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Information on Organ Registration From a Student of J.S. Bach

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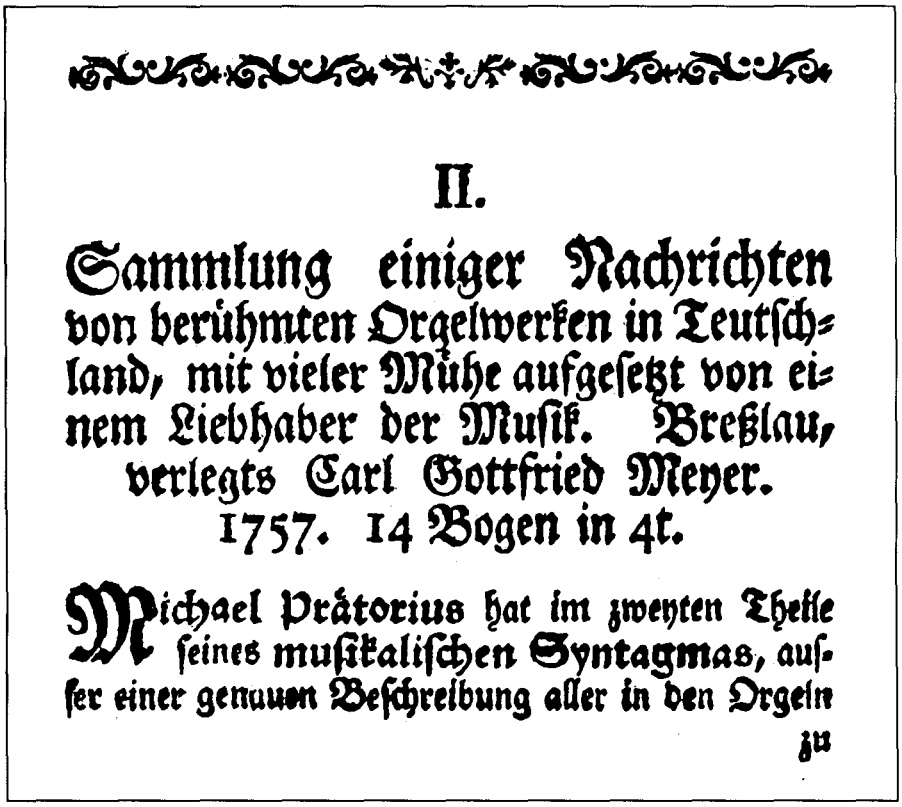

II.

Sammlung einiger Nachrichten von berühmten Orgelwerken in Teutſchland, mit vieler Mühe aufgeſetzt von einem Liebhaber der Muſik. Breßlau, verlegts Carl Gottfried Meyer. 1757. 14 Bogen in 4t.

Michael Prätorius hat im zweyten Theile ſeines muſikaliſchen Syntagmas, auſſer einer genauen Beſchreibung aller in den Orgeln zu

The beginning (p. 486) of Agricola's article

Despite two centuries of research into the life and music of J.S. Bach, there is little that can be said with certainty about his organ registration practices. Aside from two short passages (quoted below) that merely assert Bach's understanding of and skill at registration, there is only J.F. Agricola's report that Bach liked reed stops.[1] Up until now, it has not been possible to identify sources, either from Bach himself or from his immediate circle, that offer precise instructions on organ registration. The source described and translated here provides such information.

The source is an article found in Friedrich Wilhelm Marpurg's *Historisch-Kritische Beyträge zur Aufnahme der Musik* (Historical and Critical Contributions to the Reception of Music), Volume 3, Part 6 (Berlin: Gottlieb August Lange, 1758), pages 486 to 518. Marpurg—an author, theorist, and critic closely associated with the circle of Bach's students in Berlin—published the *Historisch Kritische Beyträge* as a periodical from 1754 to 1762 and again in 1778; it includes book reviews, biographies of musicians, discussions of problems in music theory, and reports on musical inventions. The article under consideration falls into the first of these categories. Ostensibly it is a review of a new collection of organ stoplists, the *Sammlung einiger Nachrichten*, published in 1757. In fact, only a small portion of the article is devoted to the new publication. That portion, however, begins the article, and this may be one reason why the significant information on registration found later in the article has escaped previous notice.

The article falls into four sections:

I. A brief appreciation of the new publication (not really a review, since there is no detailed critical examination), on pages 486–87.

II. A classification and description of stops found in organs of the time, from page 487 to page 501.

III. Information on how to combine the stops, from page 502 to page 505. This section is of immediate relevance to organ registration, and it contains the only material evaluated in the analytical portion of this article.

IV. The stoplists, unpublished elsewhere, of six organs, from page 506 to page 518. These stoplists describe organs located in the Freiberg Petrikirche, the Halberstadt Stiftskirche, the Halle Marktkirche, the Königsberg Domkirche, the Magdeburg Johanniskirche, and the Meerane Stadtkirche (Saxony). The present English translation omits these stoplists.

Neither the Table of Contents for Part 6 nor the heading of the article indicates its author. Only the name "Agricola" at the end of the article identifies the author as Johann Friedrich Agricola (1720–74), a student of J.S. Bach from 1738 to 1741. Thereafter, Agricola moved to Berlin, becoming part of the circle of Bach's students (including C.P.E. Bach and J.P. Kirnberger) active there. Frederick the Great, King of Prussia, eventually named him Royal Prussian Court Composer, a position that limited Agricola's activity as an organist. Nevertheless, the article translated below reveals that Agricola remained highly knowledgeable in organ matters, as does his contribution ten years later to Jacob Adlung's *Musica mechanica organœdi* (1768). Agricola served as the final editor[2] of that publication, and the notes he added to it confirm not only his understanding of organ construction and playing technique but also his acquaintance with a wide variety of organs and organ music, both throughout Germany and (as a result of his reading) in France.

* * * * * * * * *

Here follows the translated text of Agricola's article. Original terms and phrases of special interest are italicized. The translator's footnotes are in superscript numbers; superscript letters identify Agricola's own footnotes, contained in parenthetical statements in smaller type immediately following the letters. Boldface numbers in curly brackets identify the original pagination of Marpurg's publication.

***{486}* A Collection of Some Reports about Famous Organs in Germany [*Sammlung einiger Nachrichten von berühmten Orgelwerken in Teutschland*]**, drawn up with great effort by a musical amateur. Breslau, published by Carl Gottfried Meyer,[3] 1757. 14 signatures in quarto.

In the second part of his *Syntagma Musicum* Michael Praetorius has furnished, in addition to precise descriptions and designs of each of the stops ***{487}*** normally found in the organs of his day, the stoplists or specifications of 27 famous organs[4] in Germany. Mr. von Mattheson, Secretary of Legation [*Legationsrath*[5]], has published a far more ambitious collection of stoplists in the appendix to his new and expanded edition of Niedt's *Handleitung zur Variation des Generalbasses*.[6] Despite these efforts there were many additional instruments in Germany (where one encounters a greater number of beautiful, large organs than in any other country) that also deserved to have their descriptions published. This has prompted the author of the collection here announced to compile and publish (doubtless with great effort and expense) an additional 124 stoplists, including many very notable ones, none of which are to be found in Praetorius or in Mattheson. And although this still falls far short of describing all the good organs in Germany, yet there is no doubt that with it Mr. Meyer has once again rendered an estimable service to all those who pursue greater knowledge of the organ.

Perhaps some of my readers will not mind my taking this opportunity to provide them with a rather more precise account of organ stops or registers, since they are so various and have so many different names. ***{488}*** I will endeavor to be of service to them here.

Stops in organs are divided in general into flues [*Pfeifenwerk*] and reeds [*Rohr- oder Schnarrwerk*]. The distinction lies in the different structure of the pipes, principally in their mouthpieces [*Mundstücks*[7]], which naturally results in a different sound. The

mouthpiece of a reed is a short tube, usually made of tin, cut in half lengthwise. Over its open side there lies a movable sheet [*Blatt*], called the tongue (*languette* [in French]), which the wind can force up and down. Both are anchored at the top in a little block (*noix*[8] [in French]), through the middle of which there is an opening. The lower part of the shallot [*Mundstück*[9]] and its reed are set into a separate tube, called the boot, which constitutes the lowest section of the pipe. The block sits atop this boot. Through [the block] there passes a piece of steel or brass that extends about halfway down the tongue, and keeps the wind from lifting the tongue any higher than the correct pitch requires. The pipe is tuned either lower or higher by drawing this piece of steel up or down, and thus it is called the tuning wire [*Stimmkrücke*]. The upper part of the pipe, the part organbuilders call the resonator [*Corpus*], is fastened atop the opening in the block. When the reed mentioned above is set in motion, it ***{489}*** strikes the shallot and rebounds again from it, and thus causes a kind of rattling sound, somewhat similar to the reed on an oboe or a bassoon. To keep the reed from beating too violently against the shallot, leather is glued to the latter; organbuilders call this "facing" [*füttern*].

A flue pipe has at its mouthpiece a sheet fastened horizontally into the body of the pipe, made of the same material as the pipe itself. Above and below it there are narrow horizontal openings. The one underneath, in which the pitch is actually formed by the stream [*Anstrich*] of wind, is very narrow. The one on top is rather wider, encompassing either the entire width of the pipe or somewhat less, according to the character of the stop. The part of a flue pipe below the mouth is called the foot.

A flue pipe whose body above the mouth is of proportional width and cylindrical [*deren Körper über dem Mundstücke, bey proportionirter Weite, durchaus gleich lang ist*], and is 8 feet long, produces C in the bass octave of the keyboard, in so-called *Chorton* or trumpet pitch. A pipe whose body is 4 feet long produces an octave higher, tenor c; a pipe of 2 feet is another octave higher, middle c, etc. If a pipe is stopped on top, it sounds twice as low as an open pipe; thus a stopped pipe four feet long produces an eight-foot C. ***{490}*** This is the source of the nomenclature by which it is customary to distinguish how high or low organ stops are. The wider a pipe is, the shorter it must be to produce a given pitch. The narrower it is, on the other hand, the longer it must be. This proportion of length to width in a pipe at a given pitch is called the scale. If a pipe tapers toward the top, or is only half open, then it must be somewhat shorter than if it were entirely open.

The proportion of reeds is different, since the height or depth of the sound does not depend so much on the upper portion of the pipe as on the shallot. Thus there are reeds whose upper portions are quite short that still produce an 8-foot pitch. The tone of a reed is all the more splendid and impressive, however, if its resonator is rather long. Thus the resonator of a 16-foot Posaune at low C must be at least 12 feet long.[10]

The various timbres that organ stops produce are thus a result of the pipes' shape, their different lengths and widths. A wide, short pipe sounds fuller and more pompous than a long, narrow one. But the different cut-up of the lip—larger or smaller, wider or narrower—also contributes [to the difference in timbre].

{491} The material used to make organ pipes is either pure tin, pipe metal (a mixture of lead and tin), or wood. Brass, as mentioned above, is used for reed tongues. It is as unsuited for pipe resonators, though, as sheet iron [*Blech*], since it causes a far too rattling, crackling, rustling sound. Our ancestors made their Regals of it, but with a poor effect. Tin sounds more brilliant [*schärfer*], while wood sounds softer and duller than pipe metal.

Flues are again divided into so-called principals and flutes. The principals are completely open and cylindrical [*von gleicher Weite*]. To this category belong:

1. the Principal 32', 16', 8', or 4';
2. the Octave 8', 4', 2';
3. the Superoctave or Sedecima 2' and 1'; the only distinction in all of these lies in their pitch [*höhe und tiefe*]. For example, if the Principal is 16', the Octaves are 8' and 4', and Superoctaves 2' and 1', etc. The "Principals" proper, though, stand in the facade, so that they are visible on the exterior. The 32' Principal belongs only in the pedal.
4. the mixture stops [*Mixturwerke*[11]], which, since they produce either a fifth or a third, or both of these together, or an entire chord on one note, cannot be used alone, but only for reinforcement and in combination with larger and smaller principals and ***{492}*** octaves. They are:

(1) the Quints 6', 3', and 1⅓';
(2) the Terzes, mostly 1⅗';
(3) the Sesquialters that consist of 2 pipes [per note], sounding the Quint and the Terz;
(4) the Mixtures, that consist of several pipes [per note], which sound the harmonic triad,[12] either singly or doubled. The lowest pipe is seldom lower than 2 foot. Since the higher pipes that form the triad would be much too small to extend throughout the entire keyboard, these higher pipes are rearranged into another composition one or more times in each octave; this is called "repeating." For example, if the lowest C [of the mixture] sounds the following pitches: c' g' c'' e'' g'' c''', tenor c would sound something like these: g' c'' e'' g'' c''' e''', etc. The number of ranks by which a Mixture is labeled indicates how many pipes speak at each note; for example, "six ranks" when it has 6 pipes, "four ranks" when it has 4', etc. There are several kinds of mixtures, that are distinguished not by their scales, but rather by their loudness and harmonic composition. These are: (a) the Mixture proper, (b) the Scharf, (c) the Cimbel, (d) the Rauschpfeife, which is, however, commonly the same thing as the Sesquialtera,[13] (e) the Cornett [*sic*]. The last-named consists of larger pipes and does not repeat, ***{493}*** but commonly extends only over half the keyboard; it is seldom larger than 5 ranks. Sometimes there is among the pipes of this Cornett a reed stop and a Gedackt [*Bisweilen befindet sich unter den Pfeifen dieses Cornetts ein Rohrwerk und ein Gedackt*]. It sounds very pleasant to perform a cantus firmus on it, accompanied by an eight-foot Principal and a four-foot Octave. Our ancestors used to make their mixtures with more ranks; but today's preference is to make, instead of, e.g., one ten-rank manual mixture, two mixtures, one having 6 and the other 4 pipes per note. The former is then called Mixtur, the latter Scharf or Cimbel.

All of these principals are actually the stops that one draws for the full organ [*zum vollen Werk*], when the organ is to sound at its fullest power. All these stops in one division [*auf einem claviere*] must be built to the same scale [*von gleicher Mensur*], or as organbuilders say, "on the same basis" [*aus einerley Fundament*]. If there are several keyboards, however, each keyboard should by right have stops of different scaling and voicing. For example, in the Hauptwerk and Pedal they are of broad and full scale. In the second manual they are voiced more keenly and penetratingly; and in the third their sound is gentle.[14]

The so-called "flutes" are either completely open, completely stopped, or stopped with some sort of opening in the cap. Open flutes are either completely cylindrical or ***{494}*** tapered. Those of the first type are either narrow and long, such as:

1. the 16' pedal Violon;
2. the Viola da Gamba[a] (Some organbuilders make their Viola de Gambas somewhat tapered toward the top);
3. the Querflöte, whose resonators are commonly twice as long as their pitch requires, but very narrow;
4. the Schweizerpfeife in old organs;
5. the Vagarr or Vugara, which some build of wood in a rectangular shape, and which produces a beautiful effect;
6. the Flöte a bec;
7. the Unda maris, which is a narrow-scale 8' principal standing next to the usual principal at this pitch, but tuned a little bit sharper; when these two stops are drawn together, they produce an undulating sound;
8. the Salicinal or Salicet;

or they [i.e., the cylindrical open flutes of the second type] are wide and short, such as:

1. the Hohlflöte 8', 4', and 2'[b] (Some [organbuilders] make the Hohlflöte wider in the middle and narrower at the top and bottom, which produces an excellent tone; such an 8' [Hohlflöte] can be heard in the organ in the castle church at Altenburg.);
2. the Waldflöte 4' and 2';
3. the Sifflöte 2' and 1';
4. the Schwiegel in some old organs;
5. the Hohlquints 3' and 1½', which are quints built at Hohlflöte scale.

{495} The following belong to the flutes that are tapered:

1. the Gemshorn 8', 4', and 2', which is rather tapered toward the top. Some of our ancestors called this stop "Koppelflöte."
2. the Nasat 3', which is a quint built at Gemshorn scale.
3. the Spitzflöte or Spillpfeife (incorrectly called Spielflöte) 8', 4', and 2', whose mouth is somewhat wider and whose body is somewhat narrower at the top than the Gemshorn.
4. the Blockflöte 4' and 2', in old organs; this is a Spitzflöte that is somewhat wider at the top.
5. the Flachflöte 8', 4', and 2'; the Flachflöte has a narrow but wide [*enges aber breites*] mouth, and is not tapered as much toward the top as the Gemshorn.

The following belong to the completely stopped flutes:

1. the Gedackt 8' and 4', of various scales [*Weite*], and with either weaker and gentler or fuller and more pompous voicing;
2. the Bordun 16' and 8'; this is nothing other than a wide-scale Gedackt. The pedal 32' Untersatz and the 16' Subbass are the same thing;
3. the Quintadene 16', 8', and 4' is a Gedackt that speaks its octave quint together with [its fundamental], due to its low cut-up and to the sheets, called side-beards, that are fastened to both sides at the mouth;
4. the Nachthorn is a Quintadene of somewhat wider scale. Other organbuilders build the ***{496}*** Nachthorn to a scale similar to Hohlflöte;
5. The Duiflöte; this is a Gedackt with two mouths standing opposite each other. Perhaps the name derives from *duo*, and means the same thing as Duo Flöte. It is, however, not very common. In the organ at Walthershausen[15] there is a stop of this name, which, however, is called Flöte Douce in the *Sammlung einiger Nachrichten von berühmten Orgelwerken* (perhaps due to misunderstanding);
6. the stopped Quinte 6' or 3'.

The stopped flues with some sort of opening in the top consist of:

1. the Rohrflöte 16', 8', 4', and 2'; there is a smaller open tube fastened into the cap of this pipe, thus giving the pipe an opening. It sounds louder than a Gedackt and softer than a principal.
2. the Bauerflöte or Feldpfeife 1'; this is to be found in the pedal of some older organs. Flutes that are completely stopped except for an opening through a tube are built of pipe metal. If Gedackts are intended to be gentle, they are made of wood.

Concerning flutes in general, it is to be noted that organbuilders vary greatly in voicing and in naming them, as well as in how they build the bodies and mouths. There is also no uniform spelling of the same names. Thus some call the Gedackt simply "Flöte." ***{497}*** What one might call "Flöte a bec," others call "Offene Flöte" or "Flauto amabile." Some call the Spitzflöte, for what reason I do not know, "Jula."[16]

It is easy to imagine from the nature of the matter itself, that many stops deriving their names from different instruments, e.g., the Viola da Gamba, etc., bear only the slightest similarity to these instruments. The fact that they do not sound exactly like a Viola da Gamba or some other instrument, though, does not prevent them from having their own very pleasant tone as organ stops. For example, in the organ of the castle church at Altenburg there is a 16' Querflöte. How similar could this stop be to an actual Querflöte, since it sounds only a very few pitches in common with the instrument? It is a narrow-scale, open flue of the same scale as the exceedingly beautiful 8' Viola da Gamba that is to be found in this organ. And when it is drawn together with the latter, the rapid runs and arpeggios (not slow chords, according to the inclination [*Vorurtheil*] of most organists) are played, [this combination] produces a very beautiful effect, and the pleasant keenness that is found in both these stops comes as close to the attack of a bowstroke on a [stringed] bass as is possible to achieve with pipes. At the least, this ***{498}*** tone exceeds in beauty that of many other so-called Viola da Gambas in organs.

Reeds are either open or stopped. The resonators of open ones are either of ample [*völliger*] scale (insofar as reeds will permit), or they have very short resonators. To the first type belong:

1. the Trompete 16', 8', and 4';
2. the Hoboe 8';
3. the Waldhorn 8' or 4';
4. the Schalmey in old organs, whose resonators are flared on top [*oben mehr auswärts gebogen*].
5. the Fagott, mostly at 16';
6. the Posaune 32' and 16' in the pedal;
7. the Trompete 8' and 4' in the pedal; some call the latter Cläron;
8. the Zinke in old organs.

In manual reeds of this type the resonators are mostly of tin; in the pedal 32s and 16s, however, they are best made of wood.

The reeds with short resonators are:

1. the Regal 8' and 4'; some call the latter Jungfern- or Geigenregal if it is voiced rather gently [*lieblich*];
2. the Trichterregal, whose resonators resemble a funnel;
3. the Krumhorn, whose resonators assume various shapes;
4. the pedal Cornett 2', which should not be confused with the mixture of this name mentioned above. Its resonators are narrower and longer than those of a Regal;
5. the Vox humana; some organbuilders make its resonator ***{499}*** in one form, some in another. Most of them have the misfortune of sounding exactly the way a human being must not sing if he wants to sing well. The closest thing to them would be the voice of many an ill-trained choirboy. The type that has somewhat larger resonators and a wide bulge [*Bauch*] in the middle, and is only half open on top, seems to be the most pleasant, since its rattling is thereby moderated by a hollow timbre. There is one of this type at Altenburg;
6. the Chalumo, which is a pleasant reed in some Silbermann[17] organs.

The stopped reeds are rather on the wane in more recent organs. To these belong:

1. the Dulcian 16' and 8', which has several small holes in the side of its resonator, in the same manner that some put them into Krumhorns;
2. the Knopf- or Apfelregal; its resonator is a round knob bored through with holes. Some call it Singregal;
3. the Sordun 16';
4. the Ranket 16' and 8';
5. the Baar- or Bärpfeife 8'.

These last 3 have smaller resonators concealed within their rather large resonators.

These are the most common stops in German organs. In general, German organbuilders seek a great deal of variety in their flute stops, the so-called *Galanterie* stops. It is easy to imagine that not all inventive possibilities are exhausted, and that ***{500}*** opportunities remain open for a skilled master to practice his musings and his powers of invention. For example, Mr. C.E. Friderici[18] from Gera, a master who excels equally in the construction of organs, harpsichords, and clavichords (the best comfort we have in the loss of Silbermann), has installed a new stop in an organ that he has just recently built [1753] at Meerane in Saxony (in association, as always, with his brother), that imitates the call of the nightingale. For the present he has named it *Don* [French "gift"], since he wished to give it to the church in his native town as a present.

The French do not put such great stock in a multiplicity of stops in their organs, as can be perceived in some measure from the stoplists of Silbermann, who learned his art for the most part in France. They are reported, however, to construct their organs very neatly, and in particular with a very comfortable touch. Short keys, of the sort found in some of our old organs, contribute somewhat to this; such keys have, however, been exchanged—very wrongly—for longer ones in [our] more recent instruments.[19] As far as can be perceived from the organbooks of some French organists, these are their most common stops (matched here with their German names):[20]

{501} Montre	—	Principal
Prestant	—	Octave
Doublette	—	Superoctave
Quarte de Nazard	—	Superoctave
Nazard	—	Nasat
Fourniture	—	Mixtur
Cymbale	—	Cimbel
Cornet	—	Cornett
Bourdon	—	Bordun or Gedackt
Flûte	—	a kind of Flöte
Trompette	—	Trompete
Clairon	—	a smaller Trompete
Cromhorne	—	Krumhorn
Larigot	—	a little Sifflöte or Waldflöte
Cornet separé, Cornet d'Echo	}	Cornets, each of which has its own keyboard

Since we have now described the stops in organs insofar as is possible, perhaps some readers would not be averse to reading something about how to use these stops and combine them with each other. Since there are countless variations in registration, it is not possible to cite them all; furthermore, an organist with a good ear will have no difficulty trying out their effects for himself. Thus some general remarks will suffice to provide someone not already experienced in the practice of organ registration the impetus for further experimentation.

{502} When one wishes to play quite loudly, one draws the full organ [*das volle Werk*], to which all of the principal stops described above belong. To these one may add the Trompetes 16', 8', and 4', if they are in good tune. It is indeed also possible to couple to it a second manual, on which the full organ is likewise drawn. On this [registration] one may not only play slowly, but may also play rapid pieces [*Sachen*], if the organ speaks promptly and one's fingers allow it. Full textures must predominate, however, in doing this. French organists do not draw the reeds in the full organ, because they [i.e., the reeds] sound much too unpleasant [*widrig*] when one plays full chords in the bass. It is necessary in general to refrain from [playing] all such chords on the organ, however, if 16' or 8' stops are drawn. The flutes are not drawn with the full organ. There is an exception to this: if the Principal is only an 8', then a 16' Gedackt, Bordun, Quintadena, or Rohrflöte can and must be drawn with it. A 16' Bordun greatly augments the gravity of a 16' Principal. A similar [precept] should be observed if the Principal is only a 4'; in that case, it is

necessary to draw an eight-foot flute with it, as a foundation stop.

A four-foot stop cannot be used without covering it with an eight-foot, unless one intends to play very rapid florid passages on it [*man müßte denn sehr geschwinde Passagien darauf spielen*]. ***{503}*** The mixtures absolutely may not be used except in company with the other principal stops. But if the latter are present, then [the mixtures] fill them out excellently, and the discords that would result from so many chords beating against each other (since the mixtures consist entirely of small pipes) are covered by [the principals] and, as it were, devoured. The mixtures should never be used with the flutes [*Zum Flötenwerke gehören die Mixturen gar nicht*]. But an 8' Gedackt may be drawn with a Sesquialtera and a 1-foot Octave[21] for rapid arpeggios.

A Quint or a Terz must always have a higher Octave or Superoctave on top of it.[22] For example, if the Quinte is 3-foot, then a 2-foot stop must be drawn together with an 8' and 4'.

It is inadvisable to omit an octave in the middle. For example, an 8- and 2-foot stop without a 4-foot would sound far too hollow [*leer*], especially when playing full chords. But if one is playing a single melodic line on a manual, for example in a trio, then one may indeed unite a 16' and 4'. Thus, for example, a 16' Quintadene and 4' Hohl- or Waldflöte produces, in this instance, a good effect. Even a 16' Bordun with a 1' Sifflet has a good effect, if fast, single-line passages are played on them. In choosing stops, a great deal depends in general on whether one is playing ***{504}*** a single line or a full texture on a manual.

A reed is seldom used alone. One always draws a flue stop of the same pitch with it to muffle the reed's rattle. Thus, for example, an 8' Principal belongs with an 8' Trompete. If it is to resemble the human voice in any way, a Vox humana must always have with it, if not a principal (as Mr. Silbermann requires[23]), at least an 8' Gedackt or Rohrflöte. The most suitable stop to combine with it is, however, an 8' Hohlflöte, if it is available. But it is possible to use an 8' reed with a 4' flue stop, and vice versa. A reed stop is also suitable to serve as a foundation for several higher stops.

If one voice of a piece to be performed is to predominate, then louder stops must be drawn on the manual on which it is played than on the other manual.

The pedal must conform itself to the loudness of the manual.

The French play their fugues on an 8' reed, together with a lower Bordun[24] [*mit einem tiefern Bordun*] and a higher Octave. They believe that one can perceive the entry of ***{505}*** the voices more clearly if there are no mixtures; and in this perhaps they are not far wrong. They call the two principal stops drawn with the reed *le fond de la Trompette, ou du Cromhorne* (the foundation for the Trompette, or for the Cromhorne).

The so-called *Tierce en Taille* often found in French organbooks consists of the following stops drawn together: Bordun 8', Octave 4', Nasat 3', Tertie 1⅗',[25] and Octave 2', to which one may also add a 16' Gedackt. On the second manual, where the accompanying voices are performed, one draws a single 8' Principal or a few flutes, and in the pedal a 16' Principal Subbass and an 8' Octave.

Our ancestors believed that two stops of different scale at the same pitch level would of necessity sound bad if they were drawn together. But if such stops are well constructed and purely voiced, then one can refute our ancestors any day merely by drawing such stops and using them together. I have heard a Lieblich Gedackt, Vugara, Quintadene, and Hohlflöte played together on a certain organ, all at 8' and without any other stop, which produced a beautiful and strange effect.

[The article concludes with six stoplists.]

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Although the entire article recommends itself to students of 18th-century German organs and organ music, the information Agricola provides on organ registration is of particular interest. After categorizing and discussing the stops found in organs, Agricola at the top of page 502 begins to discuss the method of combining them. He first treats "das volle Werk," the *plenum*, and his instructions for constituting it differ markedly from other well-known 18th-century German *plenum* recipes. For the sake of comparison, here are analogous passages from Johann Mattheson and Jacob Adlung that offer the most familiar of those recipes:

> To the full organ (zum vollen Werke) belong the principals, the Sorduns, the Salicionals or Salicets (Weiden-Pfeiffen), the Rausch-Pfeiffen, the Octaves, the Quints, the Mixtures, the Scharfs (small mixtures with three ranks of pipes), the Quintadenas, the Zimbels, the Nasat, the Terzians, the Sesquialteras, the Superoctaves, and the Posaunes in the pedal, not in the manual, for the Posaunes are reed pipes which are excluded from the full organ in the manual. This is done because the Posaune would rattle too much at a high pitch. On the other hand, it sounds splendid in the pedal because of the depth of its tone, if its shallot is leathered (as it ought to be).
>
> (Johann Mattheson, *Der volkommene Capellmeister* (1739), p. 467, § 76)

> Anyone who would like to know what to draw for a manual plenum (zum vollen Werke) need know only this: the required stops are those that intensify. The Principal, together with all the Oktaves, as well as the Quints and Terzes, all serve for this purpose, but the compound stops intensify the most, such as the Terzian, Sesquialter, Mixtures, Scharp, Cimbel, etc. . . . If one wants an even louder plenum, then one should draw the appropriate stops on the second manual and couple the manuals together. Yet it is also necessary to have stops that produce gravity. The stopped flutes serve to do this, such as the Quintatön 16', or better yet, the Gedackt 16', Rohrflöte 16' or Bordun of the same size; also the Gedackt 8', Quintatön 8', Rohrflöte 8', Gemshorn 8', etc. (according to what is available) . . .
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> . . . What has been said about manual stops also holds true for the pedal; its plenum must also be loud in order to balance the manual. One pays more attention to its gravity, though at times also to its brilliance. The Contrabass 32', Subbass 16', Gedackt 8', Principal 32' and 16', Violon 16', and Oktave 8' all promote gravity. All of these may be drawn together if the organ has sufficient wind. . . . Sometimes brighter stops are included in the pedal, e.g., Oktave 4' and 2', or even Mixtures. These may also be used. . . . The Posaune 32' and 16' together with the Trompete [8'] may also be included, as well as the other reeds. Often the Posaune 16' is sufficient. In particular, the 16' stops are more suitable for use in playing rapid passages than the 32'.
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> (Adlung, *Musica mechanica organœdi* (1768), § 231 and 234)

Both Mattheson (1739) and Adlung (published posthumously in 1768, but written 30–40 years earlier) are in essential agreement as to the composition of the *plenum*: the manual *plenum* should consist of all the flue stops, flutes as well as principals, at all pitches from 16' to the mixtures, including all mutations; the pedal *plenum* should follow the same principles as the manual, but with the addition of pedal reeds at 16' (and perhaps at 32' and 8'). Agricola is plainly not in agreement with several practices that Mattheson and Adlung suggest. First, he states that only the principal stops belong to the *plenum* (p. 502), and reinforces this assertion later in the paragraph by specifically excluding the flute stops (for Agricola this category also includes string stops). This practice is in continuity with 17th-century sources, such as Praetorius[26] and Werckmeister.[27] Agricola's instructions are particularly noteworthy in that they postdate those quoted above by 30–40 years. It is curious that Agricola did not seize the opportunity as final editor of Adlung's *Musica mechanica organœdi* to offer his *plenum* recipe as an alternative; he does not hesitate to contradict Adlung on other points, such as the value of reed stops and the worth of the Rückpositiv. One might infer from this that Agricola did not consider the composition of the *plenum* sufficiently controversial to merit a contradictory comment. On the other hand, Agricola is quite definite in what he says about the *plenum*, and offers no alternatives.

Second, Agricola allows the use of manual chorus reeds (Trompetes 16', 8', and 4') in the plenum, provided they are in good tune (p. 502). This last statement may suggest one reason why Mattheson and Adlung exclude them (note, e.g., Adlung's dislike for reeds that are constantly out of tune, *Musica mechanica organœdi*, § 104 and 267), but change in taste must also have had something to do with it. Clearly Agricola's taste for reed stops did not weaken,[28] as did that of some of his German contemporaries. On page 504, Agricola recognizes that the French practice of playing fugues on the reeds may help clarify the polyphonic texture, but he does not go so far as to advocate the practice for German organists.

On the other hand, Agricola agrees with his earlier contemporary Adlung in requiring an ample 16' presence in the manual *plenum*. Together with his rejection of playing on a 4' stop without an 8' foundation, this points to the ever-increasing appreciation for gravity in organ tone, an ideal sought since before the time of Praetorius and fully achieved only with 18th-century developments in winding, chest design, and voicing.

Agricola seems to be the unique source for suggestions for single-line registrations, such as one might employ in performing an organ trio. He rejects gapped registrations (such as 8' and 2') for playing fuller textures, but seems to allow them for playing a single melody on a given manual. His suggestions—16' + 4', or 16' + 1'—may seem strange to modern ears; they need to be understood again in light of the enthusiastic appreciation for solid 16' foundation tone prevalent during (and long after) his day. The distinction he draws between playing a full texture and playing a single melody ("In choosing stops, a great deal depends in general on whether one is playing a single line or a full texture on a manual"—pp. 503–504) is likewise unique, and particularly helpful in its application to the music of J.S. Bach.

Agricola's defense of drawing multiple 8' stops on the same manual (p. 505) is in line with other mid-18th-century advice and opinion (cf. Adlung, § 232 and 233), and in

sharp contrast to earlier authors such as Niedt/Mattheson[29] and Werckmeister.[30] This predilection for 8' sound should also be understood in terms of the evolving taste for more foundation tone in organs, in tandem with new developments in organbuilding. It is worthy of note, however, that Agricola defends this practice only for what he calls "Galanterie" registrations (softer sounds involving combinations of flutes and strings) and not for the plenum.

To what degree do Agricola's suggestions reflect J.S. Bach's registrational practices? That question must be approached with caution. If Bach had used the *plenum* in works such as the D-major Fugue (BWV 532) or the Gigue Fugue (BWV 577), would he invariably have drawn a 16' flue as the foundation of the *plenum*? Would he have insisted that any mutation stop be capped by the addition of the next higher octave-speaking stop? On the other hand, Agricola's explicit inclusion of reeds in the *plenum* echoes his teacher's fondness for these stops. Agricola does not base any of his assertions in the article on J.S. Bach's authority. Yet if we take into account Agricola's contributions to Adlung's *Musica mechanica organœdi* (a publication that postdates the article by a decade), it is evident that Agricola maintained a strong allegiance to—perhaps one might say "reverence for"—J.S. Bach's organ registration preferences. Agricola mentions his teacher's name six times in his notes to Adlung's *Musica mechanica organœdi*; of those six, three cite Bach as an authority in modifying or refuting an opinion expressed by Adlung on organ design and registration.[31]

In Bach's Obituary,[32] authored by C.P.E. Bach and Agricola and published in 1754, there is passing mention of Bach's skill at organ registration:

> He not only understood the art of playing the organ, of combining the stops of that instrument in the most skillful manner, and of displaying each stop according to its character in the greatest perfection, but he also knew the construction of organs from one end to the other.[33]

Johann Nicolaus Forkel's biography of J.S. Bach (Bach's first biography, published in 1802, but written on the basis of information gathered earlier from those within the Bach circle) elaborates on the statement found in the Obituary, commenting on

> . . . the peculiar manner in which he combined the different stops of the organ with each other, or his mode of registration. It was so uncommon that many organbuilders and organists were frightened when they saw him draw the stops. They believed that such a combination of stops could never sound well, but were much surprised when they afterwards perceived that the organ sounded best just so, and had now something peculiar and uncommon, which never could be produced by their mode of registration.[34]

With regard to these statements, Agricola's words at the close of the article (p. 505) are particularly suggestive: "I have heard a Lieblich Gedackt, Vugara, Quintadene, and Hohlflöte played together on a certain organ, all at 8' and without any other stop, which produced a beautiful and strange effect." Even given the growing preference for 8' foundation tone in Thuringian organs during the first half of the 18th century, there were only a handful of organs at that time that could have offered the player such a rich palette of 8' stops. Agricola mentions only a few organs in the course of his article; one of them is the organ in the castle church at Altenburg,[35] finished in 1739 by the organbuilder Gottfried Heinrich Trost. Agricola evidently admired this organ, and saw to it that its stoplist was printed in a special supplement following the multitude of organ specifications in Adlung's *Musica mechanica organœdi* (Vol. I, pp. 286–87). Consulting that stoplist, we find the following 8' stops listed for the *Oberwerk* division:[36]

Geigenprincipal	8'
Lieblichgedackt	8'
Vugara [i.e., Fugara]	8'
Quintatön	8'
Hohlflöte	8'

The "certain organ" Agricola is speaking of is almost surely the instrument in the castle church at Altenburg. Records in Altenburg attest that Bach played upon the instrument in early September of 1739, shortly after it was finished, and that he found it highly satisfactory.[37] This was during the time when Agricola was studying with Bach. Was the performer Agricola had in mind perhaps Bach himself, and was Agricola thinking of that occasion (among others) when he helped write Bach's Obituary? Indeed, is Forkel's mention of Bach's "peculiar manner" of registration perhaps a distant echo of an experience that Agricola had at Altenburg in the fall of 1739?

If the above deductions are accurate, then it appears that J.S. Bach was among the pioneers in promoting a registration consisting of multiple 8' stops. Unfortunately Agricola does not reveal what sort of music he heard on this registration (perhaps it was an improvisation), Such a registration might be suited for pieces such as the settings of "Jesu, meine Freude" and "Vater unser im Himmelreich" from the *Orgelbüchlein*. In any event, what was considered so strikingly innovative in 1758 eventually became the norm; by the 19th century, both organs and registration practices took for granted that many 8' stops should be drawn and played together.

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NOTES

1. Jacob Adlung, *Musica mechanica organœdi*. (Berlin: Birnstiel, 1768), Vol. I, pp. 66 and 187.
2. Adlung died in 1762, leaving the book in manuscript form. His family turned the project over to Johann Lorenz Albrecht, who served as the book's first editor. After Albrecht submitted it to the publisher, F.W. Birnstiel in Berlin, Birnstiel asked Agricola to re-edit it. See Quentin Faulkner's "Jacob Adlung's *Musica mechanica organœdi* and the 'Bach Organ,'" *Early Keyboard Studies Newsletter*, V/2 (May 1990): 1–10.
3. On p. 487 below, Agricola seems to suggest that Meyer is not only the publisher, but also the author of the collection.
4. pp. 161–90 and 197–200.
5. A title conferred on Mattheson in 1744 by the Duke of Holstein.
6. pp. 157–204.
7. The term "Mundstück" properly refers to the shallot of a reed. In this context, however, it is clear that Agricola intends it to refer more broadly to the sound-creating components of any pipe.
8. *Noyau* in modern French.
9. Here Agricola seems to revert to the more specific meaning of the term "Mundstück."
10. Cf. the article on the Posaune in Adlung's *Musica mechanica organœdi*, Vol. I, pp. 121ff., in particular the note on the bottom of p. 122, added by Johann Lorenz Albrecht.
11. Agricola intends this term to encompass mutation stops as well as mixtures proper.
12. It is clear from this statement and the passage following it that Agricola takes for granted that mixtures will include not only octaves and fifths, but thirds as well; long before his day this practice was widespread in Germany (Adlung, writing in the first half of the 18th century, also takes it for granted; cf. Adlung, Vol. I, § 233, p. 170, and § 244, p. 176).
13. Yet another indication of the widespread incorporation of thirds into mixtures.
14. This practice seems to have been introduced into Germany by Eugen Casparini in his organ at St. Peter and Paul in Görlitz (1697–1703); cf. Adlung, § 272. Apparently as a result of Casparini's influence, instruments by Gottfried Silbermann and his disciples also follow this practice.
15. Built by Gottfried Heinrich Trost, 1726–30.
16. For example, in the organ at the cathedral in Königsberg, printed below on pp. 513–15 of Agricola's article; also in Praetorius, pp. 200 (Riddagshausen) and 233 (St. Lambrecht, Lüneburg). Elsewhere Agricola censures the practice of giving fancy names to ordinary stops; see his note to Adlung,p. 107.
17. Gottfried Silbermann (1683–1753).
18. 1709–80; a disciple both of Gottfried Silbermann and of Gottfried Heinrich Trost.
19. Agricola amplifies this statement in a note to Adlung's *Musica mechanica organœdi*, Vol. II, p. 23:

> . . . The French make even their harpsichord keys shorter than the Germans—and rightly so—and nevertheless no one has yet complained about it. Above all, the semitones must be somewhat narrower on top than at the bottom. The late Kapellmeister [J.S.] Bach required this, and for the same reasons mentioned above, he also preferred short keys on the organ . . .

20. Some of these are obviously incorrect. Since Agricola does not name his sources, however, it is not possible to identify the reasons for the misunderstandings.
21. The following paragraph explains why a 1' stop is included in this combination.
22. Agricola is not entirely consistent in this interesting piece of advice. Earlier, on p. 492, he offers a composition of a six-rank mixture in which a third is the highest sounding pitch at tenor c. Furthermore, on p. 505 below, he lists the stops that the French include in the Cornet for a *Tierce en taille*; the highest stop in his list is a 1⅗'.
23. This article seems to be the only source that records this requirement.
24. The inclusion of a 16' Bourdon does not conform to fugue registration as described in any known source concerning French organ registration. If Agricola is referring to an 8' Bourdon, however, many French organbooks call for it together with the 8' or 8' and 4' Trompette.
25. i.e., 1⅗'.
26. *Syntagma musicum*, Vol. II (Wolfenbüttel: Elias Holwain, 1619), pp. 101 and 113.
27. Andreas Werckmeister, *Erweiterte und verbesserte Orgel-Probe* (Quedlinburg: Calvisius, 1698), p. 72; *Musicae mathematicae hodegus curiosus* (Frankfurt u. Leipzig: Calvisius, 1686), p. 52f. In these sources Werckmeister discourages the use of more than one stop at the same pitch.
28. See footnote 1 above.
29. Friedrich Erhard Niedt, *Musicalischer Handleitung anderer Teil/Von der Variation Des General-Basses . . . Zweite Auflage . . . mit . . . einem Anhang von mehr als 60. Orgel-Wercken, versehen durch J. Mattheson* (Hamburg: B. Schillers Witwe u. J.C. Kißner, 1721), p. 116.
30. Andreas Werckmeister, op. cit.
31. Vol. I, pp. 66 and 187; Vol. II, p. 23–24.
32. The original German text may be found in: Hans-Joachim Schulze, *Dokumente zum Nachwirken Johann Sebastian Bachs, 1750–1800* (Bach-

Dokumente, Vol. III. Kassel: Bärenreiter, 1972), pp. 80f. For an English translation, see: Hans T. David and Arthur Mendel, *The Bach Reader* (New York: W.W. Norton [1966]), pp. 215–24.
33. Schulze, p. 88; David and Mendel, p. 223.
34. David and Mendel, p. 314.
35. Altenburg is on the eastern edge of Thuringia, south of Leipzig. The organ has survived up to the present in its original location; it was restored by the East German firm Eule of Bautzen in 1974–76.
36. Remarkably, the Hauptwerk also boasts five 8' flue stops: Principal, Spitzflöte, Rohrflöte, Violdagamba, and Bordun.
37. Staatsarchiv Weimar, Friedenst. Archiv Gotha K 3 XXVI. 148a Bl.121; a report of the Rentkammer to the Duke of Altenburg, 1739.