



Anacamptis pyramidalis in the mountains near Mostar



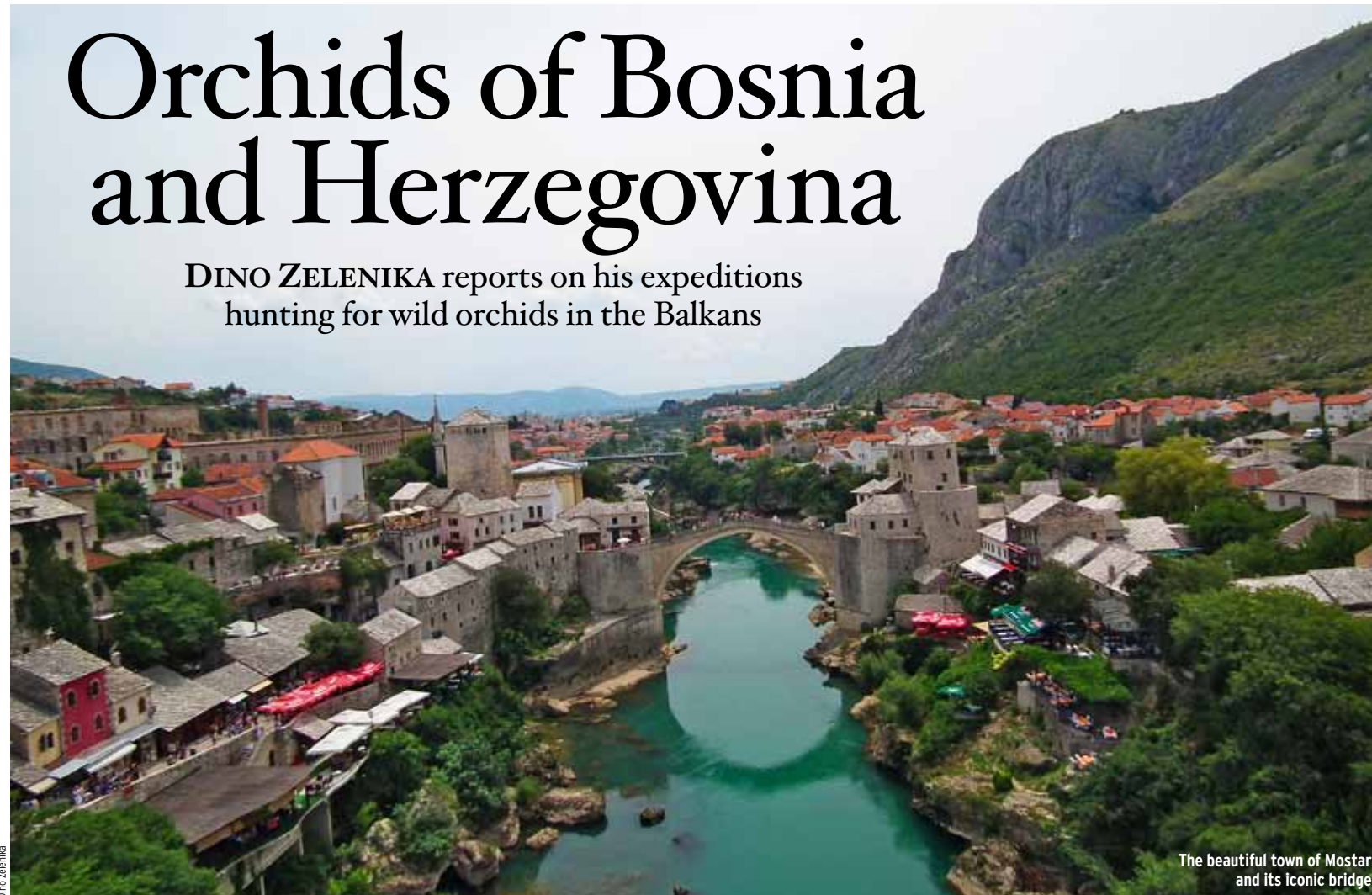
Platanthera chlorantha growing with *Gymnadenia conopsea*



Ophrys scolopax growing in Medjugorje

Orchids of Bosnia and Herzegovina

DINO ZELENKA reports on his expeditions hunting for wild orchids in the Balkans



The beautiful town of Mostar and its iconic bridge

THE CITY OF MOSTAR is named after its *Stari Most*, or Old Bridge. Towering above the vivid blue-green, icy cold Neretva river, the bridge must be the best known landmark in Bosnia and Herzegovina. Originally built in 1566 under the reign of Sultan Suleiman the Magnificent of the Ottoman Empire, it was the widest man-made arch in the world, and a great architectural work of its time. It has never failed to attract attention – even when it was destroyed in 1993.

I was born in Mostar in 1991. My family had lived in the area for generations. I emigrated to England in 1999 with my mother and English stepfather. I started to grow orchids in 2003 and after reading about wild British and European orchids, a new curiosity developed: what kinds of orchids grew in Bosnia and Herzegovina? I quickly realised that that entire area, except for Bulgaria, Greece and Slovenia, was almost completely neglected in botanical writing in recent times. I decided that one day I would begin an investigation myself, and that was when the seeds of this project were sown.

In 2010 I returned as a young man, and awkwardly lurching around with my compact camera I managed to snap a few species of wild orchids. In 2011 I came much better prepared with a digital SLR camera, and did a much more thorough, and arguably more scientific investigation, the results of which are presented here.

Geography, terrain and climate

Bosnia and Herzegovina were separate territories until the late 19th century. The Ottoman Empire honoured the division between the medieval kingdom of Bosnia and the independent duchy of Herzegovina, and administered them separately, until finally fusing them together in 1853. Sarajevo was the capital of

Bosnia, and Mostar the regional capital of Herzegovina. Botanically they are quite distinct too, due to differing climates and terrain. Bosnia is mountainous, green and heavily wooded, with a continental climate, becoming alpine at higher altitudes. Whereas Herzegovina, except in the north and northeast, has a classic Mediterranean climate with lots of bare rock and sparse woodland. The local flora, including orchids, reflect these differences. Where the high mountains start, north of Mostar, the two climates merge, and a unique zone with increased biodiversity gives rise to many endemic species.

The orchids near Mostar

Mostar these days is as famous for the vicious street fighting and destruction that took place there between 1992–5 as for its bridge and old city. But a fair number of beautiful orchid species occur there, including some within the city boundaries. The most notable site with the highest number of species is undoubtedly an ancient, mainly pine, woodland, between the outer suburbs of Balinovac and Ilići. Three species of *Ophrys* occur here. The first to flower is *Ophrys sphegodes*, peaking in early to mid April. From late April until late May the beautiful *Ophrys scolopax* graces the woodland. Finally, from mid May until the first days of June is the season for the well-known *Ophrys apifera*.

Other species that occur in this wood are the rare *Cephalanthera rubra*, *Neottia nidus-avis* (although it is not at all common here), *Orchis purpurea*, which grows in abundant numbers both in the woodland and outside it, and in one location it grows next to *Ophrys sphegodes* and the uncommon *Epipactis microphylla*. Of these, *Orchis purpurea* is in prime condition in April and early May, while the others peak from mid May to the first days of June, along with *Ophrys apifera*.

Hum mountain

If this already seems like a small treasure trove of orchids, it only gets better when leaving Mostar and heading into the surrounding countryside. Hum mountain gave its name to 'Zahumlje', the ancient name for Herzegovina. It is visible from every area of Mostar. However, the mountain itself is not an area that tourists should explore alone as many minefields remain. During the war, Hum mountain was used by the Serbs in the spring and summer of 1992 when they used artillery and rocket launchers to devastate the city below. From April 1993 it became the site of heavy fighting between Bosnian Muslim and Croat forces until their ceasefire in 1994. But if a guide can be found, exploring Hum mountain is a richly rewarding experience.

From the top of the mountain there are beautiful views of the entire city and the mountains beyond. The scent of several species of sage and thyme, which are very abundant, fill the air. Large colonies of the attractive,

rare Mediterranean species, *Orchis pauciflora* are easy to spot. Their bright yellow flowers completely stain the landscape in places, and are beautifully interspersed with blue *Globularia* flowers, giving a pleasing contrast. This Mediterranean species peaks around mid to late April, and many specimens look unbalanced due to the diminutive plants and comparatively large flowers. I have yet to find so many in one locality; I have discovered them elsewhere, but it has always been in the form of one or two isolated plants.

Čitluk

If one continues past Hum mountain on the same road it leads southwest to the town of Čitluk, and Medjugorje just beyond it. Along the way and not far from the entrance to Čitluk is another ancient Mediterranean woodland, again composed mainly of pine trees. Here lies another treasure trove of orchids. The diminutive and charming *Neotinea maculata* occurs here, although as it is seldom more than 10cm tall it is easy to miss. I also

found the so called giant orchid, *Himantoglossum robertianum* (syn. *Barlia robertiana*) here, though by the time I visited it was clearly past its best and was down to its last few flowers. *Cephalanthera longifolia*, perhaps the most elegant European *Cephalanthera*, flowers here at the end of April and beginning of May. In addition to these, *Orchis purpurea* and *Ophrys sphegodes* (right) make an appearance – although I am doubtful that this is the true *O. sphegodes* and think it is a possible subspecies. I was unable to revisit the woodland at the end of May or start of June, so it is unclear if other, later flowering species occur here.

Across the road outside the wood, on rough grass between some dead trees that had succumbed to summer wildfire, one may find an unusual brownish *Ophrys* (p28). It seems to be at least a subspecies of *O. sphegodes* as it consistently has smaller flowers and more of them. The plants are all short despite the flower variation, and have a slender stature, so are elegant and floriferous. Not far away, large



Mount Velež (1,969m) viewed from the top of Hum mountain

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An unusually-coloured *Ophrys sphegodes*

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Orchis purpurea

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An unusual spike of *Orchis purpurea*

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Large colonies of bright yellow *Orchis pauciflora* completely stain the landscape

Dino Zelenika



A green-lipped *Orchis pauciflora* on Hum mountain

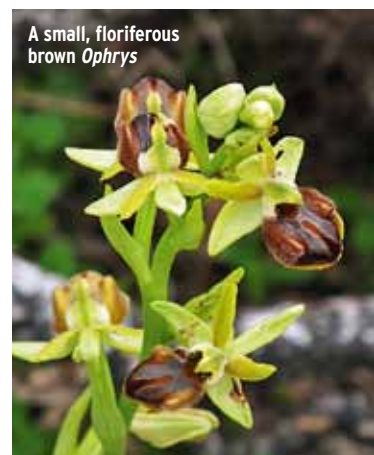
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Hum mountain must be visited with a guide

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A pale form of *Ophrys scolopax*



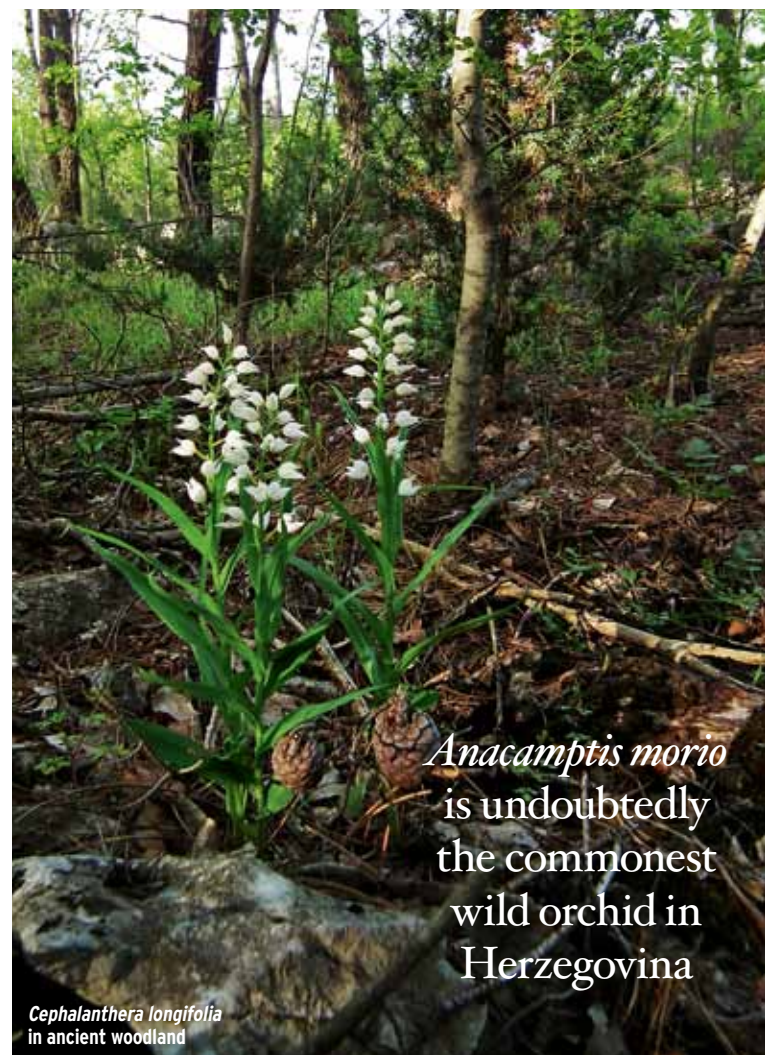
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colonies of *Anacamptis morio* occur, this is definitely the commonest wild orchid in Herzegovina. It is also hugely variable, the flowers and whole spikes occur in a wide range of shapes, and the flowers range from pale pink in colour to the deepest purple.

Medjugorje

Just beyond the town of Čitluk is the village of Medjugorje, though these days it feels more like a town. It is here that in 1981 a group of children allegedly saw the Virgin Mary on a hill above the village. Among other things, she was said to have predicted the coming of war to the region. These children began to receive apparitions, which as adults they still receive to this day. Before long, Catholic pilgrims and tourists from all regions of the world began to come to Medjugorje. Italians, French and English people, and those from as far afield as Brazil and Malaysia, are definitely the norm, not the exception. It can be difficult to hear the native language, now officially called Bosnian-Croatian-Serbian (BCS), being spoken on the street. Recently, foreign nationals have begun to buy property and set up businesses here, which has made Medjugorje one of the most cosmopolitan areas of the country.

Unknown to many is that Medjugorje is rich in orchids. Just walking the streets in the urban area one can find many *Anacamptis morio* growing in grassy roadsides in April and May. On Apparition Hill, where the Virgin Mary was alleged to have appeared, there must be hundreds of *Ophrys scolopax*. To see them all in full bloom is simply spectacular. Curiously, while there is significant variation in the shape and pattern of the flowers, they are all a similar shade of pink. The examples I found in the wooded location in Mostar had a much wider spectrum of colour despite there being fewer plants, they ranged from almost

pure white to a very deep magenta. The reason for this is not clear.

Aside from lots of pilgrims and along with yet more *Anacamptis morio* and (literally) one or two *Orchis pauciflora*, I found some spectacular specimens of the monkey orchid, *Orchis simia*. One was a particularly huge specimen which dwarfed the other three. The next day, I climbed another hill near the village of Miletina, which is a short walk from Medjugorje. Here I discovered the uncommon *Orchis quadripunctata*, so called because it usually has four spots on the lip, although this is not always the case. I also saw the famed Jersey orchid, *Anacamptis laxiflora*. The discovery of the latter was a surprise, for it was in a dry locality where

charred vegetation revealed that there are frequent wildfires. I had always imagined it to prefer growing in wetter localities, yet there it was thriving in the dryness of the Mediterranean.

The Kravice waterfalls

Towards the Croatian border and the town of Ljubuški are the spectacular Kravice waterfalls. The water is warm and perfect for swimming in summer, it is a beautiful, deep blue that seems to shine. Along its edges are shrubs, and underneath them more *Ophrys scolopax* grow. This does not seem to be an uncommon species. Down the road and downstream the river carves a pretty valley into the surrounding bare hills. On the top of one of these hills I found a large colony of *Orchis*



Dino Zelenika



The spectacular Kravice waterfalls, where the glistening water is warm enough for a summer swim

quadripunctata just coming into flower in late April. The view from the top is another spectacular one.

Čabulja and Velež mountains

In June I returned again and explored the immediate mountainous vicinity around Mostar – Čabulja mountain to the west, and Velež mountain to the east. I discovered many specimens of the local, Balkan endemic species *Anacamptis coriophora*, along with *Neotinea tridentata* (syn. *Orchis tridentata*), and large specimens of *Anacamptis pyramidalis*, the famed pyramidal orchid, among others.

The Bosnian region

Soon after, I headed to the pretty little town of Fojnica, west of Sarajevo. It was founded in the Middle Ages in a lush green valley between imposing mountains. Typically for Bosnia and Herzegovina, the town's large Roman Catholic monastery and adjoining church, which date from the 14th century, are almost next door to the

oldest mosque, Atik mosque, built in 1550. The medieval core survives and looks similar to how it would have done several hundred years ago. The monastery museum houses many fascinating exhibits from medieval and Ottoman times. Kozograd, the medieval fortress above Fojnica, was where Queen Katarina, Bosnia's last

and most famous Queen, was said to have taken refuge from the Ottomans in 1463 prior to her permanent exile to Rome as their invasion train rocked the country.

Fojnica's mines, which held gold and silver, made it a wealthy place, and caravans travelling between Ragusa (Dubrovnik) and Constantinople exported these goods while bringing other commodities to the town. The caravan routes still exist and one is able to travel along them in deep, dark woodlands above the town. Despite serious skirmishes in 1993 between Bosnian Muslim and Croat forces, the town and surrounding countryside is not mined so one can walk freely.

In these woods, huge numbers of *Platanthera bifolia*, *P. chlorantha* and *Neottia nidus-avis* occur. It was surprising to see variation in *N. nidus-avis* – it is something which is poorly documented, but some plants had very brown flowers while others were much more yellow. In addition, some spikes and flowers were tightly



Orchis quadripunctata near the waterfalls



The habitat of the pyramidal orchid, *Anacamptis pyramidalis*, in the mountains near Mostar



A wide-petalled *Platanthera bifolia* at Fojnica



Anacamptis coriophora near Mostar



A pale-coloured *Dactylorhiza* at Fojnica



A floriferous *Dactylorhiza* at Fojnica



A dark-coloured *Dactylorhiza* at Fojnica



A light-coloured variant of *Neottia nidus-avis* at Fojnica



Gymnadenia conopsea at Fojnica



A white variant of *Gymnadenia conopsea* at Fojnica



Neottia ustulata (syn. *Orchis ustulata*)



Traunsteinera globosa (syn. *Orchis globosa*) on Mount Ozren



An all white *Dactylorhiza* on Mount Ozren



One of the greener *Platanthera chlorantha* at Fojnica



The frog orchid *Dactylorhiza viridis* on Mount Ozren



Dactylorhiza sambucina on Mount Ozren

bunched, while others were more spaced out, elongated and graceful. Both the *Platanthera* species were variable in colour, some completely white, some with varying shades of green. I discovered somewhat smaller populations of *Cephalanthera damasonium*, and what I think was *C. rubra* but something had destroyed the flowers so I could not be sure. I also found at least one species of *Epipactis*, but as none were in flower it was not possible to determine the species.

In meadows between the woods there are large numbers of *Gymnadenia conopsea*, as well as *Neottia ovata* (syn. *Listera ovata*), both of which seem to thrive here. In some places *G. conopsea* paints the entire meadow pink. *Dactylorhiza* plants that seem to be related to *D. fuchsii* also occur here, though it is impossible to say what they are for there is enormous variation between them, and it is possible that they are one huge mass of hybrids.

Mount Ozren

My last stop was the city of Sarajevo. I teamed up with Professor Dubravka Soljan of Sarajevo University. She is a seasoned botanist, biologist and field researcher, who has documented almost every plant species in the mountains of Sarajevo, including the orchids. We went together to Mount Ozren, which directly overlooks Sarajevo. It is suprising that Sarajevo's mountains tend to have only small, or relatively small, areas that are mined, so for the most part one can walk freely. Sarajevo was under a vicious siege for three years by Serb forces who destroyed or seriously damaged practically every section of it with artillery, anti-aircraft guns and rocket launchers. The exception is Mount Treskavica, which is heavily mined in many areas; travel there is not advised for the casual tourist.

Mount Ozren has very large populations of the endemic *Lilium*



An orchid meadow on Mount Ozren

bosniacum, a bright yellow lily which is the national flower of Bosnia, and first appeared on its flag in the Middle Ages. It shares its habitat with *Traunsteinera globosa* (syn. *Orchis globosa*), a widespread but locally rare European species. On Mount Ozren though, it is abundant. Further on we found *Dactylorhiza sambucina*, whose flowering season was coming to an end, *Neottia ustulata* (syn. *Orchis ustulata*), the frog orchid *Dactylorhiza viridis* (syn. *Coeloglossum viride*), *Dactylorhiza majalis*, *Anacamptis coriophora*, *Anacamptis morio*, *Neottia ovata*, *Gymnadenia conopsea*, *Platanthera bifolia* and *P. chlorantha*, *Epipactis* species (not in flower), and several mysterious *Dactylorhiza* plants whose identity remains inconclusive, including a strange all white variant. *Nigritella nigra*, *Orchis mascula* and *Cephalanthera longifolia* also occur here, though due to time restrictions we were not able to search for them.

The future

My return from Mount Ozren marked the conclusion of my 2011 trip, although there is evidently much

work to be done, and many more localities to explore to bring to light a full picture of the wonders of Bosnian and Herzegovinian orchids. There is extraordinary biodiversity here and it never fails to shock me that biologists and botanists ignore this entire area. As well as orchids, many herbs are abundant, and important members of *Liliaceae* and *Campanuloideae*, among others. Due to the lack of, and unsuitability of, intensive farming with chemicals, and the country's low population, they are likely to stay for at least the near future. Many rare animals, such as the brown bear, wild boar and Eurasian lynx occur here too. Yet this region is often overlooked, in culture and history, in favour of that of Italy, Greece or even Bulgaria. My hope is that one day people in Europe will realise that a true gem of spectacular beauty and biodiversity exists in their backyard, and that they will go on to cherish and preserve it. ■

DINO ZELENKA is a BOC trainee judge. He has grown orchids since the age of 13, and would eventually like a full time career in the plant world