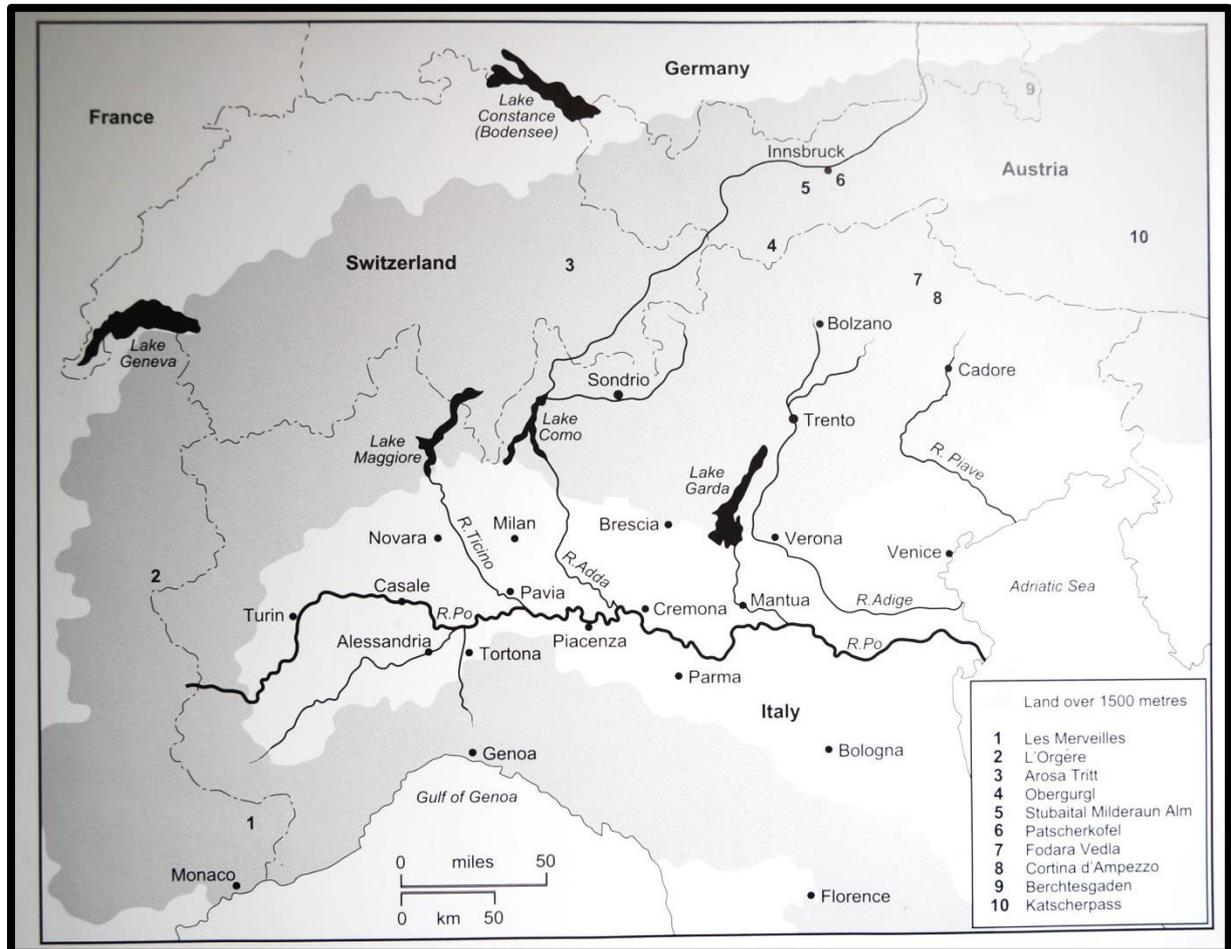


PART IV

Chapter 14

The geography of Italian rivers and Italian wood



For an explanation of the numerals 1-10 see Chapter 15, p. 21.

The river Po flows eastwards across the whole 250-mile width of northern Italy. It begins its journey west of Turin, and flows through Turin, Casale, just south of Pavia, through Piacenza and Cremona, just south of Mantua, and then just north of Ferrara, before reaching the Adriatic Sea 40 miles south of Venice.¹ Since the Adriatic is not tidal the river Po always flows from west to east. Visits made by the present author, during 2012, to the banks of the river Po at Cremona, revealed an enormously wide river which, despite being at a low level, was flowing eastwards very swiftly. To move a cargo vessel upstream on the river Po during the late-seventeenth and early-eighteenth centuries would have been a slow, arduous, and expensive business. At a time when muscle- and/or wind-power were the only forces of propulsion available, such a journey would have required either

1. a wind blowing from the Adriatic strongly enough to overcome the force of the eastward flow of the river

¹ All mileages are measured in straight lines unless indicated otherwise.

2. (with a wind blowing from the west) tacking diagonally and repeatedly across the river, which would considerably increase the distance travelled
3. ‘kedging’: putting an anchor into a rowing boat (the anchor attached by cable to the cargo vessel) and the boatmen rowing upstream ahead of the vessel. The boatmen drop the anchor into the bed of the river and the crew on the cargo vessel then haul their vessel up to the anchor’s position by winding the cable back in on a capstan.

In order to bring spruce tree-trunks to Cremona a much simpler procedure would have been to float the trunks to their destination via river connections, either with the trunks floating in the water or loaded onto a barge, but the only possible direction would have been downstream. In this situation, the pragmatic utilisation of the river system of north-western Italy, with rivers flowing south from Lake Como and joining the Po to the west of Cremona – the river Adda, for example – would have been simple common sense. An alternative route would have been down the river Ticino, which flows south from Lake Maggiore, again joining the Po west of Cremona.² South and southwest of Cremona there are many rivers flowing northwards out of the Ligurian and Etruscan mountains towards the Po: the river Trebbia joins the Po just to the west of Piacenza (and the Po then flows eastwards towards Cremona); the town of Tortona, on the northern edge of the Etruscan Appenines (i.e. on the southern edge of the Lombardy plain) also has river connections to the river Po west of Cremona. When, in his *Memorie per la costruzione e riadatamento degli stromenti da corda* (‘Note on the construction and adaptation of string instruments’) Count Cozio lists the sources of domestic spruce, he writes:

I mean by “ours” the wood from the mountains of Piemonte [to the west of Cremona], the Valtellina [to the north], the hills of Genova and Tortonese [Tortona], and from Piacentino [Piacenza] and Bresciana [Brescia], and other regions of Italy.³

The Count’s Note, even though compiled at the start of the nineteenth century, still reflects the practical importance of river-flow direction when delivering bulk supplies of wood.

As demonstrated in Chapter 15, dendrochronological evidence does not support the traditional assumptions for sources of spruce from the far north-east of Italy – Cortina d’Ampezzo, Cadore, or Trento (particularly the oft-cited Val di Fiemme). Paolo Peterlongo offers no supportive evidence for his statement that

The best trees were those found in the regions of Trentino, Ampezzano, and Cadore, where they still grow today at altitudes above 1,000 metres. [...] The trees most in demand were those that grew under difficult natural conditions such as those on the southern slopes of the Alps. [...] poor soil promotes the growth of hardier and less resinous trees of the highest quality, whose wood dries more rapidly. [...] Documents show⁴ that in those days makers would buy pine trunks whole, frequently picking them out on the spot where they were growing. It is said⁵ that many violin makers even made the trip to the high-lying valleys of Cadore in order to select trees on the basis of the resonant qualities they showed as they floated down river.⁶

It seems wholly unlikely that, in the late-seventeenth and early-eighteenth centuries, any Cremonese violin maker would have had the time, inclination, or financial resources to make the long, difficult, and possibly dangerous journey to the north-eastern (Alto Adige) Alps to select individual spruce

² Reverend H R Haweis (Haweis (1884) p. 220) confirms this route: ‘From Como they [the timbers] found their way to Milan, and from Lake Maggiore direct, via the Ticino and the Po, to Cremona.’

³ Translated from BSCr, LC, ms. Cozio 9; see also Cozio/Bacchetta p. 102.

⁴ No documentary evidence is cited.

⁵ No documentary evidence is cited.

⁶ Peterlongo p. 42. Alpine waterways (unlike lowland rivers) are frequently very shallow – less than a half-metre in depth – and the riverbeds are strewn with boulders, rocks, and other obstacles.

tree-trunks. In addition, the difficulties of moving trunks from the north-eastern high-Alpine areas to Cremona were surely far too acute to have been attempted by traders in the late seventeenth century. The town of Cortina d'Ampezzo lies in the Dolomite mountains, more than 2,000 metres above sea level, 80 straight-line miles northeast of Trento and 160 straight-line miles from Cremona. The river Piave flows south from this area, reaching the Adriatic 20 miles north of Venice. Even if tree trunks could be moved overland, and by river, all the way to the Adriatic, they would still then need to be moved south, past Venice, and down to the mouth of the river Po. An up-river journey of approximately 150 miles would then be needed to reach Cremona. The Cadore valley lies south-southeast of Cortina D'Ampezzo and is served by the same river network; thus the same geographical difficulties apply.

The Val di Fiemme (northeast of Trento) is connected to Trento by the Avisio river⁷ which joins the much larger river Adige just north of Trento; the Adige flows south to Verona. If spruce logs could be moved by road from the Val di Fiemme to the banks of the river Adige then it is certainly possible that they could be off-loaded at Verona but they would still need to be transported by wagon across fifty miles of the Lombardy plain.

To supply wood from the northern side of the central Alps, i.e. near Innsbruck,⁸ would require traders to use the river Inn (flowing the wrong way – northeast – towards the Danube) or the roads (such as they were in 1700) and make their way southwest through the Ötztaler Alps and St Moritz to Lake Como, and then out of Lake Como by way of the river Adda, and finally to the river Po west of Cremona; total distance, by river, is approximately 250 miles.

The Hills comment on the sourcing of both maple and spruce:

All our information goes to prove that this wood [maple] used by the Brescians and the Cremonese makers up to the time of Stradivari was of local growth, and no difficulty could have been experienced in obtaining it. The demands of a few cabinet and fiddle makers could not absorb the produce of many trees, and it must have been both easily and cheaply procurable. As for pine [spruce], then as now, it abounded at no very great distance from Brescia; and if we judge by the free use the Milanese cheap-jacks⁹ made of pine of the finest quality, often for their commonest productions, we are forced to conclude that it could also be had there cheaply and plentifully.¹⁰

Subsequently, the Hills elaborate further on the quality of the wood used by Stradivari:

Take his pre-1684 instruments: all those known to us, with but few exceptions, are made (back, sides, and head) from home-grown maple of a decidedly plain appearance,¹¹ acoustically good, it is true, yet not what either he – or we, let us say – would have chosen with choice unfettered. We are therefore forced to conclude either that he was poorly paid for these examples, or that the handsome and sonorous wood he used in later years was then unobtainable.¹²

⁷ More correctly, a fast-flowing waterway (in Italian, a *torrente*). Today, whitewater rafting is a major sporting activity on the Avisio river as it passes through the Val di Fiemme, which suggests that, in 1700, the waterway was not suitable for transporting tree trunks.

⁸ See Chapter 15 for the proposition that Cremonese violin makers may have sourced their spruce-wood from trees growing near Innsbruck.

⁹ This 1902 comment has achieved some notoriety, especially when the Hills specifically footnote their 'cheap-jack' comment and direct the reader to their monograph's Chapter VIII, page 191, where the 'Milanese cheap-jacks' are mentioned again, and, in a further footnote, are identified as 'Grancino, the several members of the Testore family, and their followers'.

¹⁰ Hill (1902) pp. 160-161.

¹¹ 'Oppio' – 'field', or 'hedge', maple.

¹² Hill (1902) p. 164.

When better quality Balkan maple did become available and affordable Stradivari nonetheless used it as efficiently as possible. The Hills (citing Fétis) suggest that this high-quality maple

[...] would naturally come to the great emporium of the Adriatic, Venice [...] thence to Cremona was not a very long journey.¹³ Nevertheless the transport of heavy logs or trees – and probabilities point to the wood having been carried in bulk – must have somewhat enhanced the cost before it reached its destination, and its use, therefore, would be restricted.¹⁴

The Hills' cautious 'must have somewhat enhanced the cost' is likely a considerable underestimate. The cost of good wood might be one pragmatic reason for the dominance of violin production over viola and, especially, cello production: more instruments, and thus more sale-income, from a single log of maple. Charles Beare has commented on Stradivari's usage of this wood:

From the turn of the century Stradivari had available a remarkable selection of figured maple, including the broad-flamed log from which this violin [the 1703 *Emiliani*] and many others were made.¹⁵

By the 1720s it would seem that Stradivari's supply of high-quality wood, especially maple, was diminishing. Ernest Doring has commented:

The fact that the master gradually used less of the beautifully figured maple which marked his instruments of the middle period indicates that his supply had been largely used up and that he was reserving what remained on hand for special purposes. The growth of violin making at other cities possibly had some bearing on the buyers of the time; cheaper instruments than those by Stradivari were being produced and the master probably found less costly material suitable to his purpose. The fact that many of the works of his late period are tonally magnificent and the choice of eminent performers provides proof positive that handsome wood or that grown in any certain locality is not a deciding factor acoustically.¹⁶

Doring's opinion, that the visual magnificence of a piece of maple wood has no causal relationship with the tonal quality of an instrument made with such wood, and neither does the location of the tree which supplied the wood, is noteworthy.

In their JoAS (2000) article, John Topham and Derek McCormick (citing William Henley's *Universal Dictionary of Violin and Bowmakers*¹⁷ and Brian W Harvey's *The Violin Family and its Makers in the British Isles*¹⁸) suggest that the 'mid-to-southern Alps'¹⁹ were the likely source of wood for Cremonese violin makers. William Henley, in his *Dictionary*, writes a substantial section on 'Wood and its treatment',²⁰ and states that 'the wood used by these [Cremonese] makers came mainly from the South Tyrol region',²¹ but offers no evidence to support this statement (which is Henley's sole comment on the sources of wood). Brian W Harvey identifies the Tyrol area, Switzerland, and what is

¹³ Approximately 150 miles.

¹⁴ Hill (1902) p. 162.

¹⁵ Beare p. 142.

¹⁶ Doring p. 248.

¹⁷ Amati Publishing Company, Brighton, 1973 edition.

¹⁸ Clarendon Press, Oxford, 1995.

¹⁹ Topham and McCormick (2000) p. 185.

²⁰ Henley (1973) p. 1243.

²¹ *Ibid.* p. 1248. North Tyrol is the area of Austria centred on Innsbruck; East Tyrol is centred on the town of Lienz; South Tyrol is also known as Alto Adige and, centred on Bolzano, is now part of Italy, but before 1919 was part of Austria/Hungary.

now Slovenia as the probable source of spruce for the ‘classic Italian makers’, and cites David Rubio (violin maker) for the information that trees aged 200 years, growing at 2,500 metres above sea level, and having growth-rings of between 1mm and 2mm in width, are ideal.²² To appreciate quite how high 2,500 metres is, the highest mountain in the British Isles is Ben Nevis, at 1,344 metres above sea level; Snowdon’s peak is 1,085 metres above sea level. The website of a highly respected German supplier of ‘tonewood’ indicates that the spruce which they bring to market is obtained from trees growing no higher than 1,000 metres above sea level.²³

Citing Rémy Gug’s article ‘Choosing resonant wood’²⁴ Chris Johnson and Ray Courtnall address the practical matter of moving tree trunks down precipitous mountain slopes:

Prior to the nineteenth century, timber from high up in the Alps would be transported down on specially built tracks or slides. [...] the most resonant wood was expected to be found on the higher mountain slopes.²⁵

These tracks – chutes – were built of wood, and held together only by the effect of freezing ice and packed snow; it is claimed that no bolts, screws or nails were used. Because of this, the spruce logs could only be sent sliding down the chutes in the coldest winter months of January and February, and only during the night, when the temperature was at its lowest. Rémy Gug quotes from a late-eighteenth-century description of a night’s activities:

The speed of the biggest logs, the noise, the sliding, the halting [when the tree trunks jammed against the wooden sides of the chutes] the shouting and whistling of the workers in the wild mountains, the lightning, the awe caused by deep night and cold winter, rocks that are covered with snow, that often thunder down in small avalanches, adding a noise of its own.²⁶

Given the complex vertical environment of alpine peaks and valleys twenty miles north of Lake Maggiore²⁷ these specially built chutes would themselves have been enormous building projects, and therefore immensely expensive to create (but such a costly effort would presumably have been justified by the Milanese appetite for building-timber).²⁸ An account written two hundred years earlier, in 1574, by Josias Simmler (1530-1576) indicates that spruce logs could be brought to Milan via Lake Maggiore and the river Ticino and could then be distributed throughout northern Italy:

It is common practice that the long trees from Luggaris [Lugano?] get cut into logs [...] so that they can be transported through the narrow valley and the curved and wild mountain rivers²⁹ to the great lake [Lake Maggiore] where they float for the transport across the lake and further on through the Ticino [river] to Milano and Padua³⁰ [...] and further on the river Po till Cremona and up till Ferrara, Mantua and Venice to the ocean.³¹

²² See Harvey (1995) p. 52.

²³ http://www.alpentonholz.de/betrieb_en_n.html. Website accessed March 2012.

²⁴ *The Strad*, January 1991, pp. 60-64.

²⁵ Johnson and Courtnall p. 62.

²⁶ Hans-Rudolf Schinz, *Beyträge zur näheren Kenntniss des Schweizerlandes* (‘Contributions to a better knowledge of Switzerland’), Volume II, 1784.

²⁷ H-R Schinz specifically identifies the hamlet of Pontirone, adjacent to the village of Biasca (through which flows the Swiss section of the Ticino river). Biasca lies sixty miles north of Milan.

²⁸ H-R Schinz associates these chutes with the need to ‘provide the timber needed by the large city of Milano that produces everything but wood in abundance from its rich fertile plain’ (quoted by Rémy Gug, *The Strad*, January 1991, p. 64).

²⁹ See footnotes 7 and 8 of this chapter.

³⁰ The writer must have meant Pavia; Padua lies 130 miles to the east.

³¹ Quoted by Rémy Gug, *The Strad*, January 1991, p. 64, from *Vallesiae Descriptio*, Libro II, De Tiguri, 1574, fol. 257v. Josias Simmler became Professor of Theology at the Zurich Academy in 1560.

Thus, the weight of evidence points to the spruce wood used by Lombardian instrument makers, cabinet makers, furniture makers, wood carvers, joiners, and builders, being sourced – for entirely pragmatic and common-sense reasons – from the north-western area of Italy rather than the north-east. The critical factor is the advantageous presence of rivers which flow down from the lakes towards the western end of the Lombardy plain, and then, via the river Po, to Cremona and all the way to Venice. To this proposition should be added the much-worsened climatic conditions across Western Europe during the period 1645-1715 – the ‘Maunder Minimum’.³² During this period, summers were cooler, and winters longer and much colder, and the low-elevation spruce trees of the north-western alpine foothills would likely have been growing in conditions normally experienced at much higher altitudes. If these climatic conditions were producing easily-accessible slow-growing spruce trees there would have been no need for Cremonese violin makers to consider sourcing their wood from forests located 160 miles to the north-east.

³² See Chapter 15 for further information about the Maunder Minimum.