

Lady's Slipper Orchids (*Cypripedium calceolus*) in the Valley of the Tyrolean River and in the Lower Valley of Niederhausen.

01. View from Chiemsee over the river delta into the Tyrolean river valley (Tiroler Ache)

02. Lady's slipper orchids in the Tyrolean river valley

The valley of the Tyrolean river (Tiroler Ache) stretches over southern Bavaria from the border of Austria, which is between Kössen and Schleching. It flows through Unterwössen, Marquartstein, Grassau, Staudach, Übersee into the Chiemsee. The municipalities are integrated in the eco-model river valley, in order to develop both, natural agriculture and sparing tourism. The valley is rich in orchids, distributed over different heights and varied biotopes. More than 60 species have been documented in the river valley.

03. View over Grassau and Marquartstein towards the river valley

04. View over the upper river valley from Schnappen summit.

In fact, Lady's Slipper orchids in the river valley are known especially in Unterwössen, where Franz Glanz runs his horticulture and orchid nursery at the northern entrance of the town. Many new hybrids of Lady's Slipper orchid species such as *Paphiopedilum* and *Phragmipedium* bear their names with the addition 'Wössner' as a reference to the hometown of the breeder. Less is known about the sites of the native yellow Lady's Slipper orchid (*Cypripedium calceolus*) in Unterwössen. Not far from the sailing airport, in a hidden place, are some large clusters of this outstanding species, which are in full bloom in May and early June. The main site of the orchids is not threatened by humans because it lies far from the hiking trails, but rather from the rampant forest such as shrubs and trees. It has been observed that the plants develop less and less young shoots.

05. View from the site to the Geigelstein mountain

06. 07 Newly emerging shoots of Lady's Slipper orchids

08. 09. 10 Newly emerging shoots of Lady's Slipper orchids

11. 12. 13 Site and habitat of Lady's Slipper orchids

14. 15. 16 Budding plants of Lady's Slipper orchids

17. 18 Opening blossom of Lady's Slipper orchids

The native yellow Lady's Slipper likes to grow in light, damp forests, such as in mountain-mix of deciduous forests, on forest edges and often on very steep mountain slopes, which does not permit tree populations. From the end of April to the beginning of May the shoots slowly develop between high grasses and thus are very difficult to detect. In the middle of the month they will begin budding, and the flowers will gradually open by June depending on the temperatures.

19. 20. 21. Lady's Slipper orchids in full bloom in Unterwössen

22. 23. 24.

25. 26. 27.

28. 29. 30.

31. 32. Blossom of Lady's Slipper orchids with spider

In addition to Lady's Slipper orchids, which are locally known as "Lanakacheln", long-leaved helleborine (*Cephalanthera longifolia*), common twayblade (*Listera ovata*) and bird's nest orchids (*Neottia nidus-avis*), as well as blue columbine (*Aquilegia vulgaris*) and mountain cornflower or bachelor's button (*Centaurea montana*) can be found there.

33. 34. Common Twayblade (*Listera ovata*)

35. Mountain cornflower or Bachelor's button (*Centaurea montana*)

36. Blue columbine (*Aquilegia vulgaris*)

37. 38. 39 Bird's nest orchids (*Neottia nidus-avis*)

In the neighboring village of Schleching are further sites of Lady's Slipper orchids to be discovered. The area, now classified as a mountaineer village with hiking trails in the direction of Geigelstein and on the Griesselberg circular track one finds blossoming plants all along the trails. Some of the Slippers are located in the rather heavily shaded forest area, and some on steep, hardly walkable meadows. The sites are quite easy to reach. They are located only 20 minutes from the car park at the

valley station of the former funicular to the Geigelstein.

40. 41. 42 Site of Lady's Slipper orchids in Schleching

43. 44. 45 Site of Lady's Slipper orchids on steep slopes

46. 47. 48 Fresh shoots of Lady's Slipper orchids

49. Young shoots of Lady's Slipper orchids

50. 51. Globe-daisies (*Globularia bisnagarica*)

52. Steep slope with Lady's Slipper orchids

53. 54. The buds of Lady's Slipper orchids develop

The exact locations of the Lady's Slipper orchids can be found only with accurate local knowledge. The most populous site is through a hidden trampling path and thereby protected from human interventions. In recent years, a very stable population has been observed in Schleching, where the number of plants hardly increase or decrease. Depending on the weather, more or less seed capsules are formed. Sometimes they dry up or are eroded. The flowering time depends on the weather. After rainfall the petals and sepals look almost black-brown. In brighter and sunnier locations the colors are slightly paler.

Around the Lady's Slipper orchids grow mostly sword-leaved helleborine (*Cephalanthera longifolia*), globe-daisies (*Globularia nudicaulis*), mountain cornflower or bachelor's button (*Centaurea montana*) and bird's nest orchids (*Neottia nidus-avis*).

55. 56. 57 Slowly, the flowers of the Lady's Slipper orchids open, but they look a little sad after the rain

58. Steep slope

59. 60. After the rain, the flowers appear almost black-brown with a yellow lip

61. 62. 63. Lady's Slipper orchids

64. 65. 66. Lady's Slipper orchids

67. 68. 70. Lady's Slipper orchids

69. In the midst of the Lady's Slipper orchids

71. Deformed flower of Lady's Slipper orchid

72. 73. Lady's Slipper orchids

74. 75. *Cypripedium calceolus* – Lady's Slipper or Marien Slipper

In the vicinity of Lady's Slipper orchids also grow Long-leaved helleborine (*Cephalanthera longifolia*). They surpass the surrounding grass and can hardly be overlooked with their upright inflorescences. They develop a variety of white flowers, which are usually only half-open.

76. 77. 78. Long-leaved helleborine (*Cephalanthera longifolia*)

79. 80. Long-leaved helleborine (*Cephalanthera longifolia*) with a crab spider

When I edited (looked at) my pictures of Lady's Slipper orchids I discovered a small spider in search of its prey. On the next visit to the site I looked more closely. The spider seems to prefer these flowers as hunting grounds. The crab spider, only a few millimeters in size, is *Misumena vatia*. It was waiting for insects that were being attracted by the flowers. To their prey belong hoverflies, bees, small beetles, insects that are larger than the spider (the females is 10 mm in diameter and the male is 4 mm). The females have developed a special tactic, in that they can change the color of the body and adapt themselves chameleon-like to the color background of the flower. They may appear white or yellow, sometimes even greenish.

81. 82. 83. Lady's Slipper orchids with variable colored crab spider *Misumena vatia*

84. 85. 86. Lady's Slipper orchids with variable colored crab spider *Misumena vatia*

87. 88. 89. Lady's Slipper orchids with variable colored crab spider *Misumena vatia*

Along the paths at the foot of the Geigelstein, one can observe smaller clusters of the Lady's Slipper orchids. Even though in the past individual plants have been

dug out and transplanted into home gardens, this bad habit has ceased long ago. Although, some individual breach the Ordinance on Nature Conservation, as the former mayor of Schleching and nature lover Fritz Irlacher reported.

In August seed capsules are formed. Plants of Lady's Slipper orchids are now hardly visible between the tall grasses. Only a few of the plants are pollinated, and even less form capsules with germinating seeds. Some of them dried up, others are eaten. However, the remaining capsules, with ideal conditions, help keep the species in place. Even though at this time of year the magnificent flowers of the slippers can no longer be admired, the nature offers other pleasant views of its surrounding and Willow Gentian (*Gentiana asclepiadea*) begin to open their flowers. The intense blue color spots are seen all around. In addition, the European goldenrod or woundwort (*Solidago virgaurea*) and the marsh grass of Pamassus or bogstar (*Parnassia palustris*) can also be admired on the edge of the road. The last mountain cornflower or bachelor's button (*Centaurea montana*) and globe-daisies (*Globularia nudicaulis*) are not to be overlooked.

90. 91. 92. 93. The seed capsules of Lady's Slipper orchids are formed in August

94. 95. 96. 97. Lady's Slipper orchids hidden in the grass

98. 99. Marsh grass of Pamassus or bogstar (*Parnassia palustris*)

100 Small river near the habitat of *Cypripedium*

101. 102. European goldenrod or woundwort (*Solidago virgaurea*)

Not far from Schleching, on the other side of the border in Austria lies the Niederhauser valley south of Kössen in the west of the Unterberghorn. Highway 176 leads from Kössen in the direction of St Johann in Tyrol. After a few kilometers, before Schwendt, the road turns left to the Country Inn Lucknerhof. After driving a short distance, on a narrow path, is the entrance to the valley. A car park is available and the road leads to explore the valley by mountain bike. The route is easy to moderate.

It is also possible to start the hike at the fire station in Schwendt. After hike through the Niederhauser valley it is possible to walk or bike to the Lack Alp. This distance is 9,5 km with an altitude difference uphill of 884 m. The highest point on Lack

Alp is at 1331 m. The Lady's Slipper orchids can be reached in 30 - 45 minutes, the trail to the Alp becomes somewhat more difficult.

103. 104. 105. The way to the Niederhauser valley

106. 107. 108. Waterfall in the Niederhauser valley

109. 110. On both sides of the Niederhauser valley, landslides with gravel and sand dominate the image. Lady's Slipper orchids are growing on the site of landslides

111. 112. Budding plants of Lady's Slipper orchids

113. 114. Large plant clusters of Lady's Slipper orchids are not a rarity

Although the forest trail climbs is initially steep, the trail to see the Lady's Slipper orchids is quite leisurely. There are always Columbine and mountain cornflower or bachelor's button flowers. The forest path is quite well developed, while in the upper part of the valley loose gravel leads to slipping slopes. The valley narrows a bit later. The mountain stream runs next to the trail. On the rock walls, one can observe plants of the Common Butterwort with their beautiful blue flowers.

115. Common Butterwort (*Pinguicula vulgaris*)

116. Blue columbine (*Aquilegia vulgaris*)

117. Black-purple columbine (*Aquilegia atrata*)

118. 119. 120. Lady's Slipper orchids in the Niederhauser valle (Niederhauser Tal)

121. 122. 123. Lady's Slipper orchids Niederhauser valley

124. 125. 126. 127. Lady's Slipper orchids Niederhauser valley

After passing the first waterfall, the site of the Lady's Slipper orchids begins. At first there are single plants on the slopes at the edge of the road, as well as sword-leaved helleborine and a few orchis. Very beautiful Lady's Slipper orchids are growing on the other side of the brook in the gravel or in semi-shaded places in open forests of coniferous and laurel trees. Binoculars are helpful to view the plants more closely. The valley changes its face every year, as landslides affect not only the trees but also the Lady's Slipper orchids. Thus the search begins again every year. In this area of landslides and slippery gravel slopes, the plants grow in

the grass between slush and willow bushes.

128. 129. 130. Young plants of Lady's Slipper orchids next to the flowering plant clusters

131. 132. 133. Many plants in flower around

The most beautiful sites with hundreds of large plant clusters with a lots of flowers are quite hidden and not so easy to find. Frequently, the clusters are arranged in descending furrows, as if the seeds of the plants were blown downwards, and new plants developed. In addition to the large clusters, young plants are growing as well. This suggests a healthy development of the population. Large plant clusters are in full bloom, while plants in shadier places just open the flowers and in more open places seed capsules are already forming. In the vicinity lily-of-the-valley (*Convallaria majalis*), common butterwort (*Pinguicula vulgaris*), globe-daisies (*Globularia bisnagarica*), horseshoe vetch (*Hippocrepis comosa*), short-stemmed or 'Clusius' gentian (*Gentiana clusii*) and auricula or mountain cowslip, which actually bloom in the spring. There are also sword-leaved helleborine (*Cephalanthera longifolia*) and orchis.

134. 135. Common Butterwort (*Polygala vulgaris*)

136. 137. Short-stemmed or 'Clusius' gentian (*Gentiana clusii*)

138. 139. Long-leaved Helleborine (*Cephalanthera longifolia*)

140. Auricula or mountain cowslip (*Primula auricula*)

141. Globe-daisies (*Globularia nudicaulis*)

142. Horseshoe vetch (*Hippocrepis comosa*)

143. 144. Common spotted orchid (*Dactylorhiza fuchsii*)

145. 146. 147. In some areas the ground is almost littered with Lady's Slipper orchids

148. 149. 150. Many orchids along the way

151. Faded plants with Lady's Slipper orchid capsules

152. 153. Faded plants with Lady's Slipper orchid capsules between developing lily-of-the-valley

154. Plants of Lady's Slipper orchid next to the brooke bed

155. In the background open rubble field

After crossing the stream, the main areas of Lady's Slipper orchid have passed. Individual plants can still be found along the path, but the large plant bushes are so hidden that they can hardly be discovered. The route then continues to the Lack alp. A great way for hikers, but also interesting for friends of mountain and alpine meadows.

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61. 62. 62A. SAME 63. (PAGE 8

90. 91. 92. ?? 93. Im August bilden sich die Samenkapseln aus (PAGE 11)

98. 99. 100.?? Sumpferzblatt (*Parnassia palustris*) (PAGE 11)

100 Small river near the habitat of *Cypripedium*

131. 132. 133. INFO?? (PAGE 15)