starting from just before the

mid-1500s, they continue until 1880 without interruption all over the Italian territory from north to south, as evidence that such effects were held in high esteem by the organbuilders who manufactured them, and by their clients.

One of the first traces of such a device is connected to Vincenzo Beltrami, who came from the Burgundy region of France, and who in 1544 signed a contract for a new organ for the church of San Nicola at Tortoreto (Teramo), in the Marche region, mentioning the Nightingale among the other stops.<sup>25</sup>

In 1569, Lodovico Arnoldo, a Flemish organbuilder, restored the organ of the Pieve di S. Maria in Gemona, adding, among other things, the Nightingale, as noted in the letter of payment. One could mention a number of other locations and organbuilders, because



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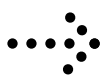
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Photo 4. The two *Uccelliere* (Nightingales) in the Venafrò organ. Their round shape is rare and unusual. The one on the left is original. A second, identical unit (right) was missing, and had to be rebuilt during the restoration of the instrument.

As stated above, almost everywhere already-existing or brand-new organs were equipped with such a device. Its installation is very simple: a hole is made in a windline, or in an accessible location at the windchest, and a stop control is installed to allow the organist to turn the effect on and off at will by opening or closing the wind. Often the Nightingale is located at the foot of the façade pipes, and in some cases several of them can be found within one instrument, one for each section of the façade when the same is divided, as is often the case in Renaissance-style instruments. In this case, the series of nightingales is operated by a slider similar to that of the other stops. Once the slider is activated, each nightingale unit starts to operate as soon as one or more façade pipes in the corresponding section is played. The end result, when playing a scale on the façade pipes, is that of birds singing at random from one side to the other of the instrument.<sup>27</sup>

In 1797, Pietro Agati built the organ restored in 1990 by Fratelli Ruffatti) at the Church of S. Michele Arcangelo in Vignole, in Tuscany (Photo 5), where the *Uccignoli* can be found. In later periods such devices appear mostly in organs built in central and southern Italy. For example, in 1881–1882 the Serassi brothers of Bergamo, in cooperation with Casimiro Allieri, built their largest instrument ever for the Cathedral of San Giorgio in Ragusa Ibla (restored in 1987 by Fratelli Ruffatti). Among the special effects, still in this late stage in history can be found a Nightingale, in this case a very large one, consisting of 12 pipes! It must have been specially requested by the customer, since the Serassi brothers had stopped manufacturing such devices by that time.

On the suggested use of the Nightingale in repertoire, little information can be found until the beginning of 1600; it is a fact, however, that it was widely used, since we have evidence of its presence in pipe organs from the middle of the 16th century on.

One of the first sources that indicates its use can be found in the registration

chart for the organ in Orvieto built by Vincenzo Fulgenzi.<sup>27</sup> It was written by Vittore Federici from Belluno (mentioned above for his work in the Cathedral of Feltre). In 1602 he was hired to perform some maintenance work on the instrument and he was asked to give his suggestions as to its use. He indicated that the use of the Nightingale was appropriate in the “Battles,” to be used in conjunction with the Contrabassi (24’), the Ottava di Contrabassi (12’), the Tromboni, the Flauto in Quintadecima (6’), all of the manual stops, and Cuckoo.<sup>29</sup> Another suggestion concerning the use of the *Uccelliere* (birdsong) can be found in the registration chart for the Willem Hermans organ, built in Rome in 1666 for the church of S. Apollinare, which contains the suggestion to register the combination “*Flauto in 8a. Rossignolli*.” In the same chart, which most likely Hermans himself wrote, we also find a rather generic suggestion as to the use of the effects in that organ: that “The tremulant, drums and nightingales be used at the discretion of the organist,”<sup>30</sup> leaving total freedom to the organist as to their use in music.

A further indication, this time in northern Italy, can be found in the organ of the Cathedral of Como, built in 1650 by the same Hermans. In the already mentioned chart, under number 24 we find the combination: “Flauto in Ottava, Drum, Nightingales.”<sup>31</sup>

Around the turn of the 19th century, we find a similar indication for the use of the nightingales, this time without the drum, in the registration chart of the Tronci family, organbuilders active in Tuscany, who proposed the use of the Flute and the Nightingale for the “andante movements.”<sup>32</sup>

A much more varied and interesting use can be found in the music of Giuseppe Gherardeschi (1759–1824), a Pistoia-born musician from whom a large number of compositions survive, expressly composed for use on the late 18th–early 19th century Tuscan organ. Many of these works (most still unpublished) include extremely detailed reg-



Photo 5. Church of S. Michele Arcangelo, Vignole (Pistoia); organ by Pietro Giustina and Giosuè Agati, 1797, restored by Fratelli Ruffatti in 1990. Tuscan organs of this period normally incorporated a number of special effects for the performance of opera-style music.

istration notations; below are a few that mention the use of the Nightingale. In the *Messa per Organo in Elafà, per uso del signor Francesco Baldansi di Prato, 1813*, in the first verset for the Gloria the nightingales are called for twice.<sup>33</sup>

In the *Sonata per Organo a guisa di banda militare che suona una Marcia*, one finds the following requested registration:<sup>34</sup> Reed stops, Flauto in Selva, and [Flauto] in 8a, Flautino Basso and Timpani (rolling drum) played in the loud passages but staccato, and nightingales where expressly indicated. One of the latest indications for the use of this effect can be found in the *Pastorale*, dated 1850, by another composer of the Gherardeschi family, Luigi (1791–1871), who, in two instances, suggests adding the nightingales to the initial registration, which comprises *Principali, Ottava soprana, Flauti e Trombe*.<sup>35</sup>

Judging from the indications that have been found, it seems prudent to conclude that the tendency was to use the Nightingale when lower pitch registers are used in contrast with higher pitched ones, to introduce it in the *andante* movements and in compositions such as the *pastorali*, and therefore in conjunction with softer stops, but also as a reinforcement in combinations using reeds and color stops.

Other effects were made to imitate the song of different species of birds: the “Nightingales, Cricket first, Cricket second, Titmouse birds and Sparrows” of Giuseppe Bonatti (1716) at San Tommaso Cantuariense in Verona,<sup>36</sup> or the “Canaries and Cuckoo birds” in a specification by Giovan Battista Piaggia for an organ in the Cathedral of Bolzano (1752).<sup>37</sup> The use of such effects obviously follows the same indications given for the nightingales.

#### The Rolling Drum (or Thunder)

In examining documents that refer to modifications of existing instruments, or

contracts for the manufacturing of new organs, the rolling drum (in Italian *Tamburo*, but also called *timpano*, *gran timpano*, *timballone*, *rollante*, *rullo*, *tamburo a ruolo*, *tuono*, *tremolo*) is very often found in conjunction with the tremulant and the nightingales. It seems, in fact, that in most cases the three effects were all installed together.

As we have seen for the tremulant and the nightingales, the installation of the drum was also rather simple, even in already-existing instruments. In the 16th and 17th centuries, it normally consisted of a couple of pipes of 6 or 8 feet especially dedicated to this effect. They played together at close but not identical frequencies, thus producing a prominent beat that resembled rolling drums. In later years, when pedal stops began to appear in pipe organs,<sup>38</sup> in order to avoid the construction of such additional pipes and thus save space and money, a number of pipes of the *Contrabasso* were made to play together by means of a special mechanism, producing a very realistic effect.

In some 19th-century organs of the Lombard school, in which the drum sound is produced by 3, 4, or 6 dedicated pipes, it is even possible to increase the intensity of sound: by pressing the pedal half-way down, only a few pipes will play, thus producing the “normal” rolling drum; pressing the pedal all the way down will cause all pipes to play at once, thus producing the effect called *Gran Timpano* or thunder.<sup>39</sup> In the 19th century it is possible to find a variety of “drums” within the same instrument, obtained through different combinations of 16’ and 8’ pipes playing together.<sup>40</sup>

One of the first traces of a rolling drum in an organ dates from 1543, when Giovanni Paolo Contini used it in the organ at the church of San Francesco in Montepulciano;<sup>41</sup> subsequent traces abound and can be found all over the Italian peninsula, thus giving us an idea of how widespread these effects were. It is possible to state that between 1550 and the second half of the 1800s, drum stops (*Rollante, Timpano, Thunder, Earthquake*)<sup>42</sup> were almost always present in organs built in Italy, just like the *Principale* or the *Flute* stops.

The first suggestions for using the drum come from Vittore Federici for the organ in Orvieto: he describes a registration to play a *battaglia* with the drum in the German style,<sup>43</sup> which we have already mentioned under the sections dealing with the nightingales. The association of the drum with pieces describing battles is obvious, a type of performance which, according to Adriano Banchieri, was “commonly allowed on Easter Sunday . . .” with reference to the verses “*Mors et vita duello conflixere mirando*” (“Death and life have struggled”) of the Gregorian sequence *Victimae paschali laudes*.<sup>44</sup>

Willem Hermans, both in the instructions for the use of the organ in the Como Cathedral, built in 1650, and for the organ in the German College in Rome (1666), suggests “*Flauto in 12a Tamburrij*,”<sup>45</sup> the resulting sound being a beautiful imitation of a military flute or



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the weak beats of the closing measures of the piece.

Consequently, an orchestral use of this effect should be established, and, following an accurate analysis of the musical piece to be played, it is appropriate to use it, without going overboard, in a wider spectrum of situations, beyond *legro* movements or marches. It must be emphasized that this device was commonly found throughout Italy and that consequently it would be a good practice to imagine a broader and more articulate use of the drum when performing Italian organ literature.

It is also interesting to mention a curiosity: Giuseppe Verdi, who began his musical life by playing the organ in his parish church, and who took music lessons from two organists, Pietro Baistrocchi and Fernando Provesi, must have had a good knowledge of the effect of the rolling drum and of its construction. In fact, in the first scene of Act I of *Otello*, Verdi requires that the organ on stage hold the first three notes of the pedalboard (C, C#, D) for numerous measures. It is a dramatic beginning with "lightning, thunder, hurricane," as specified in the introductory description; it is a natural form, which anticipates the emotional turmoil of the leading character. The three held notes in fact reproduce the effect of thunder quite faithfully.

## The Bagpipe

The narration of the birth of Christ in the Gospel according to Luke tells us that among the first to come to the manger was a group of shepherds. The activity representations obviously incorporated such features (the first nativity scene was created in 1223 at Greccio, in the region of Umbria, by St. Francis of Assisi), and it is clear that the shepherds who participated would carry with them the typical musical instruments of their tradition: bagpipes and reed flutes, or *aramelle*. A large number of paintings also testify to this tradition. The style of the *pastorale*, literally "shepherd's song," is directly inspired by the songs of the shepherds and by their musical instruments. One of the characteristics of the bagpipe—commonly referred to in Italian as *cornamusca*, but also found as *gaisa*, *baghet*, and *piva*, just to mention a few of the original dialect-derived names that were given to several instruments, and similar but sometimes incorporating marginal construction differences—is the presence of at least one Bourdon pipe, which produces a drone. In the year 1544, Vincentio Beltramo from the Burgundy region of France specifies the *ampogne* (bagpipes)<sup>53</sup> in the contract

for the organ at S. Nicola a Tortoreto (Teramo). The name may have indicated a complete reed stop; however, since immediately before in the same document he had mentioned the *Trombecte* stop, it is likely that, in the case of the bagpipe, he meant them to be only an effect.

This device was particularly common in organs built in central and southern Italy well into the nineteenth century. One reed pipe, usually with a short wooden resonator, could be easily activated by means of a stop control, and left on to play continuously. In some instruments two of these pipes, at different pitches, can be found, but always individually controlled. These pipes can be tuned at different pitches according to the need; having two of them instead of one, of different sizes, expanded the tuning range without creating excessive speech or volume problems. The notes normally produced by these pipes rotate around the keys used for musical compositions named *Pastorale*: G, F, D, and C. They simulated the continuous sound of the bagpipe's Bourdon, and music in *pastorale* style would be improvised over this background sound. This can be done today as well, of course, or a *pastorale* piece can be played that is compatible with one of the keys produced by the bagpipe effect. ■

## Notes

1. A. Banchieri, *Conclusioni nel suono dell'organo* (Bologna, 1609, Rossi), "Quinta conclusione dilucidata," p. 14.
2. *Descrizione delle Feste... Per le nozze del Ser[enissimo] Pr[in]cipe Odoardo Farnese... con la Ser.ma Pr.ssa Dorotea Sofia* (Parma, 1690), p. 24.
3. A. Conti, "Trattato dell'imitazione," in *Prose e poesie*, II (Pasquali, Venezia, 1756), p. 109.
4. Dom Bedos de Celles, *L'art du facteur d'orgues* (Paris 1766–1778, L.F. Delatour), Pl. XLIX, plate 9.
5. P. P. Donati, "Note sul restauro," in *L'organo di Giovanni Piffero, 1519, del Palazzo Pubblico di Siena* (Siena, 1983, Periccioli), p. 14.
6. "Tremolli." See G. Vio, "Documenti di storia organaria veneziana," in *L'Organo*, XIV (1976), p. 37.
7. "...flauto alla todesca cum soi tremolanti." See G. Dispensa Zaccaria, *Organi e organari in Sicilia dal '400 al '900* (Palermo, 1988, Accademia nazionale di scienze, lettere e arti), Doc. 24, p. 134.
8. "...reducendo fifaros tremulos ad usum modernum..." See also O. Mischiati, "Vicende di storia organaria" in *Storia della musica al Santo di Padova a cura di Sergio Durante e Pierluigi Petrobelli* (Vicenza, 1990, Neri Pozza), *Fonti e Studi per la Storia del Santo a Padova*, X, 6, pp. 163–164.
9. "...che sia adattato il tremolo che faci lo effetto del fifaro." See also O. Mischiati, *L'organo della Cattedrale di Feltre* (Bologna,

1981, Patrona (Biblioteca a cura di Maria e organistica), VI, pp. 9 and 74.

10. "Italis Traversa vel Fiffaro." See M. Praetorius, *Syntagma Musicum II, De Organographia* (Wolfenbüttel, 1619, Holwein; facsimile Kassel, 1958, Bärenreiter) (*Documenta musicologica*, I, Reihe, XIV), p. 35.

11. As late as the 19th century T. Monzani, a famous builder of transverse flutes born in Verona but working in London, still uses the term "German" to define the transverse flute. He wrote the treatise *Instruction for the German Flute* (London, 1801, Monzani & Cimador).

12. M. Agricola, *Musica instrumentalis deutsch* (facsimile, Leipzig, 1896, Breitkopf & Härtel), p. 171.

13. During the month of June of that year he signed a payment receipt for having installed the "fiffaro." See L. Stella-V. Formentini, *L'organo di Valvasone nell'arte veneziana del Cinquecento* (Udine, 1980, Ribis), p. 96, doc. 19, and L. Stella, "Vincenzo Colombi organaro a Venezia e la sua attività," in *L'Organo*, XXXIX (2007), pp. 47–49.

14. Zaccaria, *Organi e organari in Sicilia*, Doc. 27, 29, 30, pp. 137–139.

15. "...quando si vol cantare motetti con poche voci, & anco suonando delicatamente, si può anco con il tremolante, ma adaggio, & senza diminuire." See C. Antegnati, *L'arte organica* (Brescia, 1608, F. Tebaldino), c. 8 r.

16. "...perché rende confusione & è segno che non hanno gusto di quello che fanno." See C. Antegnati, *L'arte organica* (Brescia, 1608, F. Tebaldino), c. 7 v.

17. C. Monteverdi, *Sanctissimae Virgini Missa senis vocibus ac Vesperae pluribus decantandae...* (Venezia, 1610, R. Amadino).

18. "Principale e tremolare," Monteverdi, *Sanctissimae Virgini*.

19. L.F. Tagliavini, "Il Fiffaro o Registro delle Voci umane. Origine ed evoluzione dei registri 'battenti'," in *L'Organo*, XXXIII (2000), p. 113, and "Registrazioni organistiche nei Magnificat dei 'Vespri' Monteverdiani," in *Rivista Italiana di Musicologia*, II, 2 (1967) (Atti del Convegno di studi dedicato a C. Monteverdi, Siena 28–30 Aprile 1967), pp. 365–371.

20. G. Diruta, *Seconda parte del Transilvano*, Libro quarto (Venezia, 1622, A. Vincenti), p. 22: "Discorso sopra il concertar li registri dell'organo" ("discussion of the use of the organ stops").

21. In addition to sporadic earlier examples, the stop Fiffaro, later called Voce Umana, is unmistakably documented from 1581, the year of construction of the organ at San Giuseppe in Brescia, by organbuilder Graziadio Antegnati in cooperation with his son Costanzo. See Tagliavini, "Il Fiffaro o Registro delle Voci umane," pp. 109–248.

22. R. Lunelli, "Descrizione dell'Organo di Como e l'attività italiana di Guglielmo Hermans," in *Collectanea Historiae Musicae* 2, 1956, p. 276.

23. Th. Culley, "Organari fiamminghi a S. Apollinare a Roma – I," in *L'Organo* V (1964–1967), p. 95.

24. Zaccaria, *Organi e organari in Sicilia*, Doc. 56, p. 163.

25. "...ocellj..." See also G. Spanziani, *L'organo ad Ascoli Piceno dal XV al XIX secolo. Capitoli di storia organaria ascolana attraverso i documenti d'archivio e gli strumenti superstiti* (Grottammare, 2001, Stamperia dell'arancio), p. 71.

26. G. Vale, "Contributo alla storia dell'organo in Friuli," in *Note d'archivio per la storia musicale*, IV (1927), p. 95.

27. An example can be found in the organ of an unknown builder, manufactured in the 17th century for the Mother Church of Nicastro (Catanzaro), restored by Fratelli Ruffatti in 1981, which has five nightingales, one for each of the five sections of the façade.

28. An organbuilder of Flemish origin also known as Vulfanger or Vincenzo Fiamingo. See also Th. Culley, "Organari fiamminghi a S. Apollinare a Roma – I," in *L'Organo* V (1964–1967), p. 97.

29. B. Brumana, G. Ciliberti, *Orvieto, una cattedrale e la sua musica (1450–1610)* (Firenze, 1990, Olschki), p. 276.

30. Culley, "Organari fiamminghi," no. 2, p. 223.

31. Lunelli, "Descrizione dell'Organo di Como," p. 275.

32. U. Pineschi, "L'uso dei registri dell'organo Pistoiese nei secoli XVIII e XIX," in *L'Organo* XII (1974), p. 19.

33. *Ibid.*, p. 9 (no. 6).

34. *Ibid.*, p. 10 (no. 8).

35. *Ibid.*, p. 12 (no. 15).

36. The originals were unfortunately lost, and only their stop controls and original labels survived; they were therefore reconstructed during restoration. The two nightingales and the *passeri* (sparrows) are *uccelliere* built in the traditional form, only the number of pipes changing (5, 3, and 10, respectively) and the type of control (lever with latching notch for the first nightingale and the sparrows, lever without latching notch for the second nightingale). The two crickets are made each with two 1/8' pipes tuned slightly differently. In this case also the difference is in the action: with a latching notch for the first, without for the second. The *Speranza* (local name probably

referring to *Parus Major*, *Cinciallegra*, or *Titmouse bird*) has been reconstructed with two stopped pipes. The two action levers rise and close the stoppers, thus simulating the typical song of the bird (information kindly provided by Umberto Forni).

37. R. Lunelli, *Studi e documenti di storia organaria veneta* (Firenze, 1973, Olschki), p. 216.

38. In earlier instruments the pedalboard only acted as a pull-down device for the first keys of the keyboard, and no dedicated pedal stops were present.

39. G.P. Calvi, *Istruzioni Teorico-Pratiche per l'Organo* (Milano, 1833, Bertuzzi), p. 5, and G. Castelli, *Norme generali sul modo di trattare l'Organo Moderno. Cogli esempi in musica del Maestro Vincenzo Antonio Petrali* (Milano, Lucca, 1862), p. 13.

40. In the organ installed in the Sanctuary of S. Maria di Campagna in Piacenza, built by the Serassi brothers in 1825 and 1838, the following such devices are present: the *Tin ballone* (four wooden pipes playing G-1, A-1, B-1, and C1), the *Rollante* (again four pipes, but of different size, corresponding to B1, C2, C#2, and D2), and a *rombo* (composed of eight wooden pipes from D1 to A1), which is activated in conjunction with the Turkish Band. See O. Mischiati, *L'organo di Santa Maria di Campagna a Piacenza* (Cassa di Risparmio di Piacenza, 1980), p. 34.

41. R. Giorgetti, *Organi ed Organari a Montepulciano* (Firenze, 1994, Giorgi e Gamba), p. 89.

42. Information kindly provided by Francesco Ruffatti. In the Serassi organ of the Cathedral of Ragusa Ibla, there are five tin pipes, constituting the central section of the façade, approximately from C1 to E1 of a *Principale* 16', and therefore of very large size (and expensive!), expressly and exclusively dedicated to this particular variant, more terminological than anything else, of rolling drum. It is to be noted that Sicily, whose inhabitants are traditionally rather superstitious, is an area of intense volcanic activity, often subject to earthquakes, and therefore the presence of the "Earthquake" among the organ's special effects possibly had a dual purpose—as a musical effect and as a good luck charm!

43. "...A fare una battaglia con un tamburo alla todesca..." See also B. Brumana, G. Ciliberti, *Orvieto, una cattedrale e la sua musica (1450–1610)* (Firenze, 1990, Olschki), p. 276.

44. A. Banchieri, *L'organo suonarino, Opera Ventesima quinta* (Venezia, R. Amadino, 1611), "Quarto registro, Discorso dell'autore," p. 41. This suggestion does not appear in the 1605 edition (*Opera terza decima*).

45. Culley, "Organari fiamminghi," p. 222.

46. Bedos de Celles, *L'art du facteur d'orgues* (Paris, 1766–1778, L.F. Delatour), III partie, XXIII indication. Pour imiter le flageolet: "On mettra au grand Orgue la Quarte [de Nasard, 2'] & la Doublette [2']; & au Positif les deux 8 pieds pour l'accompagnement," p. 532.

47. Both instruments were restored by Fratelli Ruffatti in 2003–2004.

48. "Il tamburo va suonato a botte, e non tenuto che disturba." See also V. Giacobbi and O. Mischiati, "Gli antichi organi del Cadore," in *L'Organo* III (1962), p. 57.

49. San Servolo martire, op. 287, built in 1791, Buje (Istria). See G. Radole, "L'arte organaria in Istria," in *L'Organo* VI (1968), n. 1, p. 94; Collegiata di S. Stefano, Monte San Giusto (Macerata), op. 308, built in 1792, personally recorded; Pieve di S. Maria Assunta, Candide (Belluno), op. 367, built between 1797–1799. See Giacobbi and Mischiati, "Gli antichi organi del Cadore," p. 54 (n. 4).

50. U. Pineschi, "L'uso dei registri dell'organo Pistoiese nei secoli XVIII e XIX," in *L'Organo* XII (1974), p. 10 (n. 8).

51. G. Berbenni, "Serassi e l'arte organaria fra sette e ottocento," in *I Serassi e l'arte organaria fra Sette e Ottocento* (Atti del Convegno internazionale di studi, Bergamo 21–23 aprile 1995) (Bergamo, 1999, Carrara), pp. 29 and 33.

52. Castelli, *Norme generali*, p. 13.

53. G. Spanziani, *L'organo ad Ascoli Piceno dal XV al XIX secolo. Capitoli di storia organaria ascolana attraverso i documenti d'archivio e gli strumenti superstiti* (Grottammare, 2001, Stamperia dell'arancio), p. 71.

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