

**LISTEN CAREFULLY:**

bio-acoustician Bernie Krause, author of *The Great Animal Orchestra* (bottom), which explores the calls of animals such as the North American beaver (below)



**B**ack in April 1996, a friend and I boarded a small boat on the Sekonyer river in Kalimantan, southern Borneo. From there we headed upstream from the small village of Kumai and plunged deep into the Indonesian rainforest. Ostensibly, we were heading there to view great apes in the semi-wild at the Camp Leakey orang utan rehabilitation centre – at least, this is what we told each other and anyone else who would listen – but, if I’m being really honest, we were more smitten with the idea of sticking on bush hats and boots, going unshaven and, as our boat made its way through increasingly dense foliage, imagining ourselves as Martin Sheen and colleagues on the set of *Apocalypse Now*.

Impressive eh? Well, we certainly thought we were... But, of course, the wildlife itself soon put us in our place. Sleeping out on deck on our second night in the jungle, I was woken at dawn by the most extraordinarily bewitching sound. Beginning with a couple



of ‘whoops’, it soon developed into long, high-pitched howls – first one and then, echoing across the tops of the trees, another. This ethereal duet carried on for around 20 minutes, during which I sat there transfixed. If there is any sound in this world

more haunting than the dawn call of a pair of gibbons, I have yet to experience it.

Recently, composer Richard Blackford made a similar journey to mine, in his case in the Mulu national park in the Malaysian part of Borneo. His purpose, however, was considerably more clearly defined (and infinitely less frivolous) – as part of his research for his planned *The Great Animal Orchestra*, a new 25-minute symphonic work that would incorporate recordings of wildlife noises as part of a full orchestral score, he

wanted to hear some of those sounds first-hand. The gibbons of Borneo made an obvious starting point, but he soon had his ears opened to much besides.

‘We were miles from anywhere,’ Blackford tells me. ‘It was particularly at night time that it was most incredible. The frogs there make these amazing noises, while the leaf insects blow







# WILD *at* HEART

A groundbreaking book about the sounds of the natural world has inspired composer Richard Blackford to bring the calls of various birds and beasts into the concert hall. *Jeremy Pound* finds out more

themselves up and then expel the air making this wonderful sort of sighing sound. As they sing to each other, and make room for each other's sounds, it really is like a kind of symphony going on.'

Blackford, a British composer who learnt much of his trade as assistant to Hans Werner Henze in Italy, did not pluck his idea for *The Great Animal Orchestra* out of the blue. It was, he explains, inspired by reading the book of the same name by leading soundscape recordist and bio-acoustician Bernie Krause – or, more to the point, on hearing a serialisation of it on BBC Radio 4. In the book, Krause, who over 45 years has recorded thousands of species in their natural habitats, explains how sounds made by animals and birds have adapted over time to fit within the specific environment they are in: with the other fauna around them, the acoustics of their habitat, the changing weather and seasons and so on. What Krause is primarily interested in is not the individual sounds

made by living organisms (wonderful though they are), but what he calls 'biophony' – the overall picture of how they fit together. It's a concept that got Blackford thinking.

'Radio 4 supplemented the readings with some of the wildlife recordings,' he says. 'They

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**'As leaf insects sing to each other, it really is like a symphony'**

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were playing the gibbons singing to each other and I thought it was the most magical sound I'd ever heard. I went out and bought the book and, after reading it, I thought *The Great Animal Orchestra* is such a joyous name for a piece of music – I wonder whether there is a piece to be written? I got in touch with Bernie himself and, after I had sent him a

synopsis of what I had in mind (actually, I didn't have a clue at that stage) and discussed it with him on Skype, he said "I think you should get over to California and we'll talk about it." That's how it started.'

Krause's book is a fascinating read, very engagingly written. While much of *The Great Animal Orchestra* is devoted to his experiences of sitting out for hours, often alone, and recording soundscapes from windswept tundra wasteland to densely populated tropical rainforests, it also goes far beyond this. Subjects tackled range from thorny environmental issues – what, for instance, can analysis of a habitat's changing soundscape tell us about man's destructive impact that the naked eye can't? – to the strangely elusive question of the extent to which the notes and rhythms of the natural world have shaped our own musical thinking. He is perhaps best described as part-scientist, part-musician – though he has spent the last four decades sitting out in fields and forests with ►



# NATURAL TALENT



**PENTATONIC CALLER:** the Common Potoo

*Five creatures heard in Blackford's The Great Animal Orchestra*

## Common potoo

This nocturnal bird from Central and South America has a particularly distinctive call – six notes of the pentatonic scale, sung in descending order. The sound of the potoo is not dissimilar to that of the South American wind instrument, the ocarina.

## Musician wren

A native of the Amazonian rainforest, the musician wren's onomatopoeic name in Portuguese – 'Uirapuru' – was chosen as the title of an orchestral work by the Brazilian composer Villa-Lobos. The bird repeats the same intricate melody again and again and, if interrupted, will simply wait before picking up from where it left off.



## Pacific tree frog

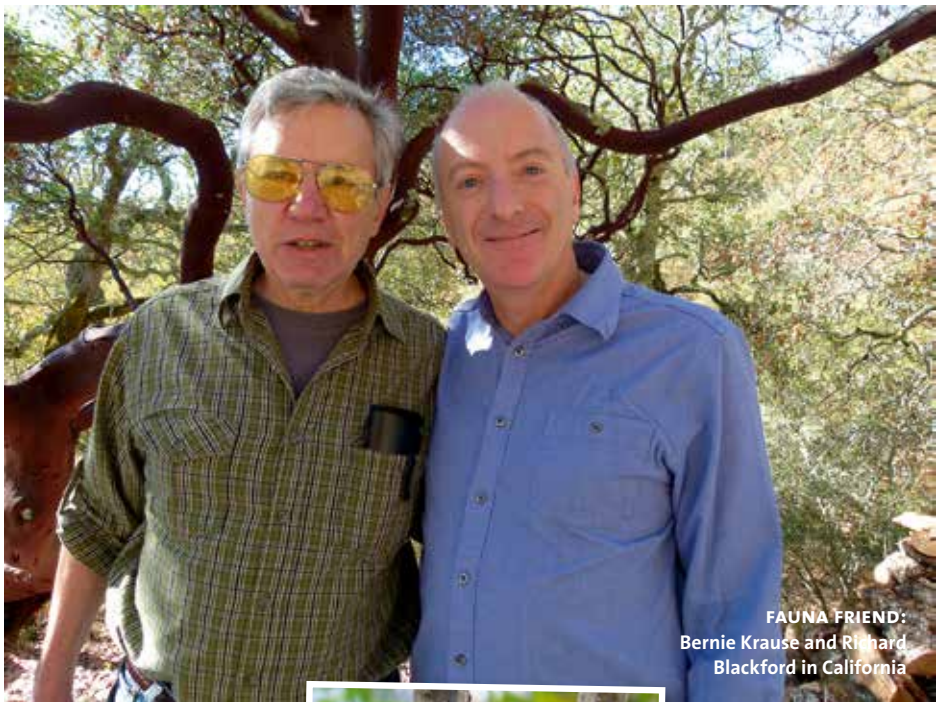
Rather pleasingly, this amphibious resident of coastal California (left) is also known as the Pacific chorus frog. This alternative name is due to the way that, come breeding season, male frogs synchronise their call to attract the attention of females.

## Gorilla

According to Bernie Krause, the roar of an agitated male gorilla – not a beast that one really wants to get in the way of – is loud enough to temporarily damage one's hearing. Female gorillas, meanwhile can often be heard chuntering along in a sing-song style. In *The Great Animal Orchestra*, we hear gorillas beating their chests and munching leaves.

## Pileated woodpecker

With its magnificent red crest, this North American bird (right) was probably the inspiration for Disney's Woody Woodpecker character. Its loud call is akin to a mischievous cackle.



**FAUNA FRIEND:** Bernie Krause and Richard Blackford in California

mic in hand, his original environment was the recording studio, firstly as a guitarist then as an expert in electronic sound for film and TV.

Krause himself tells me that he wasn't entirely surprised when Blackford turned up with his suitcase in October 2012. 'I'd always thought that somehow or other something would be done musically in relation to some of the themes in the book,' he says. 'As a classical musician myself I was looking for ways to do just that. But Richard is a much finer musician and much more contemporarily schooled than I am. When he came, we spent a week going over a whole archive of material that I had prepared, and he chose different samples to use. He took back a whole palette of soundscapes with him.'

And that, for Blackford, is where the fun really began. Over the following months, he whittled down Krause's sound samples further, and set about incorporating them into a five-movement orchestral work, covering all four corners of the globe and all manner of species as he went. Heralded by the Bornean gibbons, the opening movement introduces us to the sound of Arctic seals and a humpback whale; North American frogs and woodpeckers greet us in the lively second movement as,



**JUNGLE SINGER:** the gibbon's howl is hauntingly musical

from the same continent, do howling wolves and a solitary, mournful beaver in the elegiac third; it's off to Africa for the growls of elephants and grunts of gorillas in the fourth before the weird and wonderful world of Central American birdsong brings us to a glorious finale.

Of those various creatures, only the fifth movement's birds produce something that could in any way be described as a tune, which Blackford

mimics directly using instruments in the orchestra. Others influence the course of the music in different ways. 'Some of the sounds are more ambient,' explains the composer, 'while others are definitely pitched or in definite rhythms. If you listen to cicadas or frogs phasing with each other, to the uninitiated it's just a load of noise. But as you listen to it, you start to detect patterns and cross rhythms. Bernie kept reminding me not to fall into the temptation of just taking trophy samples – shining the spotlight on them and saying "now this is all about the Hyrax" or whatever. I had to think about context, where each sound fits and what musical processes I would go through to represent the context and the biophony. I had to be true to that rather than just say "this is a terrific sound, I'm going to feature it in a piece in D major".'

In performance, the wildlife samples are programmed into and activated by an electronic keyboard that is not at the front of the stage, but tucked away within the orchestra – the work, after all, is not intended to be some sort of concerto for animal sounds, but a seamless integration of natural and orchestral soundworlds. In most instances, one long press of a key will produce a complete animal or bird call, but in the case of the second movement's multiple frogs, each different frog is assigned to a different key, meaning that they can be played just like any other instrument in the orchestra, at whatever tempo the conductor chooses.

The notion of placing wildlife sounds within an orchestral structure is not as strange as it might seem, insists Krause, as this is exactly what wildlife itself does, hence the title of his book. 'The very organisation of sound that composers use is based on the organisation of sound of the proto-orchestra that exists in the wild,' he explains. 'When you examine how sounds are structured in

in a different way. I live in the countryside and when I hear things when I go on walks, I hear them completely differently than before. I don't necessarily listen to them in a musical way and think "how can I incorporate them into a piece?" It's more a case of a sense of awe at what there is all around you. At the same time, though, there is sadness about how much noise pollution there is everywhere.'

Not just noise pollution. As I discover when talking to Krause, the very same spot in Borneo where I heard my gibbons was where, a few years earlier, he had recorded the ones played at the beginning of *The Great Animal Orchestra*. It is, sadly, also an area where the river has become polluted as a result of mining, and where rapid deforestation could

see the sounds of the gibbons, and all that surround them, become considerably rarer.

Blackford, too, reflects that his piece celebrates the sounds of wildlife at a time when those sounds are on the wane. 'Recently I was looking at an appalling statistic for the African elephant – an animal that features in my piece – which says they're being killed to such an extent that in 100 years they will be extinct. I'm not really one to stand on the soap box and say "Save the elephant" but, I hope, any piece like *The Great Animal Orchestra* might at least bring awareness to people.' ■ *Blackford's The Great Animal Orchestra, plus his new orchestration of Saint-Saëns's Carnival of the Animals, will be reviewed in our Christmas issue.*

## 'I had to think about the context, where each sound fits'

the natural world by looking at spectrograms [graphic illustrations of recorded sound, in which the lowest sounds are shown at the bottom, the highest at the top] you can see how clearly organised it is. For example, if you look at a spectrogram of the Bornean rainforest, you'll see that the gibbons are located at the bottom because they have a lower note in the orchestra, then you'll find birds just above them, and then frogs above those, and then insects above those. They all have their own niche, and are all partitioned just as you'd find on a musical scores where the instruments go from the lowest at the bottom of the page to the highest at the top.'

Commissioned by the Cheltenham Festival, Blackford's *Great Animal Orchestra* – or, to give it its full title, *The Great Animal Orchestra: symphony for orchestra and wild soundscapes* – enjoyed its world premiere there in July. Performed by the National Orchestra of Wales under Martyn Brabbins, it has since been recorded by the same forces for the Nimbus label. Krause and Blackford are now working together on another project, a ballet, and the composer says that, since immersing himself in Krause's world, his whole appreciation of the sounds around him has changed. 'Bernie's taught me how to listen

## BEASTLY THOUGHTS

*How other composers have represented wildlife in their music*



**NATURALLY INSPIRED:** R Murray Schafer's opera is performed by a lake; Rautavaara (below) included recordings of birds in *Cantus Arcticus*

but merely represents them with suitably characteristic tunes. For Saint-Saëns in imitative mode, turn instead to the second movement of his Piano Concerto No. 5, where he portrays the chirping of frogs as a boat moves gently down the River Nile.

As we explored in our September issue (see *Feathered Friends*), birds in particular have sung their way into various pieces over the years, from the simple two-note call of the cuckoo in the likes of *Beethoven's Pastoral Symphony* to *Messiaen's* closely observed imitations of all manner of species in works such as *Catalogue d'oiseaux* (1958).

But what about including actual recordings of real-life animals and birds? While no one has done this as extensively as Richard Blackford in *The Great Animal Orchestra*, he is not the first. In *Respighi's Pines of Rome* (1924), for instance, we hear the call of the nightingale just before the Romans march down the Appian Way. And then, in 1972, Finnish composer *Einojuhani Rautavaara* included recordings of common cranes in his *Cantus Arcticus* (see *Letters*, p8).

Finally, mention must be made of *R Murray Schafer*, the US composer and dedicatee of Bernie Krause's book, whose music has gone beyond imitations and recordings by including the wildlife in person – Schafer's 1981 opera *The Princess of the Stars* is designed to be performed on the edge of a lake just before dawn, so that the audience is surrounded by the sound of birdsong before the music itself begins.

GIVEN THAT IT IS all around us, it is surprising how comparatively rarely the sound of the natural world has featured in classical music – while there are a number of examples, one might have expected such an obvious source of inspiration to have been tapped a good deal more often. As a rule, too, the composers who have imitated wildlife in one way or another have tended to pick out individual voices rather than portraying entire habitats.

Ironically, the most famous depiction of creatures in music, *Saint-Saëns's Carnival of the Animals*, makes little attempt to replicate the sound of its subjects,

