

THE PIANOFORTE AND ITS MUSIC

II.

Medieval Precursors of the Modern Instrument—Clavichord and Harpsichord—Invention of the Pianoforte—Rival Claimants.

(Copyright, 1910, by H. E. Krehbiel.)

We have now before us the primary form of the instrument which, despite its simplicity, contested longest for supremacy with the pianoforte after the latter had entered the arena. The mechanism of the monochord of the eleventh century was to all intents and purposes the mechanism of the clavichord (*clavis*, key; *chorda*, a string), which might still have been

with the front face of the jack by a delicate spring of wire or hog's bristle. The tongue could move backward but not forward, but, the quill being pointed a little upward, when it fell back upon the string the spring gave way, the tongue moved back a bit and the quill regained its position below the string. If you will read Shakespeare's 128th sonnet it will help you to keep in mind the action of these jacks, though at times the poet's description seems to confound them with the keys.

Two hundred years ago the perfection of instruments of the clavier class—that is, instruments with strings played upon by manipulation of keys—was thought to have been reached. This, at least, is the recorded judgment of writers of that period. From a me-

composer and player, the deficiencies of virginal, spinet and harpsichord became manifest. Even the most elaborate and perfect of the quilled machines, the harpsichord, was a soulless thing. It was impossible to vary the quantity and quality of its tone sufficiently to make it an expressive instrument, and it is very significant to this study in all its aspects that the greatest musicians of two centuries ago, while they were obliged to compose for the harpsichord and give it their preference in the concert room, nevertheless, as we know from Bach's example (but of that more anon), used the crude and simpler clavichord as the medium of their private communings with the muse.

Imperfect and weak as it was, the clavichord had yet the capacity in some degree to augment and diminish the tone at the will of the player. The tone of the other instruments was not ineptly described as "a scratch with a note at the end of it." Efforts unceasing were made to increase and give variety to the tone, but in vain. The defect was fundamental. The earliest attempts at improvement seem to have been directed to the jacks. The quill points had an unfortunate habit of wearing out rapidly, and when a player sat down to his instrument in a fine frenzy of inspiration he sometimes had

genuity which prompted them spent largely in the creation of fantastic contrivances whose worthlessness is demonstrated by the fact that they have long since ceased to attract the attention of musicians. Devices which enabled the harpsichord player to imitate the voices of the flute, trumpet, bagpipe, oboe and fife, the rattle of drums and the admired by the idle and curious, but to the serious musician they were mere mechanical curiosities.

Several of the contrivances, however, afterward utilized in the pianoforte for the ends. The shifting of the keyboard by means of a pedal which is now used in the pianoforte to divert the blow of the hammer



A HARPSICHORD BY HANS RUCKERS IN THE MUSEUM OF THE PARIS CONSERVATOIRE. (Originally it had four octaves.)

seen occasionally in the music loving houses of Germany in the middle of the nineteenth century.

The key was a simple lever, one end of which received the pressure of the finger, while the other, extending under the strings of the instrument, was armed with a bit of metal placed upright and at right angles with the string. When the key was pressed down the blow dealt by this bit of metal, called a "tangent," set the string to vibrating, and at the same time measured off the segment of the string which had to vibrate to produce the desired tone. The tangent acted as a bridge, and had to be held against the string so long as the tone was to continue. On its release the tone was immediately muffled, or damped, by strips of cloth which were intertwined with the wires at one end.

Down to the end of the sixteenth century, though the strings were multiplied, the name monochord was still used, and, though the range of the instrument had reached twenty-four notes, the strings were still tuned in unison. Gradually, however, the strings for the acuter tones were shortened by a bridge placed diagonally across the sound board, this contrivance being borrowed, it is said, from another keyed instrument called the clavicymbal, which was, in effect, a triangular system of strings to which a mechanical device had been applied which plucked or snapped the strings, somewhat in imitation of a harp player.

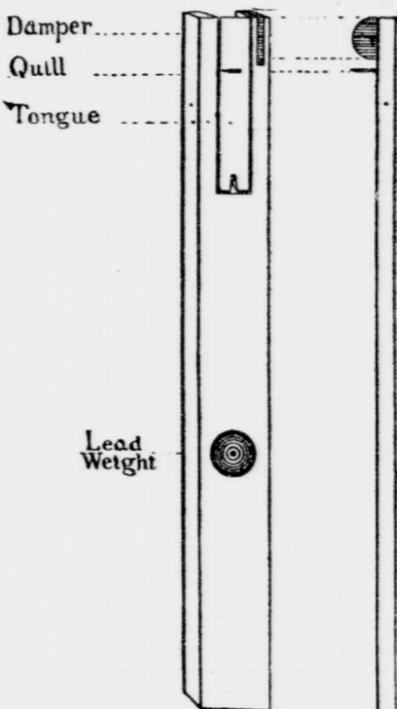
It is to instruments of this class that I now address myself, for it was for them that the earliest music was written which has survived in the repertory of the pianist, and it was upon them that the predecessors of the great virtuosi about whom I shall speak played. But it would be idle to attempt to explain all the differences between them. They were a numerous tribe and the members bore numerous names, of which those that have endured longest in the literature of music, and which, indeed, were spoken by our grandparents as glibly as we say piano now, were spinet and harpsichord. We shall be spared a lot of curious and vain brain cudgelling if we look upon these names, as also clavicytherium, clavicebalo, gravicebalo, épinette and virginal, as no more than designations in vogue at different times or in different countries, or at the most as names standing for variations in shape or structure of the instrument which filled the place before the nineteenth century that the pianoforte does now.

In all the instruments of this class the strings were plucked with tiny points of quill (generally, though the material varied) held in bits of wood called "jacks," which moved freely in slots piercing the sound board and rested upon one end of the key levers. The quill was a tiny thing, not more than a third of an inch in length, thrust through a narrow tongue which moved on a pivot through a slot in the upper part of the jack. When at rest the quill point lay a trifle below the string and at an angle with it. The key being pressed down, the jack sprang upward, and the quill in passing twanged the string. When the key was released the jack dropped back to its place and the quill slipped under the string, ready for a repetition of the movement. To enable it to do this was the mission of the little tongue in which it was set. This was held in place flush



"THE MUSIC LESSON." (From a painting by Gabriel Metz.)

mechanical point of view, indeed, some of these instruments were marvels; but as music became less and less mere pretty play of sounds, and gave voice more and more to the feelings of



FRONT AND SIDE VIEWS OF A HARPSICHORD JACK.

to stop and put in new quills as well as to tune it. So substitutes for goose and crow quills were sought for, and fish bone, stiff cloth, leather, metal and other materials were tried. The principle, however, always remained the same, and the defect was never remedied: the jacks twanged the strings, and twanged them with uniform loudness. For the sake of variety in tonal effects dampers of various kinds were also invented to check and modify the vibration of the strings after they had been twanged; and, later, strings were added which could be plucked simultaneously with the original set by an additional row of jacks. These added strings were first tuned in unison with the others, so that just twice the amount of tone resulted from their use, but Ruckers, of Antwerp, the most famous harpsichord builder of his time, conceived the idea of adding an extra system of strings tuned in the octave above, which could be coupled to the original system at will. The front of the harpsichord, which was the instrument to which most of these improvements were attached, came in time to look something like the console of an organ, with its draw stops, pedals and knee swells.

The builders also used different kinds of metal in their strings for the sake of added effects, and since the quantity of tone could not be varied by the touch of the player, the swell box idea was borrowed from the organ, the entire sound board of the instrument being covered with a series of shutters, like the so-called Venetian blinds, which could be opened and closed by the player by pressure of his foot. All these mechanical contrivances were little better than makeshifts. They did not go to the real seat of the difficulty, and the inventive in-

A GROUP OF CLAVICHORD KEYS (From an instrument owned by the author)

from one or two of the unison strings (*corda*, or the "soft pedal," as it is commonly called) was first applied to the harpsichord for the purpose of transposition. Cloth dampers which were used to modify the tone of the harpsichord are interposed between the hammers and the strings of a square pianoforte for soft effects.

For many decades builders of spinets and harpsichords strove—their successors, indeed, are still striving—to overcome a deficiency which is inherent in the nature of the instrument. I have said elsewhere in my book, "How to Listen to Music" (page 158), despite all the learning and ingenuity which have been expended on its perfection, the pianoforte can be only feebly to approximate that sustained and of musical utterance which is the soul of song and finds its loftiest exemplification in singing.

To give out a melody perfectly presupposes the capacity to sustain tones without loss of power or quality, to bind them together and sometimes to intensify their dynamic expressive force while they sound. The pianoforte, like that of all its precursors, tends to die the moment it is created. Discoveries in the field of acoustics which have been made within the last century, and the introduction of the hammer action in place of jacks, have wrought an improvement in this respect, but the difficulty has not been overcome and cannot be within the family to which keyed instruments which we have been considering belong. A string plucked or struck in order to produce a sound is at once beyond the control of the player. To keep it within control the string must be rubbed. It is because of the importance of this truth assumed by the mind of one of the inventors of the pianoforte and his experiments with an instrument which combined the dulcimer and harp principles that I shall tell the story of the German inventor Schröter, at greater length than that of the Frenchman, Marius, or the Italian, Cristoforo. To each of these I purpose to leave the credit of being an isolated inventor, though they worked at different times and brought to their inventions in the reverse order of the which I have presented their names.

One of the devices invented for the purpose of prolonging the tone of the harpsichord was incorporated in an instrument called "Cristoforo's work," which came from Nuremberg, famous for its inventions through many centuries. Properly speaking, it did not belong to the instruments of the clavier class at all, for, though it utilized tense strings, a sound board and its fundamental principle was borrowed from the viol. It was, in fact, a highly developed aristocratic hurdy-gurdy. In it, by means of treadles, wheels covered with leather and coated with powdered resin were made to revolve, and while revolving were pressed against the strings by manipulation of the keys.

Christopher Gottlieb Schröter was a musician.

Continued on fifth page.

LONG SANG TI CHINESE CURIO CO. 293 Fifth Ave., bet. 30th and 31st, New York. Their booklet (T), illustrating the history of Art and stones to be worn for good luck on days, now ready.