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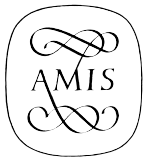

Jean Marius' *Clavecin brisé* and *Clavecin à maillets* Revisited: The "Dossier Marius" at the Paris Academy of Sciences

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The "Dossier Marius" in the Archives of the Academy of Sciences in Paris is a collection of miscellaneous papers left at his death by Jean Marius, inventor, builder of musical instruments, and adjunct mechanician at the Academy, whose activity can be documented for about two decades early in the eighteenth century. In music, Marius is known principally for his *clavecin brisé,* a folding harpsichord, and the *clavecin à maillets,* the hammer-action keyboard of which he was the inventor in France; but he also designed a portable organ, adapted the monochord to serve the tuning of harpsichords, conducted acoustical experiments, and built a bowed keyboard instrument. His interests ranged broadly, however: among his other inventions are a folding umbrella, a collapsible tent, a machine to sow seeds, improvements to the pocket watch, a water pump, and a novel type of candle.[1] References to these and other novelties of his—both musical and nonmusical—are documented in the Dossier Marius, which contains some three-score uncatalogued individual items, ranging from drafts of memoirs and plans of inventions to copies of legal papers and sketches of new ideas scrawled on the backs of envelopes. When taken together with other references to Marius in academic documents, the items in the Dossier provide a fascinating perspective and new insight on the work of this enterprising inventor—about whom, in fact, almost nothing is known outside the Academy.

The majority of the items in the Dossier relate to Marius' contributions to music, and among these there is special emphasis on his two principal inventions: the portable folding harpsichord and the hammer-action keyboard. Both were accorded unusual support by the Academy, but their development differed in important ways. What follows is a recounting of the development derived principally from new information found in the Dossier Marius.[2]

1. Marius' contributions are summarized in the author's *Music in the French Royal Academy of Sciences* (Princeton: Princeton University Press, 1981), 50–51.

2. In this study all references are to documents in the Dossier Marius unless otherwise indicated.

The Clavecin brisé

The earliest datable item in the Dossier Marius—indeed, the first known reference to Marius in the literature—is a certificate of approbation, dated December 18, 1699, and signed by the four organists of the *Chapelle du roy*: Guillaume-Gabriel Nivers, François Couperin, Nicolas-Antoine Lebègue, and Jean-Baptiste Buterne.[3] It certifies that they had played on and carefully examined the newly-invented folding harpsichord conceived and built by Marius, which although portable was judged to be very convenient and to produce an agreeable, mellow sound. It stresses the novelty of the invention and mentions Marius' intention to construct other, larger models of the instrument in the near future.

This testimonial must be considered somewhat unusual, since it is made jointly by four prominent musicians of the royal court in favor of a seemingly little-known instrument builder. Nevertheless, its immediate purpose is clear, for in the following month, January 16, 1700, Marius formally presented his new invention to the Academy of Sciences for its approval, calling it a *clavecin brisé portatif*.[4] In his presentation[5] he describes the instrument as composed of three parts hinged together so that it can be folded, which (he insists) does not affect its tuning. When open, the instrument resembles a common harpsichord, though smaller in size. Marius indicates that its range can be expanded by adding a fourth part to the three, and that it is strung in much the same way as an ordinary harpsichord, except that the jacks are of metal. He maintains that, in spite of its size, it is capable of being tuned to the *ton de l'opéra*, the lowest pitch standard of the time in France; this is accomplished by using strings spun of gold and silver. Finally, he describes a simple but novel invention that can be added to the instrument to permit the performer, by moving his left or right foot, to regulate the dynamic level of the sound even while performing—much as can be done on the viol or the violin, he explains, by changing the bow pressure. The Academy judged the instrument "original and highly ingenious" and issued Marius a certificate of approval on January 24, 1700.

On the strength of the Academy's approval, Marius petitioned for and

3. A facsimile of the certificate is found in Cohen, *Music in the French Royal Academy of Sciences*, pl. 2.

4. Registre des procès-verbaux de l'Académie des sciences, t. 19, fol. 11–11v; summarized in *Histoire de l'Académie royale des sciences* (1700), 157; plan later published in *Machines et inventions approuvées par l'Académie royale des sciences*, t. 1 (1735), no. 58.

5. Copies are found in Dossier Marius, and in the Archives du Musée instrumental du Conservatoire national supérieur de musique, autographe no. 9, which includes a sketch of the instrument.

received, on September 18, 1700, a letters patent from the king, granting him a 20-year *privilège* to produce *clavecins brisés et portatifs* of different sizes and with one or two keyboards. The letters patent refers to the endorsements of the Academy and of the organists of the royal chapel, but it also brings to light a conflict faced by Marius that was to plague his work and have an important impact on his production for the remainder of his life. The document speaks of fears expressed by Marius,

> that after his having undergone much expense in building several harpsichords of this type, builders in Paris and in the country would not hesitate to encourage counterfeiting and selling them, which could cause him great injury and could prevent his profiting from the fruit of his invention and of his work.[6]

The conflict was between Marius, an independent builder, and the Communauté des maîtres faiseurs d'instruments de musique, the powerful guild of instrument builders in Paris. To be sure, Marius was not alone in provoking criticism from the guild, nor was the Communauté the only French guild to assert control over independent builders. Obtaining a royal *privilège* gave builders legal protection for the exclusive production and sale of their inventions for a fixed period of years, without guild restriction; but the inventions had to be proven truly novel. The guilds did not hesitate to resort to litigation, on the slightest pretense, to prevent the granting of such a *privilège*.[7]

On November 24, 1700, two months after Marius was issued a royal *privilège* for his *clavecin brisé*, a legal judgment *(arrêt)* was pronounced requiring that, before he could register his letters patent with the parliament in Paris, he must first obtain approval from the police and from the king's deputy in the law courts at Châtelet. On May 13, 1701, such approval was granted by both the lieutenant-general of the police and the deputy for the king's solicitor-general at Châtelet. But registration of the *privilège* was to be blocked once again, for the following month, on June 21, 1701, a formal suit was filed against Marius by the Communauté des maîtres faiseurs d'instruments de musique de la ville de Paris, contending that his *clavecin brisé* was not a new invention but one modelled on an existing earlier type.

6. ". . . qu' après avoir fait beaucoup de dépenses pour faire plusieurs Clavessins de cette sorte, Les ouvriers de Paris et de la Campagne ne tachent de les inviter contrefaire et débiter ce qui lui causeroit un très grand préjudice et l'empêcheroit de profiter du fruit de son invention et de son travail." Copies of the letters patent are found in the Dossier Marius and in Archives nationales, O^1 44, fol. 402v, from which a portion is quoted in Marcelle Benoit, *Musiques de cour: Chapelle, chambre, écurie, 1661–1733* (Paris: A. et J. Picard, 1971), 171, and *Les musiciens du Roi de France* (Paris: Presses universitaires de France, 1982),116–17.

7. See Cohen, *Music in the French Royal Academy of Sciences*, 43.

It certainly appears in retrospect that Marius may have been aware of the Communauté's discontent with his instrument from the very beginning, and that the certificate secured by him in 1699 from the organists of the king's chapel may have been intended to forestall their claim before he submitted his new instrument to the Academy. At all events, to help him in the current conflict, Marius once again sought support from musicians in the royal court. A new certificate was issued on July 4, 1701, signed by Couperin, Lebègue, and Buterne as before, but with Jean-Baptiste d'Anglebert, ordinaire de la musique de chambre, replacing Nivers. The certificate of 1701 is much more pointed in its objectives than was that of 1699, and it identifies clearly the supposed model for Marius' *clavecin brisé*—an *épinette brisé* invented by "Le Sr. De la Lande l'aisné."

The document of 1701 indicates that both instruments were examined and found to have so little resemblance to one another that it was difficult to imagine that "the épinette . . . could have furnished the model for a clavecin brisé, especially in the way Marius has conceived it." The *épinette* is described as a practice instrument, having only one string per key, pitched an octave higher than the harpsichord, and producing a feeble sound. Marius' clavecin, by contrast, is referred to as triple strung and as complete "as the largest harpsichords produced in Paris." The document suggests that the secret of Marius' instrument lies in his use of strings composed of different metals, and especially of gold, which gives it a sound similar to that of a theorbo. It notes that the strings are spun, much as are gut strings on a viol, contending that this construction has never been tried before for harpsichord strings. Finally, it emphatically asserts that no builder other than Marius is known to have made a folding harpsichord.

Neither "Le Sr. De la Lande" nor his *épinette brisé* are known in the literature; but Marius himself supplies us with information on the instrument at least, in an updated sketch that survives in the Dossier Marius. For purposes of comparison, the sketch includes scale-drawings of the *épinette,* the *clavecin brisé,* and the ordinary harpsichord, showing their relative designs and sizes. The *épinette* proves to be a smaller instrument than that of Marius, constructed of two separate, though similar parts, which appear to be placed together in performance. The keyboard of each part has a range of two octaves, pitched (presumably) from *C* to *b* and *c′* to *b″*; the instrument's total range is four octaves.

Probably encouraged by support from musicians of the royal court, Marius filed a countersuit against the Communauté on July 21, 1701, in a document that refers to him as *Licencié en droit.* It was a successful countersuit, for on September 6, 1702, the solicitor-general, acting on behalf of the

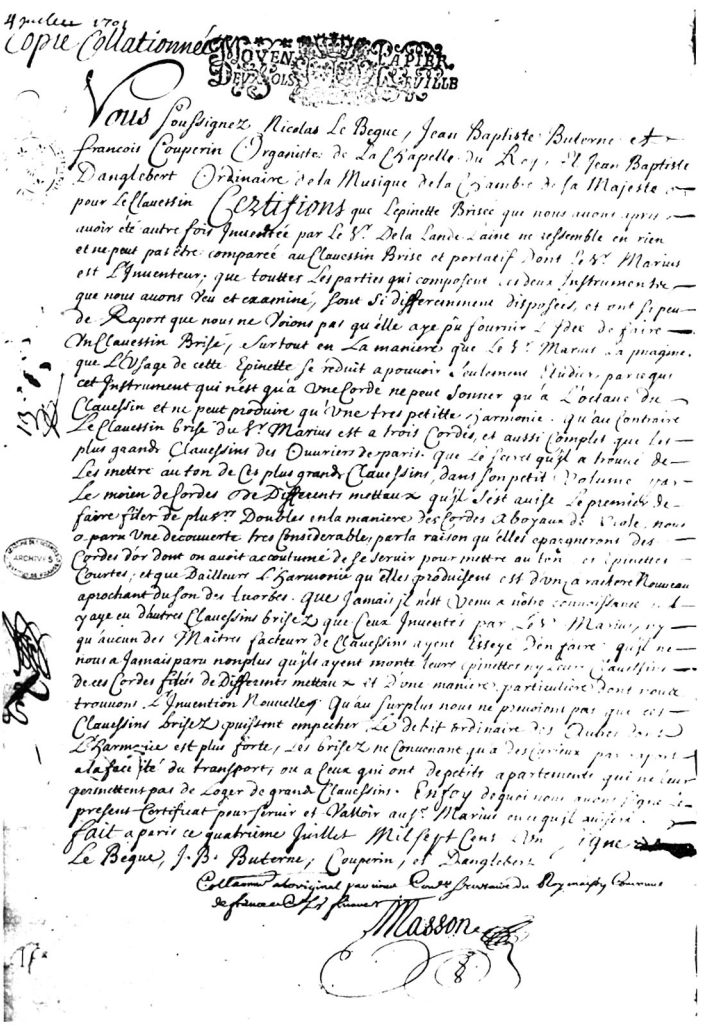

FIGURE 1. Certificate (1701) from the Dossier Marius endorsing Marius' *clavecin brisé*, signed by musicians of the royal court.

king, judged in his favor and against the Maîtres faiseurs d'instruments de musique, requiring the Communauté to pay court costs. On that very day, the letters patent for Marius' *clavecin brisé* was registered in the parliament of Paris, and later that month, on September 30, 1702, the court's judgment was formally communicated to the Communauté.

Having won the exclusive right to produce and sell his new instrument, Marius occupied himself with promoting, refining, and building *clavecins brisés* during the decade and a half that followed. A new version was shown to the Academy on December 20, 1702,[8] and the instrument received uncommon public exposure through an article in the July, 1703 issue of the *Journal de Trévoux*, where it is described in some detail.[9] That his shop was very active at the time is suggested by the relatively large number of *clavecins brisés* dating from this very period that survive.[10]

Public announcements of the instrument begin to appear at this time and continue well into the second half of the century.[11] Among drafts of advertisements in the Dossier Marius, one approved for publication on April 27, 1708 is especially informative. It describes the instrument as constructed using soundboards from old lutes and Flemish spinets, which gives it a softer and mellower sound than instruments built with ordinary soundboards. It adds that the instrument is easily tuned by anyone willing to use a simple tool designed by Marius for this purpose. Three sizes of the *clavecin brisé* are identified. The first is three feet in length, double strung, and in *ton de l'opéra*; the second is four to five feet long, triple strung, and weighs only fifteen to sixteen pounds. The third is a small practice instrument only eighteen inches long and four inches thick, which "despite its

8. Bibliothèque nationale, MS fna 5148, fol. 55.

9. *Mémoires pour l'histoire des sciences et des beaux arts* (Paris: July, 1703), 1292–93.

10. Five examples of Marius' *clavecin brisé* are known to survive; this has been confirmed in a communication from Laurence Libin, Curator of the Musical Instrument Department, the Metropolitan Museum of Art in New York. For listings of these instruments, see Donald H. Boalch, *Makers of the Harpsichord and Clavichord, 1440–1840*, second ed. (Oxford: Clarendon Press, 1974), 110; Colombe Samoyault-Verlet, *Les Facteurs de clavecins parisiens* (Paris: Société française de musicologie (Heugel et Cie.), 1966), 58–59; and Philip James, *Early Keyboard Instruments* (London: Tabard Press, Ltd., 1970), 126. See also Sybil Marcuse, *A Survey of Musical Instruments* (New York: Harper and Row, 1975), 270; and Marcelle Benoit, *Versailles et les musiciens du Roi, 1661–1733* (Paris: A. et J. Picard, 1971), 262. See also Helmut K. H. Lange, "Das Clavecin brisé von Jean Marius in der Berliner Sammlung und die Schlick-Stimmung," *Die Musikforschung* 31 (1978): 57–79. In his study of Italian folding harpsichords now in preparation (of which a pre-publication copy was kindly placed at my disposal), Mr. Libin demonstrates that other surviving examples of the instrument may derive from early Italian models, rather than from Marius' invention.

11. See, for example, the listing in *Annonces, affiches, et avis divers* (Paris, 1765), 253 and 723.

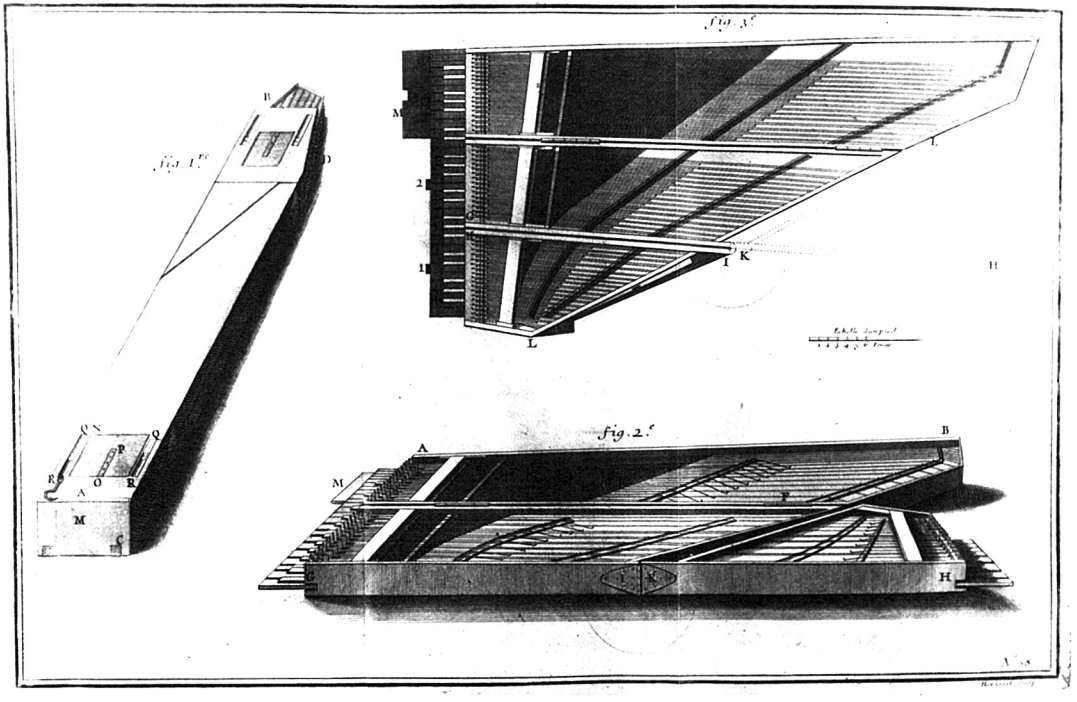

FIGURE 2. Engraving of the *clavecin brisé* (1700), from *Machines et inventions* 1 (1735), no. 58.

small size, has a uniform key touch and does not suffer the effects of humidity, even when not played for a long period of time." The advertisement lists Marius' address in Paris on rue de Richelieu.

On April 8, 1713, Marius filed a petition seeking an interpretive judgment of the letters patent accorded him by the king in 1700 for the privilege of making *clavecins brisés et portatifs.* In it, he seeks permission to develop additional types of the instrument not specified in the original *privilège,* while remaining bound to the time restriction of that *privilège.* There is no indication of the outcome of this petition in surviving documents, which suggests that it was denied.

The Clavecin à maillets

Even while perfecting his *clavecin brisé,* Marius continued to introduce novel additions to the ordinary harpsichord. His presentation to the Academy on March 17, 1708, concerning a simplified procedure for installing jacks in a harpsichord without using registers, was well received;[12] and on February 21, 1714, a letter from Marius to Sauveur that described harpsichord registration by means of a foot pedal, simulating the effect created by two keyboards, was read to the Academy.[13] But it was on March 21, 1716, that Marius brought to the Academy an innovation that was to occupy his principal attention for the next several years: a change in the means of sounding a harpsichord—the substitution of a hammer action for the plucking mechanism.[14] Two such actions presented by Marius were assigned to a committee for review, and a report was read on May 9, 1716.[15]

In the report, one action is described as having hammers (*maillets*) entirely replacing the jacks, and the other as providing a portable hammer-action keyboard that can be placed on an existing instrument, giving the harpsichordist a choice of hammer or quill action during performance. The report notes that the new actions avoid the perpetual repairs occasioned by the use of quills on harpsichords, and that the quality of sound produced by the hammer actions is stronger and more pleasant than that produced by jacks. Finally, it indicates that the new actions provide the performer with a means of controlling the dynamic level of tones, and therefore expression in music, not available to keyboard performers in the past.

12. Registre, t. 27, fol. 88v; Bibliothèque nationale, MS fna 5148, fol. 85.

13. Académie des sciences, Plumitif de 1714, par Réaumur.

14. Registre, t. 35, fol. 100.

15. Registre, t. 35, fols. 145v–146; summarized in *Histoire de l'Académie royale des sciences* (1716), 77.

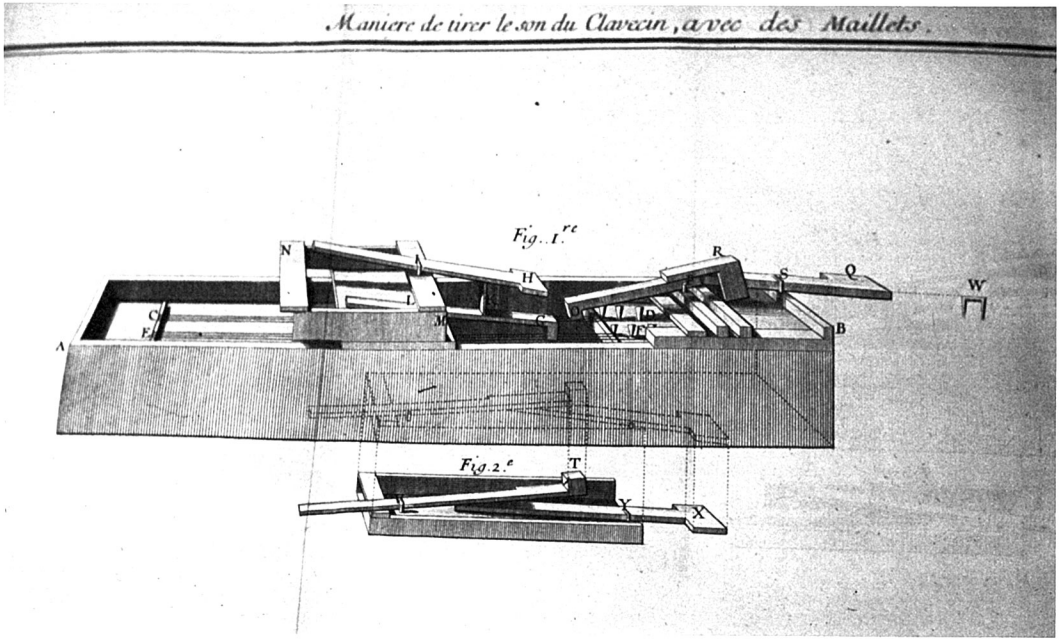

FIGURE 3. Engraving of one of several hammer actions proposed by Marius for the *clavecin à maillets* (1716), from *Machines et inventions* 3 (1735), no. 173.

The new hammer actions received the Academy's approval, and a formal certificate of approbation was issued on May 14, 1716.

The following month, on June 20, 1716, Marius presented two additional new hammer actions to the Academy.[16] In his presentation, entitled "Suitte d'inventions . . . pour faire sonner les clavecins sans plumes," Marius speaks further of his new principle of sounding a harpsichord string by means of a hammer rather than a jack, and of the various actions he has devised to effect this. He indicates that his new actions can activate three strings at once from beneath, either by replacing the jack with a small wooden bar, or by attaching to the jack a simple wooden bridge activated by means of a register.

Marius understood that his novel actions produced a new instrument, requiring a new name. On a small scratch sheet in the Dossier Marius he considers two versions of three names, all derived from Greek and all signifying 'hammer': *Sphyrique* (or *Sphyrium*), *Rhasterique* (or *Rhasterium*), and *Typadique* (or *Typadium*). He expresses preference for *Typadique*, considering it shorter, easier to pronounce, and closer to French expression than the others.

The committee report on the new actions, presented on June 23, 1716, approves them as accomplishing the same goals as actions submitted earlier by Marius, but being simpler in construction.[17] Models of the new actions were placed in the Academy's instrument collection on June 25,[18] and again on August 22.[19]

Supported by academic approbation, Marius successfully petitioned the king for a letters patent covering the new hammer action. Issued on July 14, 1716, it granted him a twenty-year *privilège* for the construction and sale of "clavecins, épinettes, [et] claviers à maillets." But as with the *clavecin brisé*, so with the *clavecin à maillets*: it was contested. The following year, on August 31, 1717, in consequence of an appeal filed against the *privilège* by the Communauté, an *arrêt* was issued ordering that certain actions be taken

16. Registre, t. 35, fol. 195.

17. Registre, t. 35, fols. 197v–198; summarized in *Histoire de l'Académie royale des sciences* (1716), 77.

18. Académie des sciences, Plumitif de 1716. A document accepting the new actions into the collection, signed by the Academy's treasurer, Couplet, resides in "Dossier 1716" at the Academy.

19. Registre, t. 36, fol. 5, indicates that one of the models was brought into the Academy on January 13, 1717, for a performance by "M. Landrieu" (the name is spelled "l'Andrieux" and "l'Andieux" in Plumitif de 1717), who cannot be positively identified.

before the *privilège* could be registered. However, it included additional, unusual provisions:[20]

> The court, having provided for the registration of this letters patent, proclaims that the letters [patent] shall be sent to the lieutenant-general of the police at Châtelet and to the deputy of the king's solicitor-general at the same location, so that they may offer their opinions on it, and to the Communauté des faiseurs d'instruments de musique of this city of Paris either to give it their approval, or else to indicate what in it appears of value to them, and that the grantee will be enjoined to make available one of his harpsichords together with one of his "claviers à maillets" to Père Sébastien and Terrasson of the Royal Academy of Sciences, so that they may acquaint themselves with them and offer their opinion as to whether they contain some invention that is new and different from other, ordinary harpsichords.

It is unclear what role, if any, the Communauté played in determining the provisions of this document. What is clear is that it placed in front of Marius several difficult legal barriers that he would have to cross before the *privilège* to his new invention could be registered—a necessary prerequisite to its development for the public market. Available sources are silent as to whether opinions on this matter were, in fact, submitted, either by the police, or by the solicitor-general at Châtelet, or even by the Communauté. And while the same can be said of Sébastien and Terrasson of the Academy, we know at least that they appear to have worked hard at putting together a response to their charge. Several drafts of an *avis* (formal opinion) prepared by them survive in the Dossier Marius, as do changes in these drafts suggested by Marius, whom they obviously consulted in preparing their opinion.

The various drafts of the *avis* deal, in greater or lesser detail, with the different hammer actions designed by Marius, describing and comparing their constructions and advantages. Compared with that of the ordinary harpsichord, the mechanisms of these actions are simpler to construct,

20. "La Cour ayant pourvu à l'enregistrement desd. lettres ordonne que lesd. lettres seront communiquées au lieutenant général de police du Châtelet et au substitut du procureur général du Roy aud. siège pour donner sur icelles leur advis et à la Communauté des faiseurs d'Instruments de musique de cette ville de Paris pour y donner leur consentement ou y dire autrement ce qui bon leur semblera, et que l'impétrant sera tenu de représenter un de ses clavessins ensemble un de ses claviers à maillets au Père Sébastien et à Terrasson, de l'Académie royalle des Sciences, pour connoistre et donner leur advis s'il y a quelque invention nouvelle et différente des autres clavessins ordinaires." The document is found in the Archives nationales, X^{1b} 8899; a transcription is given in Samoyault-Verlet, *Les facteurs de clavecins parisiens*, document no. 17.

more efficient to operate, and less susceptible to the effects of changes in humidity and weather, according to Sébastien and Terrasson; they also are not subject to the continuous repairs required by the jacks and quills of harpsichords. The sound is described as mellower and fuller than that of the harpsichord, lacking its characteristic clicking sound (*cliquetis*) and resembling the quality of gut rather than metal strings. The force of the hammers on the strings is controlled by a register activated by a simple lever. The new construction allows the hammer to fall away from the string after striking, and the string vibrates as long as the finger touches the key. This is most important, since it provides the performer with the direct finger control over dynamics that imparts to music its soul and expressive quality. The *avis* concludes that the *clavecin à maillets* is not to be considered an altered harpsichord, but rather an entirely new instrument, both in its sound and in its construction.

Among the lists of changes proposed by Marius for drafts of the *avis* in the Dossier Marius, there is one entitled "Observations sur l'Avis" that reflects the opposition of the Communauté to his new instrument. In it, he suggests that his four different hammer actions be presented not as four versions of one invention, but rather as four different inventions,

> for if the artisans oppose the registration of my letters patent, as they ordinarily do, their defense will have less strength contesting several inventions, than if they contested only one.[21]

The letters patent for Marius' new hammer action was never registered in parliament, and while available official documents do not specify the reason for this, a statement found in the Dossier Marius does. It is a bitter statement, charged with emotion, in Marius' hand. It reflects Marius' reaction to the rejection of his hammer action as a new invention because (it was declared) the idea had been conceived earlier by a foreign builder. Pertinent portions of the statement follow:[22]

21. ". . . parce que si les artisants s'oposent à l'enregistrement de mes lettres pattentes comme il arrive ordinairement, leurs défenses auront moins de force en attaquant plusieurs inventions que s'ils n'en attaquoient qu'une."

22. The document begins in first person and changes to third person partway through:

"Je n'ay point dans le Royaume de Compétition qui me dispute l'honneur de l'invention dont je doits en ouïr. Si on n'en a jamais vu en France si cela n'est point en usage, je suis censé en être l'Inventeur. Ce n'est point un Imposture, et je ne puis être à censé de plagiat. Et quand bien même il se rencontreroit quelque chose qui y aye quelque raport dans les pays étrangers, on ne pouvoit dire autre chose si non que ce sont 2. auteurs qui se sont rencontrés. Ils n'en sont pas moins l'un et l'autre inventeurs originaux. . . .

"Son privilège renferme 6. manières de fraper les cordes. Il nie que même qu'il y en aye

> Nothing I have heard in the realm of competition denies me the honor of the invention. If it has never been seen in France, if it is not at all in use, [then] I am deemed to be its inventor. It is in no way a deception, and I can not be accused of plagiarism. And even when a similar thing is encountered in a foreign country, one can say nothing else but that [the work of] two originators has coincided. They are no less, neither one nor the other, original inventors. . . .
>
> His [Marius'] *privilège* comprises six manners of striking the strings. He maintains that even if there are similar ones in foreign countries, the similarity encountered in these foreign inventions is so slight that among seventy savants who have been examining his invention for two years [i.e., the Academy], not one is able to deny him the honor of being its author. . . .
>
> Since inventions in the arts enrich and honor a state, it is not natural to abandon to strangers the honor of an invention on the pretext of some similarity. . . . Not only has no author mentioned anything similar to it in any book on earlier discoveries, but also no one in France has ever produced it. And if seventy academicians have no knowledge of it, one must assume that nothing has appeared of this type prior to Marius.

Although details are lacking, this document does make clear that Marius was confronted with earlier foreign experiments in hammer-action keyboards, and accused of plagiarism. What experiments these were can only be conjectured. Certainly, Bartolomeo Cristofori had produced examples of the type in Italy by this time; and despite Marius' statement about the lack of published notices on the hammer action, an early description of Cristofori's work had been published by Scipione Maffei in volume five (1711) of the *Giornale de'letterati d'Italia,* a journal known in France.[23] In any case, the rejection of his request to have his *privilège* registered with parliament effectively terminated Marius' work on the early piano action.

Marius' statement, which through internal evidence can be dated 1718, is his final word on the *clavecin à maillets,* and only brief references to the instrument are found after this time. In a letter from Bordeaux, dated

de pareilles dans les pays étrangers, il est si peu vraisemblable qu'il aye même rencontré avec les Inventions des étrangers, que de 70. savants qui examinent depuis 2. ans ces Inventions, personne n'a pû lui disputer l'honneur d'en être l'auteur. . . .

"Comme les inventions dans les arts en richessent et honorent une république, il n'est pas naturel d'abandonner aux étrangers l'honneur d'une invention sous prétexte de quelques resemblances. . . . Non seulement aucune auteur n'ont fait mention dans aucun livre d'avances découvertes qui ait raport à cela, mais jamais personne en France l'en ont produit. Et si 70. académiciens n'en ont en aucune connaissance on présumera qu'il n'a rien paru dans ce genre avant ce que le S.M. a montré."

23. On Cristofori's work and the early development of the piano action, see *inter alia,* Mario Fabbri, "Il primo 'pianoforte' di Bartolomeo Cristofori," *Chigiana* 21 (1964):162–72, and Edwin M. Good, *Giraffes, Black Dragons, and Other Pianos* (Stanford: Stanford University Press, 1982), chap. 2.

April 1, 1718 and addressed to Marius in Paris, Caupos, a lawyer and amateur musician affiliated with the Academy of Bordeaux, seeks to replace his *clavecin brisé* with a new *clavecin à maillets*. It is not clear how Caupos heard of the new instrument, since Marius is not known to have built models of it for public sale. However, it is possible that Marius may have announced his intention to do so after having received his royal letters patent, but prior to the *arrêt* that blocked registration of his *privilège*. A document in the Dossier Marius provides evidence of just such an announcement. It is a draft of an advertisement for the new hammer-action keyboard, written some six months after its invention (that is, in September, 1716); it refers to the royal *privilège* issued by the king, and invites orders for the instrument from the general public.

On July 9, 1718, Marius was appointed adjunct mechanician at the Academy, and his name begins to appear regularly among members present at its sessions.[24] His few presentations to the Academy after this date concern the design of a new water pump (December 23, 1719)[25] and descriptions of a natural light phenomenon (January 13 and March 9, 1720).[26] He died on April 6, 1720, and the vacant post of adjunct mechanician created by his death was filled the following year.[27] Only after Marius' death were plans of his hammer actions edited and published in volume 3 (1735) of the Academy's *Machines et inventions*.[28]

* * *

The Dossier Marius at the Paris Academy of Sciences provides a means of better understanding the work and position of Jean Marius in the evolution of stringed keyboard instruments in France. His two most important contributions to this evolution, the *clavecin brisé* and the *clavecin à maillets*, followed a similar pattern of development, and both faced a legal challenge by the Parisian guild of instrument makers. Marius was successful at defeating the challenge to the former innovation, but failed in the case of the latter one. Subsequently, he was able to produce and market examples of

24. Registre, t. 37, fol. 183. Earlier, Marius had been denied an appointment as *Mécanicien associé*; see Registre, t. 37, fols. 147v and 149.

25. Registre, t. 38, fol. 313; a draft of the paper is in Dossier Marius.

26. Registre, t. 39, fols. 9 and 76.

27. Registre, t. 39, fol. 115; and t. 40, fol. 225.

28. Edited by Jean-Gaffin Gallon, nos. 172–75. Working drawings for two of the actions are found in Bibliothèque des arts et métiers, petit folio B8, nos. 84 and 110 (dated 1731–32). Modern descriptions of these actions are found, *inter alia*, in Rosamond E. M. Harding, *The Piano-Forte*, 2d ed. (Old Woking, Surrey: Gresham Books, 1978), 12–15; and Marcuse, *A Survey of Musical Instruments*, 321–22.

the *clavecin brisé,* and the instrument became known throughout Europe. The *clavecin à maillets,* on the other hand, was stillborn. Marius abandoned interest in the invention, and French builders who followed him remained wary of pursuing the principle of the hammer-action keyboard for at least another generation. One can't help but believe that the history of the piano in France may well have been different had Marius won his judgment against the guild and received the support and encouragement he sought.

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Appendix

Documents pertaining to the Clavecin brisé *and the* Clavecin à maillets *in the Dossier Marius*[29]

Clavecin brisé

1. Certificate of approbation by organists of the royal chapel, dated in Paris, December 18, 1699.

2. "Copie de la description des claviers brisés donnée à l'Académie Royale des Sciences," dated January 16, 1700; certificate of approbation by the Academy, dated in Paris, January 24, 1700.

3. Certificate of approbation by the musicians of the royal court, dated in Paris, July 4, 1701.

4. Letters patent, issued in Versailles, September 18, 1700; registration in parliament, executed in Paris, September 6, 1702.

5. Abbreviated copy of letters patent, dated July 4, 1716.

6. "Plan géométrique du grand clavecin à l'ordinaire, . . . Trois plans géométriques du clavecin brisé . . . [et l']épinette du Sr. de la Lande [1701]."

7. "Copie par extrait de l'arrêt contradictoire d'enregistrement des let-

29. The items listed cover less than half the contents of the dossier, and are only those that pertain directly to the *clavecin brisé* and the *clavecin à maillets.*

tres pattentes du privilège accordé au Sr. Marius," executed in parliament, September 6, 1702.

8. "Arrêt contradictoire," dated September 7, 1702, following registration of the "Privilège des clavecins portatifs"; copied from the original on July 4, 1716.

9. Drafts of three advertisements, two undated, one approved for publication April 27, 1708.

10. "Requête et pièces, pour Jean Marius, Demande un arrêt en interprétation des lettres pattentes," dated April 8, 1713; also, an undated working copy of this document.

Clavecin à maillets

1. "Extrait des Registres de l'Académie Royale des Sciences du 9. May 1716"; certificate of approbation by the Academy, dated in Paris, May 14, 1716; receipt for models deposited in the Observatoire, dated in Paris, August 22, 1716.

2. "Suitte d'inventions tirées du frapement pour faire sonner les clavecins sans plumes [June 20, 1716]."

3. Draft of a brief description of the new instrument (ca. 1716).

4. Draft of names for the new instrument (ca. 1716).

5. Draft of an advertisement (September 1716).

6. Drafts of four different versions of the "Avis" by Père Sébastien and Terrasson (ca. 1717).

7. Two versions of "Observations sur l'Avis" by Marius (ca. 1717).

8. Letter to Marius in Paris, from Caupos, dated in Bordeaux, April 1, 1718.

9. Statement by Marius contesting the decision on the *privilège* (ca. 1718).