

The Four Masters of Classical Violin Building

(BY ROBERT ALTON IN THE ETU DE.)

Several types of violins are accepted and worked upon by most modern builders. Occasionally a maker will change his pattern and work for a time upon a model different from the one he has been following. But, generally speaking, modern violin makers restrict themselves to one type only. As these various types represent widely different ideas in violin construction, it is, perhaps, not inopportune to consider a few, and to examine the characteristics of tone produced by each.

The masters of classical violin building are four, viz., Amati, Stradivari, Guarnerius and Stainer. The types of violins from these four masters are quite distinct, and although there are minor variations in the models of each maker, during the progress of his career, yet the type of violin is distinct and characteristic.

AMATI THE OLDEST TYPE.

The oldest type of these four masters is the Amati, and is the pattern followed, with minor alterations, throughout his career by Nicola Amati, the most talented builder of that talented family. With few exceptions, the Amati type of violin is of small pattern, with corners drawn out and somewhat pronounced. The archings of the Amati family generally are high, and although Nicola Amati flattened the model somewhat, yet the modeling still remained higher than that of Stradivari, who served his apprenticeship under Nicola Amati.

The violin built by Stradivari is the flattest of all four models. The sound-holes lean over at the top towards the center of the instrument to a greater extent than in the Amati type, while the center C's, or inner bouts, are not so circular in character. Stradivari gradually felt his way towards the flat type of instrument, while at the same time he enlarged the model.

The corners became broader and somewhat more obtuse in character. The Strad model, with minor alterations, remains to this day the pattern of thousands of fiddle makers.

GUARNERIUS WITH THE PRONOUNCED ARCH.

The Guarnerius model is quite distinct from either Amati or Stradivari. The rise in the center of the arch is generally not less than three-quarters of an inch, and falls away at each end in a bold sweep to the edges, top and bottom. This pronounced arch has the effect of increasing the air-space to some extent, especially in view of the fact that the sweep of the lower bouts of the instrument in the Guarnerius pattern is of a bolder character than that of either Stradivari or Amati. The center C's in the Guarnerius model rapidly spread outward from the middle part of the C's to the lower corners. The sound-holes are long and pointed and set far apart on the belly.

The Stainer type is of a more tubby character than either of the others. The pattern is generally small, yet, owing to the bulging of the arching in all directions, the air-space is not reduced appreciably. The scrolls of all four makers, although generally different, do not enter into our calculations here, which are chiefly concerned with the variety of tone produced by the various types of body.

TYPES OF TONE.

The Amati type of violin does not produce the strength of tone obtained from the other patterns. It is sweet, and somewhat piercing in character. The tone of the Stradivari model, though rounder in character, and more full than that of Amati, is still on the side of keenness rather than roundness, but the model and outline leave nothing to be desired.

The Guarnerius and Stainer models, on the other hand, produce tone of a rounder and more mellow type, but the piercing quality is not so pronounced, and tends rather to the clarinet tone. It must be remembered that all these types of sound can be altered to some extent, by adjustment. For instance, a heavy, or comparatively heavy bridge post will modify the piercing quality of soft material, and somewhat thick post will modify the piercing quality of the Amati and Stradivari types, while vice versa, the mellow, round tone of Guarnerius and Stainer may be made thinner and more flute-like by adjustment with high bridge and thin sound-post. Lowering or increasing the height of the bridge will also affect tone.

To prove the model, a reversed tone in the manner indicated above, the author built a violin with Stradivari outline, Guarnerius arching, and also slightly increased the depth of the ribs. This violin was also fitted with a bridge one and three-eighths inches in depth, generally considered the maximum. The resultant tone was round, powerful, mellow and not a scratch or piercing note in the fiddle. In previous instruments, of both Stradivari and Guarnerius models, the tone was considerably thinner and more flute-like; and, in fact, after playing on the violin built on the lines indicated, the tone of the other

EFFECT OF TEMPERATURE ON PITCH OF WIND INSTRUMENTS

BY W. M. SHARP, IN THE METRONOME

It is well known to musicians that the pitch of a wind instrument rises when it is warmed by the breath. This can be readily explained and the amount necessary to lengthen the instrument in order to maintain the same pitch can easily be calculated.

A musical tone is produced by a vibrating body which causes alternate condensations and rarefactions in the surrounding air. These condensations and rarefactions are called sound waves, and travel faster in warm air than in cool air. Careful experiments have shown that sound travels 1090.6 feet per second at the freezing point (32 degrees Fahrenheit), and the increase in velocity is 12.3 inches per second for each rise of one degree in temperature. Therefore, at a temperature of 50 degrees, which is 18 degrees above freezing, the velocity of sound would be 1110.5 feet per second, while at 78 degrees the velocity would be 1141.6 feet per second.

Now, the fundamental (pedal) tone of the cornet in A is the A written in first space in bass clef. This tone at standard pitch is produced by 109 vibrations per second. If this tone is sounded when the temperature is 50 degrees the front of the first wave will be 1110.5 feet away from the instrument at the end of one second and the intervening space will be divided into 109 waves, since there will have been that many vibrations in that second. Thus the length of each wave will be 1110.5 feet divided by 109, or 10.18 feet. This is 12.3 inches. At 78 degrees the wave length would be 1141.6 feet divided by 109, or 10.47 inches.

The fundamental tone produced by a tube will have a wave length of twice the length of the tube. This is neglecting a small correction depending on the diameter of the tubing and not affected by the temperature. Therefore, when the average temperature of the air column in a cornet is 50 degrees the length of the cornet to produce a standard pitch must be 12.3 inches divided by 2, or 6.12 (nearly). If the temperature is 78 degrees the length must be 10.47 inches divided by 2, or 5.23 inches. In other words, the cornet would have been lengthened (.623-.612) 1.6 inches. This would be done by drawing the tuning slide .8 of an inch. This would be done by drawing the tuning slide .8 of an inch for each rise of one degree in temperature.

Of course, the expansion of the metal in the cornet will tend to lower the pitch of the instrument as the temperature increases, but this amount is very small. The rate of expansion of air is very much greater in brass, so the pitch is actually raised.

The type was inalterable, and this in spite of the fact that the previously mentioned Guarnerius type especially was much admired.

A COMBINATION OF QUALITIES.

In this connection it is interesting to note the remarks of Mr. Honeyman, who states that the perfect violin "lay somewhere between Guarnerius, Mazzini and Gasparo da Salo." The two latter makers built the same type of instrument, therefore the statement resolves itself into this—that the perfect type of violin is somewhere between Guarnerius and Gasparo da Salo. As the chief difference in model between Gasparo da Salo and Stradivari is in the size of the instrument, and in the depth of the ribs, it seems feasible to suppose that, granting Honeyman's dictum to be correct, it is worth while to follow Stradivari for outline, Guarnerius for arching, and to increase the depth of ribs of the manner of Gasparo da Salo (the originator of the fiddle as we know it), whose instruments are described by Heron-Allen as "melancholy in character."

In the instrument built by the author on these lines, the tone is certainly rounder and fuller, and carries very well, indeed, of the flute-like character there is little evidence, but the loss of this is more than compensated for by the mellow roundness of the tone. To those makers who desire this type of tone, the experiment is worth a trial. Once a violin is built on these lines the maker can then determine whether or not the character of sound is suitable for his purpose. The ordinary Guarnerius model will possibly suit many makers and players better than either Stradivari or composite violin model, at least for the quality. The Guarneri outline, however, is not preferred before Stradivari, and many makers prefer to build Stradivari models, and accept of their graceful appearance alone. Amati, nowadays, is seldom followed, on account of the small volume of tone, when compared with the other patterns.

THE VIOLIN OF THE FUTURE.

The building of violins on the lines of Stainer is, with many modern makers, quite overdone, and the bulging of the plates carried to excess. The writer was recently examining an undoubtedly genuine example of Jacobus Stainer, and the outstanding feature of the arching was its graceful appearance. This is more than can be said for many models. The swelling or rise of the plates in Stainer violins is carried with three inches of the ends, top and bottom, from which points it gradually falls away into the hollowing round edges. On the cheeks of the fiddle, back and front, the swelling is carried well beyond the level of the center, or long arching, towards the edges, the violin, as seen from a little distance, is very graceful where it falls away from the body, as in the case of the long arching. But the usual bulging cheeks seen in copies are not at all apparent in the genuine Stainer, and in appearance, although differing widely from the other models. A feature of the violin in question worth mentioning is the oval curls of the scroll, and the oval "eye," instead of the usual circular style.

MR. PUGSELY DECLINES.

ST. JOHN, N.B., Oct. 26.—Hon. Wm. Pugseley, lieutenant-governor of the province, has declined the nomination tendered him by the Liberal convention of St. John-Albert.

EDMUND BURKE TALKS OF EARLY STUDENT DAYS

Enjoys His Holidays on the Coast of Spain.

Edmund Burke says that he was intended for the bar, but music was always a pleasure to him and law was always work, so he chose the pleasure and quit the work. When he was eight and his brother six years old they used to lead the choir boys into church and he sang at St. George's, Montreal; All Saints', Toronto, and later at Bishop's College, Lennoxville, where, when he was punished for misdeemeanors, they made him sing bass in a quartet with the masters. By this time Burke was moved to the other end of the choir loft and when he went to McGill University he immediately started to dabble in music. Besides acquiring a bachelor of civil law degree he became leader of the McGill Glee Club.

Then came study in London and Paris and afterwards a debut at Montpelier in Southern France, without any rehearsals and singing four operas without rehearsals. It was good fun and very exciting, said Mr. Burke: "the people took as much interest in opera there as they do in football or baseball here and they rag the singers if they sing badly. There were bull fights in that part of the country. I remember one at Nîmes." He told about some of his early student days in France, when he was taken up there by a noted French teacher, whom he found out afterwards had 10 pupils—nine girls and one man—himself. "I had a great time with them," he said. "They were all of different nationalities, one Spanish, one Italian, one Finnish, one Roumanian, and there Dutch and they all talked French and were prima donnas. We used to go down to the casino for dances and when they were over I had to take all those girls home."

Later on he went to Holland and sang at the Royal Opera House for a few seasons, and after that Covent Garden, where the two casts that he enjoyed best were his performances in Faust with Melba and John McCormick and the other in Les Huguenots with Destinn, Tetrazzini, Caruso, Scotti and Arimond.

Mr. Burke's headquarters are in Paris, but every summer he rusticates and takes a two months' holiday down near Biarritz, on the Spanish coast, where, according to the singer's enthusiastic account, there is "wonderful bathing, you can pick figs off the trees, wear old clothes, drink some of the native wine, view the beautiful blue Pyrenees at your back and the gorgeous Gulf of Gascony. It is called the silver coast, you know, and there is not a fly nor a mosquito." He just left this enchanting place to take the boat over and is going back to Europe at the beginning of the year. He will sing in performances of Boris Godunov and other roles in Spain and Sweden and return to Canada in the second season will probably return there.

"I like it here," exclaimed Mr. Burke fervently. "I went for a walk last night down Main street and out past the Fort Garry Hotel, because I feel a little knocked up after the long train journey, and the clear air and wind, a gentle breeze they called it here, made me feel great. It blew all the cobwebs away. I know some Winnipeg people," he continued, and he spoke with warm esteem of Mr. Watkin Mills, "one of the finest Handelian singers I have ever heard and a household name in England," whom he saw last at the Grand Hotel in London before the war, and who, with Pol Plancon, encouraged him more than anyone else in his student days. Mr. Mills, Charles Santley and Andrew Black stood for much in English musical life. Capt. Burke, speaking of Gen. H. D. E. Ketchen and Col. Montague, of Winnipeg, whom he knew in France, at the front, when he was with the Second Canadian division, said that they had given him great assistance when he was trying to get up musical entertainments. "The old Iron Sixth Brigade had the finest band in France," declared the Canadian baritone.

WILL ISSUE PERMITS TO BREW MEDICAL BEER
WASHINGTON, Oct. 26.—Issuance of permits to brewers for the manufacture of medical beer under the new treasury regulations will proceed with promptness and dispatch, Internal Revenue Commissioner Blair said today.

MANY SOLDIERS HAVE REPAYED LOANS IN FULL

OTTAWA, Oct. 26.—Soldier settlement board figures to the end of September show that 27,007 returned soldiers have been settled on the land. Of these 6,069 are on free lands, without loans, while 21,144 are settled on purchased and free lands, with loans amounting to \$85,933,912.60.

The loans were granted for the following purposes:

To purchase land	\$47,457,393.14
To remove encumbrances	2,019,836.77
For permanent improvement	9,921,591.55
For stock and equipment	26,534,191.14
Total	\$85,933,912.60

So far 415 returned men have repaid their loans in full.

POWDER MAGAZINE BLAST KILLS MANY

Forest Fires Cause Explosion in Italy With Heavy Life Loss.
LONDON, Oct. 26.—The explosion of a powder magazine at Santa Elena fortress, reported from Avlona, Italy, last night, was caused by extensive

forest fires which have been raging for several days in the vicinity of Vado, on the west side of the Gulf of Genoa, according to advices to the Central News Agency from Rome today.

MANY ASK FOR PERMITS TO CARRY REVOLVERS

TORONTO, Oct. 26.—Since the recent bank robberies citizens have inundated Chief of Police Dickson with applications for permits to keep revolvers in their homes or places of business for protection. A permit is necessary to purchase a revolver from a dealer.

FRANCE WILL NOT MEDIATE.

PARIS, Oct. 26.—Premier Briand yesterday refused to entertain proposals from Premier Gounaris and Foreign Minister Baltazis, of Greece, looking to the possibility of mediation between Greece and Turkey. It is asserted by newspapers here.

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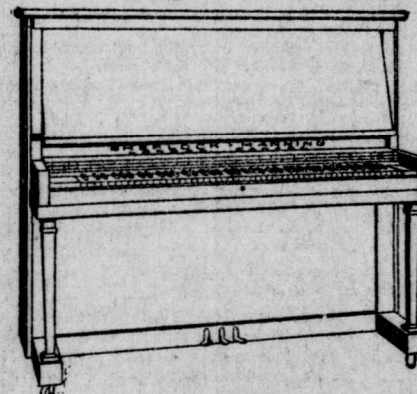
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