

**For Teachers:** Please have the students read the sentences one at a time and correct their pronunciation of each sentence then have them repeat after you. Wait until after they read the sentence (use the number in place of the missing word) to have the students choose the correct answer to fill in the blank. When the students finish the article, move on to the further questions.

日本語訳なタイプ B もございます。スクロールダウンするとございますので好きな方をご利用下さい。

3[B] – Stradivarius Violins

ストラディヴァリウス

eTOC  
English Teachers On Call

Version3 G1 12-1

- Stradivarius violins, made by the Italian 職人 (しょくにん) craftsman Antonio Stradivari from the mid-1600s to the early 1700s, have a 伝説的 (でんせつてき) な legendary reputation for their 無比 (むひ) の unrivalled quality of sound.
- About 650 of Stradivari's instruments survive today, and some sell for millions of dollars.
- But what makes their sound so 驚 (おどろ) くべき phenomenal?
- Many researchers have argued the answer is the wood from which they were crafted.
- It was once believed Stradivari obtained his wood from old cathedrals and that years of absorbing bell vibrations had resulted in wood that produced a uniquely rich sound.
- Later examination of the wood in Stradivarius violins, however, indicated it is not old enough for this to be true.
- Berend Stoel, a 放射線学者 (ほうしゃせんがくしゃ) radiologist at Leiden University in the Netherlands, has recently suggested another reason for the violins' superior quality.
- Stoel used X-ray コンピュータ断層撮影法 (だんそうさつえいほう) computed tomography (CT) scans to compare the density of the wood in Stradivarius violins to that in modern instruments.
- He found that the Stradivarius violins displayed a far more 均一 (きんいつ) な密度 (みつど) uniform density throughout each instrument.
- This is significant as the extent of the variation in density alters the way an instrument vibrates, which in turn affects the sound being produced.

**Further Questions** \*Ask student to answer the question on their own at first. If the student can't answer correctly, have him look at the last page and read the "example answer" for the question. Have the student try to memorize the answer, if it's too long or difficult, you should divide the sentence into 2 or 3 parts to make it easier to remember. Once they have memorized the answer, the teacher should ask the question one last time so that the student can practice answering. Also if you find any mistakes, please mark the page and let me know ASAP.

- 1) When were the Stradivarius violins made?**
- ストラディヴァリウスのヴァイオリンはいつつく作られましたか。  
*They were made from the mid-1600s to the early 1700s.*
- 2) Where was it once believed Stradivari obtained his wood?**
- ストラディヴァリはかつて、どこから木を入手してたと信じられていましたか。  
*It was once believed Stradivari obtains his wood from old cathedrals.*
- 3) How did Stoel compare the density of the wood in in Stradivarius violins to that in modern instruments?**
- Stoel はストラディヴァリウスのヴァイオリンの木の密度と現代の楽器の木の密度をどうやって比較しましたか。  
*He used computed tomography (CT) scans to compare the density of the wood*

17. A theory proposed by tree-ring scientist Henri Grissino-Mayer and climatologist Lloyd Burckle supports Stoel's findings.
18. One factor that causes variations in wood density is the rate of tree growth.
19. From 1645 until 1715, unusually low solar radiation led to colder temperatures throughout Europe.
20. During this period, known as the Maunder Minimum, tree growth slowed to its lowest level in 500 years.
21. This resulted in wood that was uniformly dense, as evidenced by narrow growth rings.
22. Grissino-Mayer and Burckle claim that this would have helped "instill a superior tone and brilliance in violins."
23. Another tree-ring scientist, John Topham, argues this theory is inconclusive.
24. He points out that only a few Stradivarius violins have been analyzed for density, and, in fact, the wood in other Stradivarius violins does not exhibit the same narrow growth rings.
25. Furthermore, he notes that although Stradivari's European contemporaries used wood that grew during the Maunder Minimum, they still produced inferior instruments.

### Further Questions



26. 4) What is one factor that causes variations in wood density?
27. *One factor that causes variation in wood density is the rate of tree growth.*
28. 5) Why does John Topham argue Grissino-Mayer and Burckle's theory is inconclusive?
29. *Only a few Stradivarius violins have been analyzed for density (, and, in fact, the wood in other Stradivarius violins does not exhibit the same narrow growth rings).*

30. Biochemist Joseph Nagyvary of Texas A&M University agrees with Topham.
31. Nagyvary believes the answer lies in the chemistry of the wood Stradivari used.
32. In 2009, he ran a chemical analysis of fragments from Stradivarius violins and found the wood contained mineral compounds indicating it had been chemically treated. He also discovered it was highly porous.

学説 (がくせつ) を立 (た) てる

ニスのような

33. He theorizes the wood was treated with a varnish-like substance to prevent worm infestation, which weakened the wood's organic structure.
34. Nagyvary believes the wood's porosity gives Stradivarius violins their powerful tone.
35. This contradicts the widely held belief that stronger wood produces a better sound. Still, the question arises of why the quality of the violins Stradivari crafted was never equaled by his apprentices, who carried on his work after his death.
36. Nagyvary suggests the wood Stradivari used had likely been treated before he obtained it, and that the secret behind the quality of his violins could easily have died with him because he probably "did not even know these minerals in his wood were the crucial factor" in creating the instrument's unique sound.

## Further Questions



37. 6) What did Nagyvary find when he ran a chemical analysis of fragments from Stradivarius violins?
38. Nagyvary は、ストラディヴァリウスのヴァイオリンから採取したかけらを科学的に分析して、何を発見しましたか。  
*He found the wood contained mineral compounds indicating it had been chemically treated.*
39. 7) Why is the weaker wood in Stradivarius violins strange?
40. ストラディヴァリウスのヴァイオリンの木が弱いことが、なぜ不思議なのですか。  
*It contradicts the widely held belief that stronger wood produced a better sound.*
41. 8) What question is raised by Nagyvary's findings?
42. Nagyvary の発見から、どのような疑問が生じていますか。  
*The question arises of why the quality of the violins Stradivari crafted was never equaled by his apprentices.*

## \*Choose the correct answer from these choices.

43. (35) What was significant about Berend Stoel's research?
44. Berend Stoel の調査で重要だったことは何ですか。  
誤 (あやま) っていることを示 (しめ) した
45. 1. It disproved the commonly held belief among modern scientists that Stradivari had obtained the wood for all of his violins from old cathedrals.
46. 2. It suggested that Stradivari, in order to create a more uniform sound, sought out the densest wood available for use in his instruments.
47. 3. It showed that Stradivari made his instruments from wood that vibrates in a different manner from the wood used in modern violins.
48. 4. It demonstrated that the wood used by Stradivari had a significantly lower density than the wood used by his contemporaries.
49. (36) One problem John Topham has with Henri Grissino-Mayer and Lloyd Burckle's theory is that

50. Henri Grissino-Mayer と Lloyd Burckle の理論に関する問題で John Topham が持っていたものは



51. 1. Stradivarius violins made from trees that experienced long periods of slow growth produce a lower-quality sound than other Stradivari violins.
52. 2. Despite establishing a connection between Maunder Minimum and wood density, it fails to explain why some Stradivarius violins are inferior.
53. 3. Even though narrow growth rings were found in the wood of some Stradivarius violins, these instruments do not represent all violins made by Stradivari.
54. 4. The lack of narrow growth rings in the wood used by Stradivari's contemporaries indicates growth rates varied during the Maunder Minimum.

55. (37) According to Joseph Nagyvary, what is a possible reason the quality of Stradivari's violins was never matched?

56. Joseph Nagyvaryによると、ストラディヴァリのヴァイオリンの品質が決して一致しない理由として考えられるものはなんですか。

57. 1. Stradivari refused to give his apprentices access to the same wood he used because he did not trust them to apply the proper chemical treatments.
58. 2. Stradivari was unable to pass on the key piece of information regarding what made his violins so good because he himself was unaware of it.
59. 3. Stradivari was unwilling to reveal the recipe for the varnish he used to protect his wood because he was not entirely satisfied with its effectiveness.
60. 4. Stradivari's claim that weaker wood could actually produce higher-quality instruments was too controversial for other violin makers to accept.

## Answers for "Further Questions"



61. 1) When were the Stradivarius violins made?  
*They were made from the mid-1600s to the early 1700s.*
62. 2) Where was it once believed Stradivari obtained his wood?  
*It was once believed Stradivari obtains his wood from old cathedrals.*
63. 3) How did Stoel compare the density of the wood in in Stradivarius violins to that in modern instruments?  
*He used computed tomography (CT) scans to compare the density of the wood in Stradivarius violins to that in modern instruments.*
64. 4) What is one factor that causes variations in wood density?  
*One factor that causes variation in wood density is the rate of tree growth.*
65. 5) Why does John Topham argue Grissino-Mayer and Burckle's theory is inconclusive?  
*Only a few Stradivarius violins have been analyzed for density (, and, in fact, the wood in other Stradivarius violins does not exhibit the same narrow growth rings).*
66. 6) What did Nagyvary find when he ran a chemical analysis of fragments from Stradivarius violins?  
*He found the wood contained mineral compounds indicating it had been chemically treated.*
67. 7) Why is the weaker wood in Stradivarius violins strange?  
*It contradicts the widely held belief that stronger wood produced a better sound.*

## 68. 8) What question is raised by Nagyvary's findings?

*The question arises of why the quality of the violins Stradivari crafted was never equaled by his apprentices.*

69. 解答: (35) 3 (36) 3 (37) 2

日本語訳なし

3[B] – Stradivarius Violins


 English Teachers On Call

Version3 G1 12-1

70. Stradivarius violins, made by the Italian craftsman Antonio Stradivari from the mid-1600s to the early 1700s, have a legendary reputation for their unrivalled quality of sound.
71. About 650 of Stradivari's instruments survive today, and some sell for millions of dollars.
72. But what makes their sound so phenomenal?
73. Many researchers have argued the answer is the wood from which they were crafted.
74. It was once believed Stradivari obtained his wood from old cathedrals and that years of absorbing bell vibrations had resulted in wood that produced a uniquely rich sound.
75. Later examination of the wood in Stradivarius violins, however, indicated it is not old enough for this to be true.
76. Berend Stoel, a radiologist at Leiden University in the Netherlands, has recently suggested another reason for the violins' superior quality.
77. Stoel used X-ray computed tomography (CT) scans to compare the density of the wood in Stradivarius violins to that in modern instruments.
78. He found that the Stradivarius violins displayed a far more uniform density throughout each instrument.
79. This is significant as the extent of the variation in density alters the way an instrument vibrates, which in turn affects the sound being produced.

## Further Questions

80. 1) When were the Stradivarius violins made?
81. 2) Where was it once believed Stradivari obtained his wood?
82. 3) How did Stoel compare the density of the wood in in Stradivarius violins to that in modern instruments?
83. A theory proposed by tree-ring scientist Henri Grissino-Mayer and climatologist Lloyd Burckle supports Stoel's findings.
84. One factor that causes variations in wood density is the rate of tree growth.
85. From 1645 until 1715, unusually low solar radiation led to colder temperatures throughout Europe.
86. During this period, known as the Maunder Minimum, tree growth slowed to its lowest level in 500 years.
87. This resulted in wood that was uniformly dense, as evidenced by narrow growth rings.
88. Grissino-Mayer and Burckle claim that this would have helped "instill a superior tone and brilliance in violins."

89. Another tree-ring scientist, John Topham, argues this theory is inconclusive.
90. He points out that only a few Stradivarius violins have been analyzed for density, and, in fact, the wood in other Stradivarius violins does not exhibit the same narrow growth rings.
91. Furthermore, he notes that although Stradivari's European contemporaries used wood that grew during the Maunder Minimum, they still produced inferior instruments.

### Further Questions English Teachers On Call

92. 4) What is one factor that causes variations in wood density?
93. 5) Why does John Topham argue Grissino-Mayer and Burckle's theory is inconclusive?
- 
94. Biochemist Joseph Nagyvary of Texas A&M University agrees with Topham.
95. Nagyvary believes the answer lies in the chemistry of the wood Stradivari used.
96. In 2009, he ran a chemical analysis of fragments from Stradivarius violins and found the wood contained mineral compounds indicating it had been chemically treated. He also discovered it was highly porous.
97. He theorizes the wood was treated with a varnish-like substance to prevent worm infestation, which weakened the wood's organic structure.
98. Nagyvary believes the wood's porosity gives Stradivarius violins their powerful tone.
99. This contradicts the widely held belief that stronger wood produces a better sound. Still, the question arises of why the quality of the violins Stradivari crafted was never equaled by his apprentices, who carried on his work after his death.
100. Nagyvary suggests the wood Stradivari used had likely been treated before he obtained it, and that the secret behind the quality of his violins could easily have died with him because he probably "did not even know these minerals in his wood were the crucial factor" in creating the instrument's unique sound.

### Further Questions English Teachers On Call

101. 6) What did Nagyvary find when he ran a chemical analysis of fragments from Stradivarius violins?
102. 7) Why is the weaker wood in Stradivarius violins strange?
103. 8) What question is raised by Nagyvary's findings?

### \*Choose the correct answer from these choices.

104. (35) What was significant about Berend Stoel's research?
105. 1. It disproved the commonly held belief among modern scientists that Stradivari had obtained the wood for all of his violins from old cathedrals.
106. 2. It suggested that Stradivari, in order to create a more uniform sound, sought out the densest wood available for use in his instruments.
107. 3. It showed that Stradivari made his instruments from wood that vibrates in a different manner from the wood used in modern violins.



108. 4. It demonstrated that the wood used by Stradivari had a significantly lower density than the wood used by his contemporaries.

109. (36) One problem John Topham has with Henri Grissino-Mayer and Lloyd Burckle's theory is that

110. 1. Stradivarius violins made from trees that experienced long periods of slow growth produce a lower-quality sound than other Stradivari violins.

111. 2. Despite establishing a connection between Maunder Minimum and wood density, it fails to explain why some Stradivarius violins are inferior.

112. 3. Even though narrow growth rings were found in the wood of some Stradivarius violins, these instruments do not represent all violins made by Stradivari.

113. 4. The lack of narrow growth rings in the wood used by Stradivari's contemporaries indicates growth rates varied during the Maunder Minimum.

114. (37) According to Joseph Nagyvary, what is a possible reason the quality of Stradivari's violins was never matched?

115. 1. Stradivari refused to give his apprentices access to the same wood he used because he did not trust them to apply the proper chemical treatments.

116. 2. Stradivari was unable to pass on the key piece of information regarding what made his violins so good because he himself was unaware of it.

117. 3. Stradivari was unwilling to reveal the recipe for the varnish he used to protect his wood because he was not entirely satisfied with its effectiveness.

118. 4. Stradivari's claim that weaker wood could actually produce higher-quality instruments was too controversial for other violin makers to accept.

### Answers for "Further Questions"



119. 1) When were the Stradivarius violins made?

*They were made from the mid-1600s to the early 1700s.*

120. 2) Where was it once believed Stradivari obtained his wood?

*It was once believed Stradivari obtains his wood from old cathedrals.*

121. 3) How did Stoel compare the density of the wood in in Stradivarius violins to that in modern instruments?

*He used computed tomography (CT) scans to compare the density of the wood in Stradivarius violins to that in modern instruments.*

122. 4) What is one factor that causes variations in wood density?

*One factor that causes variation in wood density is the rate of tree growth.*

123. 5) Why does John Topham argue Grissino-Mayer and Burckle's theory is inconclusive?

*Only a few Stradivarius violins have been analyzed for density (, and, in fact, the wood in other Stradivarius violins does not exhibit the same narrow growth rings).*

124. 6) What did Nagyvary find when he ran a chemical analysis of fragments from Stradivarius violins?

*He found the wood contained mineral compounds indicating it had been chemically treated.*

125. 7) Why is the weaker wood in Stradivarius violins strange?

*It contradicts the widely held belief that stronger wood produced a better sound.*

126. 8) What question is raised by Nagyvary's findings?

*The question arises of why the quality of the violins Stradivari crafted was never equaled by his apprentices.*

127. 解答: (35) 3 (36) 3 (37) 2



eTOC在校生様様がeTOCのレッスン  
以外の目的で使用すること及び印刷禁止。  
法律で罰せられます。  
This document is protected by copyright.  
You are breaking the law  
if you copy or distribute this file.

