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# SOUNDING SEVERN 

LANDSCAPE AND MUSIC

Elizabeth Mary Heighway

# OXFORD BROOKES UNIVERSITY 

Submitted in partial fulfilment of the requirements of the award of Doctor of Philosophy


Frontispiece
The Severn Bore, travelling left to right.

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## Guide

Still pictures were taken by Elizabeth and Terry Heighway on an Olympus Camedia C-5060 5.1 megapixel digital camera, with the exceptions acknowledged below. Videos were taken on a Panasonic 3CCD 3.1 megapixel digital video camera. Sound recordings were taken on a Sony NET MD Walkman and a Fostex FR-2LE field memory recorder with an Audio-Technica directional microphone. Hydrophone recordings were taken with a Dolphin Ear Hydrophone System.

An illustrated plan of the course of the River Severn is to be found at the front of the scores volume of this submission. (Meanings of place names are taken from A. D. Mills: A Dictionary of British Place-Names (O.U.P., 2003)).

A CD which contains the hydrophone recording taken under the Severn, a DVD which which contains the still pictures of the river and a DVD which contains the video clips of a journey down the Severn can be found at the back of the scores volume of this submission.

2 CDs of the music which forms part of the submission is to be found in the back of the thesis volume. Music which is not recorded live is produced on MIDI by Sibelius 4.

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Thanks to Hyperion and Delta Leisure Group Plc. for permitting their use here. Seagull cries from Sound.Bible.com, free Internet site.

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To Lavernock Point seagull cries also from Sound.Bible.com, free Internet site.

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#### Abstract

This research project set out to investigate the landscape of the River Severn, in particular the sounds created by the interaction between the river and its environs, and to create a series of original compositions that chart the relationship between geographical site and composed sound.

The questions that were posed were: what creative strategies and methodologies have composers used to engage with and represent landscape in their work? What is the relationship between site, composer, and new work? How are the impressions of the phenomena like the river, formed in the composer's mind, then recreated as music or sound?

It should be borne in mind that this has been a personal project. It has involved field recordings of the sound of the river, both under and above the water, and the recording of sounds activated by interaction with the landscape; studying aspects of the river itself, its history, underlying geology, and the complex social, economic, political and emotional interaction it has had with the people who live by it. It has also involved assembling resources on instruments not generally associated with orchestral music, to extend the palette of sounds, and examining ways of transference of behaviours such as river flow and cloud formations from the physical to the sonic.

I endeavour to explain how I developed my methodologies, derived from my own observations. The major part of the thesis comprises a critical commentary on the pieces of music I have produced, showing how these methodologies were employed. The pieces and their recordings are grouped into a suite, Severn Journey; representative trial pieces; a collage piece Severn Words of Wisdom, representing a journey down the Severn and Sounding Severn, a piece in five sections which shows many of my key methodologies at work.


## Chapter 1 Explaining the title.

> ... composers alone have the privilege of capturing all the poetry of night and day, of earth and sky, of recreating their atmosphere and of setting their mighty pulsations within a rhythmic framework.

Achille-Claude Debussy ${ }^{1}$

The title of this project was chosen very carefully. I was brought up in Scarborough, where the only real river was hidden in an underground culvert. There was also a cut from the River Derwent, but about 20 metres from the sea it frustratingly disappeared round a bend into private land ${ }^{2}$. When, however, I came to live at Wainlodes Hill behind the Red Lion Inn, suddenly I was twenty yards from the Severn, a huge volume of heavy, moving, pulsating water, and I was entranced. Also, it was open to me to explore, as in the middle ages it was classified as "the King's high stream of Severn", on which anyone could travel unhindered ${ }^{3}$. I began to realise the psychological power of the river over Severnsiders when in the mid-1970's Julie Mitchell, the granddaughter of the legendary Mrs Mitchell the landlady of the Red Lion - was christened on the river bank, with water that the vicar had taken from the Severn and blessed. I still remained hooked when spring came, the river flooded over the road and I was not just by the river but actually in it.

The word "sounding" has a number of relevant meanings. It can, obviously, mean "singing the praises of". Although water passes the whole length of its course in about three days, depending on the speed of flow, the river is a constant feature of the landscape, sometimes unstoppably powerful and destructive (as in the floods of July 2007), yet at its source you can easily straddle it. It is a boundary - the Welsh name for the river, Hafren, means a boundary - a barrier and a highway all at once. "Sounding" can also mean "the sound of", ie the quality of the sounds the Severn makes, which form a central strand of this thesis. It can also mean sounding such as is done by scientists, for example, for the Severn Port Authority and the making of Admiralty charts; measuring, defining and assessing all geographical, historical and geological aspects. So as well as doing much reading, I have studied photos, aerial photography and maps, used videos (both mine and those commercially produced), sound recordings and hydrophone recordings to "sound" the river. Perhaps most importantly, I have also done much long-term listening and observing. Above the water, flowing water does not really sound, except at a waterfall or when the Bore passes, unless it is made to sound by animal activity or the flow is altered in some way by humans. However, the environment forms a series of soundworlds which
can be studied: above the water, they vary dramatically according to the weather, time of year, the type of landscape and the presence or absence of people. Under the water the sounds are numerous, strange and surprising, and can be recorded by hydrophone and analysed.

Music and landscape, the subtitle of this project, also needs some clarification. I hope to show that these compositions in the programmatic tradition are a direct result of my contact with the river and with the feelings and emotions it has produced in me. It is a very personal narrative.

# Chapter 2 A brief look at the working practice of some "programmatic" composers and the Minimalist movement. 

## Achille-Claude Debussy (1862-1918)

$$
\begin{aligned}
& \text { "The actual practice of musical composition made me realize that the } \\
& \text { main obstacle facing a musician lies in the difficulty he has in controlling } \\
& \text { his own inventions." } \\
& \text { Iannis Xenakis }{ }^{1}
\end{aligned}
$$

None of the programmatic composers whose work I chose to examine apparently formed a "school" of followers. This is quite logical, because a true "programme" composer experiences his or her surroundings in a totally individual way, and has an equally unique way of translation this vision into music. Any "feeling" that is consciously shared or passed down, like nationalism or a love of nature, cannot by definition be a composer's own personal vision, and so the music produced is not truly programmatic by my definition, although it may be hugely powerful. Debussy was one composer whose work did enter new auditory worlds to try to express his experience. Certainly the influence in Debussy's music of non-Western instruments (like the gamelan), different types of scale such as the whole tone scale used in Les Voiles and novel uses of chord progressions such as the second-inversion chords used in La Cathedrale Engloutie ${ }^{2}$ heralded a liberation of expression for all composers who came after him. Although Debussy did not write recognisable sonatas or symphonies he did use precise compositional techniques to form a firm framework to his music. "Debussy would sometimes claim, sardonically, that of course his music was without structure ... the interplay of structure and detail was to be a subject of his constant consideration" ${ }^{3}$. Writing the music of the river I didn't see traditional forms as relevant to their expression, but small patterns in water bubbling, in waterfalls, in rain, and overarching patterns in the flow of water in the landscape did appear (perhaps because of the subconscious need for order in the human psyche) and would find their way into the music. It may be that Debussy worked in a similar way: "Debussy's works offer numerous examples of what ... could be called systemic thinking. Texture is built up from repetitions of various elements - melodic scraps, trills, runs ... the combinations that repetitions produce have a connexion with the innovative harmonic practices for which Debussy is famous." ${ }^{4}$.

Debussy's thinking was tuned to the French $19^{\text {th }}$-century Symbolism movement and he often worked with the symbolist poets, including using one such poem as the inspiration for L'apres-midi d'une faune. Symbolism was a later nineteenth century movement that originated in romanticism, but was a reaction to the realism of impressionism and tended to be the mystical and occult and dealt in "symbols ... to express an allegorical meaning" ${ }^{5}$. Many of the composers who wrote programme music had a deep interest in literature, but to pass on emotions roused in him/her by poetry is in fact passing on the poet's emotion "second hand", which I think is actually culturally compromising. He created some of his soundworlds, though beautiful, from another person's vision.

Debussy, however, did create some soundworlds of his own, but they were from his own imagination, not reality. For example, the far east, as depicted in Pagodes, was "imagined by Debussy through his memories of the gamelan players at the 1889 Exhibition". ${ }^{\circ}$. In addition, he once declared, "Only souls without imagination go to the country for inspiration. I can look into my garden and find there everything I want" ${ }^{7}$. So the emotions he stirs in other people through these methods of composition, though perhaps his true reactions, were obtained through culturally-created means and were not "real". Debussy's position within his culture warns against creating other people's emotions in an audience, however they are absorbed. One must concentrate on one's own.

## Sir Edward Elgar (1857-1934)


#### Abstract

"[A]s we approached ... My tongue and throat were dry and my heart aflutter with nervousness ... The composer's wife ... began to speak enthusiastically and a little extravagantly about her wonderful husband and his work ... I rose and turned with suddenly thudding heart to be introduced to the great man ... such was the dominance of his personality that I always had the impression that he was twice as large as life ... he suggested that we might like to have a glance at a huge kite that he had recently constructed."


$$
\text { Arnold Bax }{ }^{8}
$$

This was Bax's reaction to a meeting with Elgar in 1902. In 1930, however, he wrote to Harriet Cohen, "I have started scoring my new symphony, and feel rather appalled by the magnitude of the task - especially drawing all those damned bar-lines. I don't wonder that Colonel Bogey gave up composition when Lady Elgar was no longer there to do all that for him." ${ }^{9}$. "The Colonel" was, of course, Elgar himself.

Most composers who lived a long life have eventually gone out of fashion, as Elgar had done with Bax, or as J. S. Bach did with his own sons. Yet a composer whose work gives
a true emotional picture of what he/she experiences must always be able to produce something new and unique. The reason they become "obsolete" (at least for the time being) could be that the cultural landscape that they once had in common with their audience has shifted with time - and can music whose impact depends on having the same sub-cultural outlook as the listener be called programme music?

Elgar was working at a time, forty years after the industrial revolution in England, when there was a zeitgeist of nostalgia for the past. The changes had come so fast, people had been left without roots; there was a general longing to return to the countryside. Elgar, however, has suffered from a disadvantage that has afflicted many English composers (and, no doubt, many others too) in that first biographers were too close in time and had too many cultural axes to grind - and to belong to the "in-crowd" you must support and perpetuate the myth. In an early piece of myth-building, F. G. Edwards wrote in 1900, " $[\mathrm{H}]$ e has a tiny cottage in the woods" where "he makes sketches and orchestrates amidst surroundings that are as beautiful as they are tranquil and brain-refreshing, ${ }^{10}$. However, these surroundings are never explicitly identified as an inspiration of Elgar's compositions. Interestingly his "inspiring" countryside retreat comes under the sub-heading "Pastimes" in the article - which raises the same suspicion as the great kite Elgar had built in the first extract. Was the production of music which his biographer strongly implied to be "programme" in nature just another pastime? It cannot be said for certain whether Elgar approved of the article but one must suppose he did. By 1900 his influence was so great that he would certainly have issued a vociferous counterblast to any bad publicity.

I think it is essential to have built up a relationship with the place you are going to evoke in your music - hence the giving of local titles to his brass band composition pieces (as in Elgar's Severn Suite of 1932) doesn't make them programme pieces. I also think this must be a relationship worked out over time with a particular soundworld or set of soundworlds, not a general idea of "the sea" or "mountains". Too often pieces like this fall into stereotypical forms of expression.
"He [Elgar] deliberately refrained from aligning his work with the younger generation of English 'pastoral' composers ... When viewed soberly, the connection with nature threatens to dissolve into hopeful assertions that gain credibility through constant repetitions" ${ }^{11 .}$ The historian Jeremy Crump also suspects that "the association with nature must be explained with reference to the history and politics of the period [the 1930's] rather than any intrinsic properties of the music., ${ }^{12}$.


Picture 1. Commemorative Mug from the Elgar Birthplace Museum.

Some of Elgar's greatest music has a heart-breaking sadness to it, like the 'cello concerto which genuinely arose from his revulsion to the first world war. Ernest Newman recalled, "Elgar told me that as a boy he used to gaze from the school windows [at Spetchley Park] in rapt wonder at the great trees in the park swaying in the wind; and he pointed out to me the a passage in which he had recorded in music his subconscious memories of them" ${ }^{13}$. He often referred to a memory of one particular outing in his childhood when he had tried to write down the ambient sound by the river and declared "I am still at heart the dreamy boy ... by the reeds by Severn side" ${ }^{14}$. However, he rarely claimed to reproduce his reactions to these natural things in his music with the object of making his listeners feel as he did about them, so his programmatic credentials cannot be thus proven. The often-quoted "The trees are singing my music - or have I sung theirs?" characterised (perhaps ironically) by Riley as "wistful" ${ }^{15}$ and shown on a commemorative mug from the Elgar Birthplace Museum (picture 1) does not, I think, necessarily show a true emotional bond, but rather a desire to appropriate nature to boost his own social status. I think we are not objective enough yet to form a balanced judgement on Elgar, who did seem to have genuine empathy for both nature and events which sometimes showed in his music, but was perhaps too inhibited by his position in that particular culture to admit it. Ideally, the link between the programmatic object and the music should be clearly linked in time.

## Sir Arnold Bax (1883-1953)


#### Abstract

"The sudden death of Sir Arnold Bax, Master of the Queen's Music, means a great loss to a delightfully companionable man's friends ... He made no secret that his music was out of fashion. Nor did that worry him, for he knew that he was a romantic and had no desire to change his spots, as he might have put it with that ironical humour of his which included a large measure of self-recognition."


$$
\text { Eric Blom }{ }^{16}
$$

Bax was always rather self-obsessed. He wrote to his friend Tilly Fleishman, at the beginning of World War II, "that all these fearful events are very distracting ... I cannot adapt myself well to these conditions. I have written nothing at all since August ..."17. However, quite early in his career he (like many others) was bowled over by Yeats's poetry, becoming totally immersed in the second-hand corporate reflective nostalgia of Ireland, until the Easter Uprising, with real blood and betrayal, brought him back sharply to reality. He even built an Irish alter ego (complete with a pseudonym and a knowledge of Erse) into which he could slip, and he wrote poems in the style of his hero.

Nonetheless, his private letters suggest that he genuinely had a deep emotional response to the beauty of Ireland and the sea in particular, although it was started by a romantic fiction. This fiction, though not his love for the landscape, did fade later on when he transferred his allegiance to "the North". Elgar had a "phase" of subscribing to that subculture too, at the time when he wrote King Olaf. In the programme note to What the Pine-Trees Knew Bax wrote, "in planning the composition I was thinking of two landscapes dominated by the pine-trees ... thinking, too, of the Norse sagas and the wild traditional legends of the Highland Celt ... But this work is concerned solely with the abstract mood of these places" ${ }^{18}$. Perhaps Bax also regarded the essence of a real place to be the truest source of his music, and the "Norse Sagas" and the rest to be a distraction.

There is evidence that Bax wrote Tintagel, widely appreciated as one of his most evocative programme works, in the sexual heat of his new love for Harriet Cohen. His programme note states that, "This work is only in the broadest sense programme music. The composer's intention is simply to offer a tonal impression of the castle-crowned cliff of ... Tintagel" ${ }^{19}$; but "while ostensibly writing a mood evocation of the castle, the sea and its legendary associations, [he] was in fact celebrating his own passion" ${ }^{20}$, as he was meeting Harriet constantly while staying in Cornwall with his wife and family. However, perhaps Bax's Fourth Symphony, written in between the Irish and the Northern periods, could be
called more truly programmatic, for "[i]n fact for the only time in his symphonies he publicly admitted that he had been inspires by the sea, and that the beginning of the first movement meant to him 'a rough sea at flood-tide on a sunny day, and most of the work is nature-music. ${ }^{,}{ }^{21}$. But its classification as a programme work also seems (by my definition) compromised by the sea-music being inextricably tied up with his love for Mary Gleaves, his latest passion, just as that of Tintagel had years ago about Harriet Cohen. "At the height of an earlier passion Bax had produced gloriously ecstatic seamusic. Now ... it is surely no accident that ... his passion for Mary should be subconsciously celebrated in a vivid and exciting vision of the sea",22. "I would love to bathe with you in the sea some day with our two naked bodies clinging together in the water ... I am sure we would find such extasy [sic] there! ! ${ }^{23}$. Perhaps I must amend my tentative definition to acknowledge then that though other, more transient passions may get in the way, if they lead you to a genuine and untouchable passion one must allow them their due place in the mix and the composer's own personality must also be a legitimate part.

Iannis Xenakis (1922-2001)
> "Music is Architecture translated from space to time - for in music, despites the deepest feeling, there is also a vigorous mathematical intelligence."

Iannis Xenakis ${ }^{24}$

Xenakis used the methodology of other art forms (for example, stochastic processing of musical "data" - "stochastic" is a term given to applied probability theory) as opposed to using their emotion at second hand, to work out his music. "Art, and above all, music has a fundamental function ... to draw towards a total exaltation in which the individual mingles, losing his consciousness in a truth immediate, rare, enormous, and perfect ${ }^{25}$.

In the works of Xenakis, music and architecture were both constructed in the same way, either from "base-up" models or extrapolating from one detail; "Corbusier ... had designed a gargoyle and from that, the architecture of the whole house was derived ${ }^{\prime 26}$ was an event of which Xenakis obviously approved. One architectural feature which Xenakis designed with Le Corbusier was the use of undulating glass panes, which were used in many projects. "As interesting as it is elegant, it is a musical solution proposed by Xenakis to an apparently purely architectural polemic. Not surprisingly, Xenakis was developing similar concepts concurrently in his musical works - beginning with Metastasis (1953-54): by
arriving at a new formalization of polyrhythms based on superposed stochastic calculations. ${ }^{27}$. The pictures and subjects which affect him are widely different and perhaps not at the front of his mind, but in the ever-changing three-dimensional spaces which are continually created by the string glissandi of Metastasis, for example, he tempts the listener to come in and share his visions.

The architect David Lieberman recalls, "[I]n reading and re-reading [Iannis Xenakis's Music and Architecture] I have heard the rays of the sun as they dance on the mullions of the glazed walls in his daughter Mahki's garden. I have speculated on the magic of the filtered light in Corsica at both dawn and dusk ... ${ }^{28}$. Although Lieberman does not say that the music itself, but the written commentary on it, caused these emotional responses, Zenakis states that the emotions caused by being, especially, in places he loved as a child, stayed with him: "I had an infinite love of nature. I used to bike to Marathon ... I would stay there for hours on end listening to the sounds of nature, the cicadas, the sea. This was well before I read Debussy, who speaks so effectively of wind ... when I listened to nature's sounds, I already knew subconsciously that these noises were truly dignified and were part of music at large., ${ }^{, 29}$. This suggests that he created, consciously or unconsciously, genuine emotions evoked by soundworlds no longer immediately available - which I shall refer to again later on.

Xenakis also recalled advice from Messiaen: "Don't pursue traditional musical studies any longer, you don't need to. Just listen to music and compose., ${ }^{30}$. Whether it is a beneficial thing to avoid classical musical education is highly debatable -although I believe it frees a programme composer from many unnecessary constraints about what is "right". If you have learnt what traditionally is "right", then you may feel that everything that doesn't conform is "wrong" - a rather modernist, and limiting, view. However, to listen eclectically to music, which includes soundscapes too (think of Messiaen's listening experiences that led to the composition of Catalogue d'Oiseaux) was wonderfully constructive advice.

As I said before, genuine programme composers are unique in their internal transformation of a vision into music, and I suspect that no-one else could use all the unique skills that Xenakis could employ to listen to and absorb the natural world, to process it and to convert his feelings into music. "... [A]n astro-physicist does not create the galaxies he examines whereas a musician can, through the act of creation. My Diatope, for example, is galactic movement rendered accessible to man. Music, that child of number and sound, eye to eye with the basic laws of the human mind, is quite naturally the most privileged means of
expressing the universe's fundamental abstractions. Modern science brings us closer to a more original knowledge of music, and by unleashing a musician's imagination, lets it soar to yet-unknown heights". ${ }^{31}$ Of the composers I have studied, Xenakis is the nearest to my "ideal" (in the Platonic sense) programme composer. His implication that you can use your past experience of your "object", so long as it is not "filtered" culturally, is very liberating. But I cannot use his methodology or his processes of composition.

Peter Cusack (fl. $1972 \rightarrow$ )

Peter Cusack has been described as a "reknowned British avant-garde improviser" ${ }^{32}$ and "a sound artist, musician and environmental recordist [sic] with a special interest in environmental ecology ... [who] lectures on Sound Arts and Design at the London College of Communications" ${ }^{33} \mathrm{He}$ is, to my mind, a genuine post-modernist artist, transcending the traditional artistic categories to bring awareness of sounds to a wide audience, as in the Your Favorite London Sound project or The Week of Small Miracles, which he curated. The aspect of his work that interests me are particularly represented in his CD Lake Baikal Ice, where his field recordings are presented apparently unprocessed, and Day for Night, where his recordings are interwoven with his guitar and bouzouki playing and Max Eastley's Aeolian harps and his unique Arc. Listening to Day for Night, pictures and emotions can be created: one listener reported "I'm beginning to understand the sonic pictures, which reveal themselves like the realisation of seeing something hidden in an abstract painting ${ }^{\prime 34}$. However, it is possible that these emotional reactions are those of the listener alone, since we are expected to take these recordings at face value - this effect is perhaps underlined by the fact that the CD notes are so short and enigmatic. It has been remarked in a review of the Lake Baikal Ice recordings, "Many recordings were made including the sounds of local people, this latter designed to evoke a sense of their way of life ${ }^{, 35}$, but one has no way of telling whether Cusack wrote this article or not, or whether he approved of it (it is in the London College of Communication page, and the artist's position in society has radically changed since the article about Elgar in 1900). In short, I think that Cusack is truly a post-modernist artist but not a programmatic composer, because he deliberately leaves the listener to make sense of his recordings in their own way.

## The place of Minimalism.

When I try to look at my music objectively, I do perceive it as being relatively simple in its harmony and its rhythm schemes, which is part of the dictionary definition of minimalism ${ }^{36}$. It also grows "organically" rather than obeying strict rules, and some movements, like Journey Through Ironbridge, rely on melody to quite a large extent; this movement also encompasses a variety of musical styles. This seems to put the music into a different category from the complex serialism of Stockhausen, for example, and because of the more recognisable tunes shows perhaps a wider popular appeal. The strongly-marked beat and pulsing repetition (as can be seen particularly in Rain and Flow) also distances the music from the modernist movement. This movement especially shows faint affinities with Balinese music. If the music can be categorised perhaps it fits most happily into the category of post-minimalism; like John Adams' music it has more harmonic motion than the repetitive, non-climatic classic minimalism, and has what Keith Potter describes as "a more encompassing narrative element across broader spans of time". ${ }^{38}$

Having looked, albeit briefly, at the working practices of five quite different creative composers, I came to a number of conclusions. I am not a "sound artist" like Cusack, partly because he regularly creates with other artists, whereas in this project to create what I believe is "pure" programme music I wanted to form my own visions and pass them on as exactly to the listener as I could. Nor did I want merely to be a conduit for the emotions of a poet or painter or other artist, as Debussy - or indeed Elgar in Gerontius - could be thought of as doing, however beautiful the product was. Nor did I want to belong to any political "school" of composers, as many composers did in the late $19^{\text {th }}$ and $20^{\text {th }}$ centuries, and therefore subsumed their own reactions to the tenets of that school. However, as Bax showed, personal feelings of love can be inextricably linked with love of the sea, or nostalgic fantasy with love of the Irish landscape, and personal feelings, which may have been influenced by the composer's place in a particular culture, must be allowed their place in the compositional process. I prefer to link the methods of my composition with the work of landscape artists such as Richard Long and particularly Andy Goldsworthy. An affinity with artists of the Abstract Expressionist school, like de Kooning and Jackson Pollock, was a feature of post-minimalism and later of the English Experimental School paintings which showed more "metaphorical and indeed expressive aspects" ${ }^{39}$. I interpret Goldsworthy's driving maxim to be the encapsulating and forefronting of one moment, or a series of moments, from the natural world in an aesthetically pleasing and yet as natural a setting as possible.

So though my definition of the purest programme music as "music that describes the visual and aural impact and atmosphere of a landscape and the emotions they produce in the composer as directly as possible to a listener" still stands as the ideal, my music, and as a post-post-modernist I believe any music, is merely on a continuum, trying to be perfect. Though I have immense respect for all the composers that went before, and subconsciously use many tropes which they pioneered, I knew I would have to search for my own methods of engaging with the Severn's soundworlds.

## Chapter 3 Research Strategy

I approached this project from a number of angles, which included collecting a portfolio of still photographs and video recordings of the river in all its moods and at all times of year, making ambient sound recordings and recordings of the sounds under the water made using a hydrophone, reading magazines, newspapers, journals, histories in as many genres as possible for information and inspiration, and principally long hours of watching and listening to the river itself.

My first step was to extend my knowledge about different styles of notation, to give me the tools to express the sounds that I heard and wanted to make.

I decided quite early in the study to produce music only for acoustic rather than electroacoustic or electronic instruments, to make its reproduction possible for the widest range of musicians. I also wanted the sounds I made to be reproducible as unchanged as possible from the sound I had originally conceived.

I examined many musical instruments from outside the western orchestral tradition - the pitfalls of which I shall discuss below. However, after much thought I chose the instruments that were available in the University Orchestra for 2009, as the most sensible compromise for the realisation of my music. This would allow me plenty of woodwind and string players, plenty of percussion players, but would allow few expensive doubles like bass flutes to be employed. The music is at a level of difficulty which could easily be achieved by such an orchestra. The music for voices was also aimed at a similar standard of performers, a musically literate amateur choir.

I read a great deal about all aspects of the river, and of the people who live and lived by it. I picked books, newspaper articles and articles from a variety of journals as eclectically as possible, acknowledging though that my own predispositions (especially for local history) and cultural upbringing may have had some influence.

As a wise critic suggested, I took critical notes of how I have approached my work, and for February 2009 doing this in the form of a diary. An abridged form of this diary is included as appendix 2. Studying the diary helped me both to become more consciously aware of my methods and weaknesses and to plan my field trips in a more focused way.

From early in the project I started the field trips, to as many places along the river as I could. More than 70 trips were undertaken and written up between 2006 and 2009, and are in fact still ongoing. I took notes at each place visited, and took records by MP3 recorder, video recorder, hydrophone and digital camera. Sections from the written notes, which in full came to $11,000+$ words, can be found in appendix 1 .

As well as detailed watching of the river at all times of year, in all types of weather, and at all times of day, I spent a lot of time in close listening ${ }^{1}$. At one lecture I attended as an undergraduate, we were told to stop work and just to listen to the sounds around us and write down all that we heard; as an exercise it was invaluable. To develop a way to break down all the component parts from any ambient soundworld to study them meant I could transfer this method to examine the Severn's soundworlds.

Quite early in the project I began a series of trial pieces. For each piece I first made a map, which could be a photograph, a plan, an actual map, a recording made in the field, a freehand drawing, a found piece of music or a picture created in my mind by a piece of text. From each I made a short piece of music which followed the form of the map. The piece A Picture of Atcham uses as a template the shape of the trees and the river against the sky, for example (see picture 1). Wainlodes Hill was inspired by a photo looking down the steep hill to the river: it takes the form of long upwards and downwards glissandos (see picture 2). The River Frozen Over I composed after reading a section in Hugh ConwayJones' Working Life on the Severn \& Canal ${ }^{2}$ about his experience handling working boats when the river was frozen. At much the same time I visited Upper Lode Lock (a description of this is in appendix 1) in winter, and with the smell of frost, and the quality of the light, the piece gelled immediately. The piece is formed from two contrasting pieces of orchestration: one representing the apparent stasis of the frozen river, with long notes on the strings played sul ponticello and voices accumulating like growing ice on a windowpane, and the other the powerful chug-chug of a river-boat, epitomised by repeated quavers on marimba and upper strings pizzicato which eventually pushes its way through the ice (see fig. 1: The Severn Frozen Over, bars 39 - 45). The all-pervading cold soon reasserts itself, though, and the ice refreezes.


Picture 2. The "map" of Atcham, from the outline of which was composed A Picture of Atcham.


Picture 3. Photograph used as a map for the Wainlodes Hill trial piece.

Other pieces were inspired by working with particular ensembles. One such group, Okeanos, play a mixture of European and Japanese instruments, and Top of Plynlimon was written for bullroarers, didgeridoo and koto. I had listened to and accumulated information about instruments outside the western orchestral tradition, to widen my tonal palette to express the river, but the musical result to me was unsatisfactory. The broken chord capabilities of the koto, which I had thought would mirror the small but energetic waterfalls of the nascent river in the mountains, just jarred. Was this because my appreciation for various unfamiliar sounds was compromised by my own culture, or because I could not pass my emotions about the Severn genuinely in this particular medium? At any rate, hearing the music did not conjure up the same emotions to me as I experienced actually being there - the "internal transformation", the translation of a heard and seen environment into written music, had failed. This was, to me, a Japanese waterfall, which I had never seen and therefore could not describe honestly.

The most interesting piece, to me, was The Severn Bore at Minsterworth, which is now in the main suite Severn Journey. I was on the riverbank when the Bore reached Minsterworth at about 10 pm . It was too dark to use any instrument but a sound recorder and close listening. Afterwards I played the recording over and over again, and mapped out the exact timing of each event - the Bore being heard for the first time, the front wave of the Bore passing me, the time-gaps between the subsequent waves, and so on. Then I decided on which instruments would be appropriate to play the music; trumpets for the foaming head of the wave, strings for the river rushing and boiling behind it, at all the multiple levels of pitch within it, wind instruments to represent the reeds rustling in the wind, the piccolo a startled bird. Then I wrote the piece, to the exact timings I had mapped out. The finished piece always recalls vividly to me my standing in the cold wind, amongst the reeds, in the dark, watching this wide foaming wave rushing towards me. So from that point of view it was a successful piece, as it had the exactly the effect I wanted.

Writing these trial pieces did raise several interesting questions. A piece of music written away from the river regularly starts by my consciously evoking an impression from the Severn in a particular setting and mood, but sometimes deviates from this intent and becomes a piece with its own compositional agenda. Does this happen because I fail to sustain this conscious evocation, or because some other creative force or impulse takes over? Should I therefore compose all my music while on field trips, to maintain this


Fig. 1. "The Severn Frozen Over", bars 39-45.
evocation in its purest state - would the evocation, however clear in one's mind it seems to be, be culturally tainted, unlike actually being there?

Looking back, I think that writing the Bore piece was a valid project. True, it was written away from the river but it is the only piece I have written to an exact time-map. That element, though at first sight restrictive, in fact removes from the composer the culturally risky responsibility of deciding the musical form the composition will take, while his/her choice of instrumentation, pitch, the choice of harmony etc. are not compromised. Since I wrote the piece the empathy I hope I have gained by close listening and observing have given me at least some facility to evoke the feelings I have had by the river when away from it and I do not now feel that there is a material difference in the "trueness" of the music I produce when I am by the river or I am elsewhere. The "other creative force", if I can so express it, does seem to appear when I am composing by the river or away from it, so perhaps it is just a part of my character.

Since I was trying to follow the process, to try to work out the steps of what I termed the "internal transformation" of experience and emotional response into music, I gave much thought to what happens at the crucial moment, when the first musical idea appears in your mind. This moment of inception turned out to be a problem like the Big Bang: you can examine what happens from a split-second after the Big Bang, but cannot encompass what actually happens in it. I have only found two contemporary composers who have been brave enough to attempt this, Robert Saxton ${ }^{3}$ and Robin Holloway ${ }^{4}$, who both gracefully admitted defeat. When I was able to ask Jonathon Willcocks what his process was he avoided the issue, albeit charmingly, concentrating on practical aspects of composition after the Bang. The only light I can shed on the problem is that after immersing myself in thoughts about the Severn and often dreaming about it, occasionally during hypnopompic sleep (the dream-like state between sleeping and waking ${ }^{5}$ I have imagined short pieces of new composed music, usually played by a full orchestra, sometimes with a trumpet soloist. These pieces fade very quickly - I had to write them down immediately, or they would be lost, but first theme in The Source (see below) came to me in those circumstances. I think that the first ideas tend to come when I have zoned out of the normal conscious thought processes, when my mind is elsewhere. I think that is the nearest I can get to explaining internal transformation; it happens not quite in the hear-and-now.

## Chapter 4 The suite: Severn Journey.

## The Source

In this movement, as in most of the others, some instruments are labelled "on the right of the orchestra" or "on the left". This is because I have tried throughout to place the orchestral instruments in the concert venue such that they encompass the audience, so that the listeners feel actually on the river, or in the water itself. Also, throughout the suite a note from an instrument on the right may often play a brief time before or after the same note from a similar instrument on the left. This is one way of creating a 3D effect, of reproducing the echo one hears, or at least imagines, in a hollow three-dimensional space. Brandon LaBelle suggests, as part of his discussion of echoes in his book Acoustic Territories ${ }^{1}$, that echoes also tend to dislocate the source of sound and call into question the linear motion of time. This seems to me to underline the nature of the river, a permanent thing on the map yet a constantly changing entity. This trope is especially to the fore in this piece, but also occurs in Through Ironbridge Gorge, Rain and Flow, Severn Bore at Minsterworth and To Lavernock Point, the end of the journey where the river is about four miles wide.

The choice of keys, E flat minor, G major and A flat major in this movement, was determined in part by the type of instrument used; B flat trumpets and clarinets find a flat key much easier. The range of various instruments and particularly of human voices had also to be taken into account. In some of the movements, including this one, I chose to use the spiritual resonances of the bullroarer ${ }^{2}$, a free aerophone ${ }^{3}$ which consists of a flat piece of card or wood attached to a long piece of string: when whirled around the head it will generate harmonics - the faster it goes, the higher the harmonics you can achieve ${ }^{4}$. However, bullroarers cannot be tuned in the normal way, and the key had to allow for that limitation. There is no "plan" for the keys used, the modulations are purely organic, except in Whirlpools at the Mythe, which I shall talk about below.

The first movement starts with a very low continuous note on a double-bass, an $E_{1}$. This note represents the music of the spheres; it is the note the earth sings, and represents stability. Fig. 2 shows the first and second trumpet playing the first theme, which occurs again later in the suite and represents the circularity of the water cycle, and thus of the river itself - the same atoms of water may flow down the river again thousands of years hence.


Fig. 2. "The Source", bars 1-12.

The first upward-springing phrase, which represents the river itself springing up from the peat, is played on woodwind and brass. It is in an unrelated key, G flat major with an initial sharpened fourth, instead of an indeterminate E flat with a flattened seventh. The movement follows the young river down the mountain, over Hafren Falls. The waterfall trope, a version of which also appears in Diglis Weir, is each instrument playing a downward octave run but starting at different times, so they appear to "fall over" each other. The river then goes down Severn-break-its-Neck Falls, and through the first town on its course, Llanidloes, where it arrives as an unfettered, exuberant stream and leaves a mature, powerful river. Figure 2 also shows the effect of the "echo" trope of two instruments slightly out of phase on the right and the left side of the orchestra.

## Journey Through the Secret River.

This piece, without a key signature as are most of the movements, is much more richly scored. Voices are now used, articulating vowel sounds, as another "instrument", following similar melodic lines to the woodwinds. In many movements of the suite the alto part can also be assigned to counter-tenors. In some cases the tessitura is probably unacceptably high for counter-tenors, but as the music was originally conceived for them I have left the option in. The theme is the various strands of the river (surface ripples, different speeds of flow at the sides and in the middle, how the river behaves at the edges,


Fig. 3. "Journey Through the Secret River", bars 8-15.
water from the bed of the river rising etc.) and how they interact. Each instrument represents a different strand, and their interaction is represented by the dynamic marks which are individual and quite precise to each instrument throughout all the pieces, creating an ever-changing kaleidoscope of sounds. Unfortunately, the subtlety of this shading cannot quite be reproduced by Sibelius 4. There is no "form" to the piece in an absolute sense, because the river is a continuous entity. To work one's themes up to fit into a symphonic form, or a sonata, would introduce an additional stage into the internal transformation, and distort it unacceptably. However, it does follow a natural wave, in that it comes into view, goes past the listener on the bank, and eventually goes out of sight into the distance.

The movement is in three-four time, and is intentionally of a constant speed. The speed of each piece is given precisely as a metronome beat at the beginning of each piece, rather than relying on subjective Italian terms. The river, although it may totally change its character and speed from day to day according to the weather, does not change while you are watching it; a rallentando, for example, would seem bizarre.

However, in this movement the constant beat of the percussion section is complicated and sometimes disguised by the voices, brass and wind instruments playing upwards and downwards phrases, overlapping and sometimes on half-beats, representing the surrounding ripples and wavelets (see fig. 3, Journey Through the Secret River, bars 1518).

## Through Ironbridge Gorge

Between Leighton and Buildwas in Shropshire, from the B4380 which travels side by side with the river high along a ridge, there is a wonderful view of the Severn snaking in extravagant bends toward Ironbridge. I tried to reproduce the wonderful picture I had of the river glittering through these sinuous bends in my mind by using the bullroarers' unique musical phrase, which was heard in both the previous movement and will be heard again, but this time giving it in a more expansive form to the lower strings, scored so that there appear to be two instruments, right and left, playing alternately. Growing through this first passage as the Severn eventually enters Ironbridge is a slightly bizarre chorus of untuned percussion instruments which represent (to me) the noise created in the cavernous gorge, of people toiling in the industries which thrived there in the nineteenth century iron smelting and casting, tobacco pipe making, china and tile manufacture, and loading and unloading the busy river-born freight at the docks at the Wharfage. It was essential to
have the people of Ironbridge in this movement, for nowhere else was the river more bound up with people's lives. To me, the whole piece is set in the past, on an autumn afternoon, with sunlight on the south-western shore, illuminating the little red-brick cottages, and the rest in chilly shadow - it is a place very familiar to me, as I have visited it every couple of months for over forty years.

The people of Ironbridge first sing The day Thou Gavest, Lord, is Ended, in a minor key an evening hymn, because all things must pass, as this incarnation of Ironbridge did eventually pass in its turn. The people though are at this moment prisoners of the industrial system - during the second verse there is a countermelody voicing wistful comments like "I am so tired, so very tired" and "I'd love to feel the warmth of sunshine". Also, there is a recurrence of a trumpet phrase which recurs in several movements, and upward minor triad in three-time followed by a longer tonic, then repeated. This phrase evokes the rather menacing presence of the oncoming wave.

There is then the introduction of "Eusty's theme". It represents here the delightfully anarchic Eusty Rogers, the last coracle-maker of the town (see picture 4), skimming his coracle over the river as his father and grandfather had done before him, catching his food from the water whose flow he knew so intimately (and often providing his hard-up neighbours with a welcome meal too) and ferrying fellow townspeople over the river to relieve them of paying the toll demanded by the bridge owners. Eustace Rogers was a free spirit


Picture 4. Eusty Rogers in his coracle at Ironbridge, c. 1955. who was totally outside the then rigid social system. His is a jaunty tune, which in the end becomes dominant over all the rest. His tune also goes around the orchestra like a echo through the gorge, starting with the clarinet, the oboe, then the voices, upper strings, and at the end of the movement the
trumpets and trombones. The voices use the tune to sing a cheerful children's hymn Jesus, Friend of Little Children, Be a Friend to Me.

The next section, starting at bar 171, is of unease. Men are loading the trows ${ }^{5}$ by the quay at the Wharfage, boats are being made ready to sail with the tide, and there is the distant smell of the sea. The strings are again identifiable with the river, but in a different aspect; there is a continuous agitation of waves in the double bass, cello and viola (in the form of broken arpeggios), but no reassuring base line, and the wind and brass play brief, unconnected fragments of melody. The voices now represent the boatmen who are soon to take the boats out into the treacherous waters of the Severn and sometimes beyond. The hymn is There's a Friend for Little Children, Above the Bright Blue Sky, again in a minor key, but now with the ends of lines cut short, because the sailors have to be ready to catch the tide. The section ends with an insistent bell and an accelerating cry of "hurry!"

Eusty's theme then returns, more richly scored that before, and then there is a reflective passage where the chorus quietly sing again The Day Thou Gavest, Lord, is Ended, accompanied, at first, by a lone flute. Eusty's theme then breaks through triumphantly. As the river gradually leaves the Gorge and disappears into the Wyre Forest, there is a faint reminder on the trumpets of the first theme played by the wind and brass in The Source, representing the first rising of the springs which formed the river. The tubular bells, which early in the piece played a warning to the sailors to hurry, play now a calm heartbeat. The sound of the tubular bells is a lietmotiv of peace and resolution, as the river finally merges with the sea. This lietmotiv will be heard again in To Lavernock Point.

## Rain and Flow

This movement concentrates not so much on the flow of the river as surrounding the listener with sounds heard on the bank - sounds I heard during a sudden heavy shower which came on while I was watching the river. The style of composition focuses on the gradual development of the music caused by tiny changes in the length of cells. The smooth flow of the river is created by the string section, at the beginning a long, slow unison, with gentle rocking movement shown by octave shifts by one instrument, then another. The strings play col legno, making it more eerie and distant. The woodwind instruments represent the rain, playing staccato downward runs, one basic cell but some extended and some shorter, bouncing off each other, creating a 3-D network of echoes caused by the wind blowing the raindrops. As the rain's intensity increases, the brass joins the woodwind, showing the percussive fall of heavy drops onto the river. The Severn's


Fig. 4. "Rain and Flow", bars 83-88.


Fig. 5. "The Severn Runs Through the City of Worcester", bars 223-231.
surface eventually becomes disturbed, and the unison is broken by legato upward runs (see fig. 4 for examples of these two tropes). As the rain gradually comes to an end, the last picture is of a dripping metal roof of a shack glistening in the sunlight.

## The Severn Runs Through the City of Worcester

This is another piece which includes sketches of modern people. In a strong four/four rhythm, it has no key signature but is for the most part in E flat major. The percussion represents the ebb and flow of the people on the riverside and the volume of the moving river interacting with the stone-lined banks. The main theme is a jaunty syncopated tune on the trumpets, which is then picked up by the woodwind and then by


Fig. 6. "Singing Water", bars 211-221.
different groupings of instruments. At one point the orchestra plays a measured, chant-like interlude, as the river passes the Cathedral. Man's controlling of the power of the river, however, is at best precarious; this is demonstrated when the orchestra suddenly rises in unison to "break" in a fortissimo, E flat major chord (see fig. 5).

## Singing Water

This piece is for an a cappella double SATB choir, and was conceived when I concentrated on one small part of the river, near the bank, and watched its tiny swirls and whirlpools. Each voice sings a variety of words - "drip-drop", "a-e-i-o-u", "up-up-up", "tinkle-tinkletink" etc - to differentiate itself from the others. In addition, the syllables themselves, the crispness of consonants and the length of vowels, subtly change the degree of legato with which each phrase is sung, as each tiny flowing strand of the river continually changes and mutates. Sopranos change the words they sing and/or musical cells every 5 bars, altos every 6 , tenors every 8 and basses every 9 bars, which gives an underlying pattern to the piece. The voices in each section sing alternately, so that it appears to be a perpetuum mobile. I tend to avoid pauses in all the pieces, for continuous movement is a basic quality
of the river. Even when the surface of the river is frozen it still surges on underneath the ice. When this piece does come to a brief halt it is the listener who takes a deep breath. From bars 211 to the end of the piece (see fig. 6) the style changes to a chordal legato passage - "for ever" - and then the river gurgles away to a ppp octave unison - "far away - gone".

## Whirlpools at the Mythe

This was conceived at Telford's elegant Mythe Bridge looking northwards and seeing lines of tiny whirlpools being created, merging and disappearing in the water. The full orchestra plays first a conventional flowing beginning, from which a quiet tune grows. Gradually, the music becomes more turbulent and disturbed, and ripples and eddies are created in the music. Eventually the shapes of whirlpools appear, in the woodwinds, trumpets and strings: the instruments play short upward and downward figures, overlapping one another, my interpretation of a circular motion (figure 7, bars $50-53$.). One key figure recurs, as can be seen in fig. 8 (bars 43-45, bottom 3 strings). Finally the voices enter with single, overlapping notes sung to a single syllable. This is a second whirlpool motif, consisting of voices playing a note each of a broken chord, upwards or downwards. These are always changing: one can sometimes get a glimpse right down into the water through the centre of the vortex. To further represent the impermanence of the shapes in the water, the key changes all the time. In fig. 9 (Whirlpools at the Mythe, bars 57-63) the key moves from E major to E minor, C major, D major, B flat major to G major in seven bars. In the final bars, the whirlpools slide under the bridge and are lost.

## Severn Bore at Minsterworth

This piece began as a test piece, and was then developed to become part of the final suite. To my mind it is one of the most successful movements, because it perfectly recalls to me the scene to me every time I hear it - even the numbing cold. To compose it I tried to use the techniques of close listening and working very closely to an ambient sound recording made at the time. This was my map. The actual Bore was due just after ten o'clock at night, and it was too dark for any other forms of recording. The music was composed to the exact timings of the recording, and the instruments used mimic the sounds that feature on the recording. The woodwind and percussion are the reeds and the wind; the clarinet is particularly effective here, playing two notes only in an uneven rhythm in the chalumeau register. The flute is a memory of a broken can caught on a twig, clanking in the wind. The


Fig. 7. "Whirlpools at the Mythe", bars 50-53 (voices omitted).
piccolo is a bird startled from sleep. The cymbals, in a gradual crescendo, represent the menacing roar of the great yellow-brown fountain of spray that runs along the side of the Bore's leading wave along the Minsterworth bank as the Bore travels up the river towards you. The front wave of the Bore itself is represented by two trumpets; distant at first but getting ever louder, muted at first but then with mutes removed, playing the same or related phrases slightly offset, representing a rushing wave running right across the river. The phrase used is a variation of the leitmotiv used throughout the suite for the potentially malevolent oncoming wave, three downward notes down from the dominant in three-time, followed by a longer dominant (see bars 48 and 49 for an example). The timpani roll enhances the menace - will the Bore hit high enough up the bank to drag you into the river? The wind, the size of the tide, the amount of "fresh" (ie, flood-water) in the Severn are always uncertain, and you can never be sure of the true size of the Bore until it come round the wide right-hand bend into view. Only when the Bore comes level with the viewer do the trumpets sound a high major third together, fortissimo, augmented by the trombone, at the point where there is no echo, only a world of noise and brown, leaping foam (see fig. 10, The Bore at Minsterworth, bars 57-64).

The water of the Severn, here represented again by the strings, almost ceases to flow before the coming of the Bore, just swirling around in little random eddies. But when the Bore reaches it it is suddenly galvanised, and this change is marked by the sudden fortissimo entry of the whole string section. Within a few moments the whole body of water is flowing determinedly upstream, rapidly rising as the tide rushes in, turbid, full of whirlpools and bringing flotsam (including whole trunks of trees and buoys from seafishing nets) from far down the Severn. Thereafter the lesser waves, the "whelps" ${ }^{\text {" }}$ of the Bore, are marked by lesser climaxes in the trumpets' lines, ever decreasing in volume, until the Bore disappears upstream, and all that is left is the hissing reeds and the randomly blowing can.

## Lydney Harbour

This piece was written very quickly, in the two days following a visit to Lydney, so it could be interpreted as being the most genuinely connected with my "live" experience of the river. It is in a languorous seven-four time, notionally divided 3-2-2, in A minor. It starts with long, wide chords on the piano and harmonics on the violin, moving slowly down to the dominant - it represents looking round at the dazzling silver panorama of the Severn estuary. These long, $p p p$ chords are as near to stasis as can occur by the Severn; they are my interpretation of a three-dimensional space changing almost infinitely slowly. Then a wistful tune develops for the violin - Lydney is a sad place. The stone harbour, once busy with trading ships, is now abandoned, and the rotting remains of the trows stick out of the mud like bones. A more animated centre section follows, where the violin plays a series of variations on a second theme, which appears first at bar 26 (see figure 11, Lydney Harbour, bars 26-36). Eventually the violin and piano play the first theme, which eventually grows still again.

In performance, the violinist Darragh Morgan found that it was physically impossible to play the harmonics as I had originally conceived them. My revised written score has the notes Darragh played, which give the right harmonic progression, and my thanks are due to him for his professional help on the subject.


Fig. 8. "Whirlpools at the Mythe", bars 43-46 (voices omitted).

## To Lavernock Point

The imaginary line which links Lavernock Point in Wales to Sand Point, just north of Weston-super-Mare, is where the River Severn becomes the Bristol Channel. Here the water is already brackish, and fishermen catch cod rather than freshwater fish. The piece begins with the bullroarers once again, and the timpani roll a distant warning of the sea's breakers. The voices come in triumphantly to herald this wide, powerful expanse of water, but then subside into a slow version of the downward whirlpool trope, leading, as the river eventually must, to entropy. Then follows a slow melody for voices and woodwind, with


Picture 5. A panorama of Lavernock Point, facing east.


Fig. 9. "Whirlpools at the Mythe", bars 57-62.


Fig. 10a. "Severn Bore at Minsterworth", bars 57-64, part 1.
the strings rippling underneath. Briefly, Eusty's theme then appears again, on trumpets, with woodwinds, strings and eventually voices singing a cheerful five-note upward figure, tonic to dominant, the same that was played by the tubular bells in Through Ironbridge Gorge.

After a return of the slow melody, the distant trumpets are heard, echoing the very first phrase from The Source over the river to each other. I was not at first aware of the use of "thematic reminiscence", used by romantic composers as a way of evoking a memory. However, it is here - the echoing 4-note theme (tonic-dominant-flattened leading notedominant), the wind-sound of bullroarers, the tolling of the tubular bells. The circle is now complete, and the bells are heard to represent rest at last. The trumpet phrase eventually extends into a melody (figure 12, To Lavernock Point, bars 149-162), which is in turn


Fig. 10b. "Severn Bore at Minsterworth", bars 57-64, part 2.
taken up by the singers as a Nunc Dimittis. Finally, with the trumpets still playing the first theme, the river is merged with the sea in a sustained $G$ major chord.


Fig 11. "Lydney Harbour 2009", bars 26-36.


Fig. 12a. "To Lavernock Point", bars 149-162, part 1 (voices omitted).


Fig. 12b To Lavernock Point bars 149-162.

## Chapter 5 Severn Words of Wisdom

This longer piece was written to include in an exhibition of photographs, videos and sound recordings, also called Severn Words of Wisdom, which I curated in the Richard Hamilton Building in September 2009. It shows the journey the river makes, from the source, a tiny stream in the Welsh mountains that you could step over, through Powys, Shropshire, Worcester and Gloucester and out into the sea as a great river nearly four miles across. I wanted to include accents, places, sounds, activities, music - a kaleidoscope of as many different aspects of the river as possible. I built the piece up on Adobe Audition 1.5; apart from fading each extract in and out and normalising them, they were not altered at all. As this is a stereo recording, I tried to separate the sounds for the audience by using the facilities of stereo - putting one voice on the left, as it were, and another on the right so they can be distinguished more easily. Also, the general sound tends to run from left to right throughout the length of the piece, to further imply the journey from source to sea.

During its journey the river goes through many different types of countryside and both cityscapes and rural landscapes. I wanted to show what I felt was important about each section of the river, what makes each one of them different. However, as it has to be one piece that holds together, I wanted some continuous sounds that ran right through it.

The first one I chose was the actual sound of the river, running underneath everything else. But I wanted it to be of fairly low pitch and not confused by ambient sounds - like wind noise or passing aeroplanes. Therefore I decided to use a continuous underwater recording made with a hydrophone at Ashleworth Quay.

The second sound I wanted to include was the continuous susurrus of the human voice. Voices were an essential ingredient, because people have lived by the river throughout history, crossing and re-crossing it, bounded by it, invading up it, trading down it, travelling over it, earning their living from it, getting their food from it and baptising their children with water from it - or with cider they made from the fruit it nurtured, although that is only hearsay. I recorded a list of nearly all the inns looking out on the Severn, and that also runs quietly along in the background. The inns were very important resting, drinking and watering points for those who manned the trows, the great trading boats designed especially for the Severn, with a shallow draft and a rounded prow. Since the river trade died out, there are only about half of these inns left but the names can be very evocative - like The Mug House in Bewdley, or the Windbound Inn at Shepperdine (now called the New Inn) or the Old Ferry at Chaceley (now called The Yew Tree). I also
recorded human voices reading a list of some of the towns and villages along the Severn, spoken by people who come from the area - north Wales, Madeley, Lydney, Stroud, and Cardiff, and that recording also runs along throughout the piece.

On top of this background of continuous sounds, there were a number of other aspects of the river I wanted to foreground. The first one is birdsong - you will hear blackbirds, nightingales -"the Severn is reputed to be the boundary of the nightingale's song" ${ }^{1}$ - and herring gulls. Birdsong is an immensely evocative sound. For example, the sound of a herring gull is intensely nostalgic for me, coming as I do from Scarborough, and hearing one instantly opens up a kaleidoscope of sights, sounds and even smells from my childhood, and I can feel the cold sea wind on my face.

I wanted to include as many literary extracts as possible from as many periods as I could, from diaries, travelogues, newpapers, poems and even tombstones. There are more extracts than one can concentrate on in one hearing, and this is quite deliberate. Picking out a different set each time reproduces the effect I always feel when by the river, the knowledge that it is always mutating, that it is never the same river twice. I asked eight selected people to read the extracts. Two of the readers are from North Wales, two from Madeley near Ironbridge, Shropshire, one from Stroud in Gloucestershire, one from Lydney in the Forest of Dean and one from Cardiff, so their accents again show the journey of the river through the landscape. The eighth voice forms a contrast to these accents, a speaker of more standard English who reads the more official extracts, such as the table of tolls across the Iron Bridge.

Then there is the music. There are six pieces of music, all of which are intimately connected with the river. Falling Water, the first extract, is my own piece which represents the fast stream and the little waterfalls of the young river on Plynlimon Fawr. Ave Maris Stella (Hail, Star of the Sea) is a piece of medieval plainsong, performed by the present-day monks of Downside Abbey. This piece was included to represent the long, distinguished ecclesiastical history of the city of Worcester, to all of which the Severn has been a witness. St Theoc's Cross is another piece of mine, which is about the ancient preaching cross outside Tewkesbury Abbey, at the great confluence of the Severn, the Avon and the Swillgate, and all the history which has swirled round it. It conjures up the ancient history of the landscape and its people of which you can often see glimpses, which is also illustrated by the Lord's Prayer in eighth-century Anglo-Saxon which plays alongside it. Severn Meadows is a famous song by Ivor Gurney, a poet and composer who
was born in Gloucester, and who loved the river Severn and its landscape. His love and nostalgia for it was such that he wrote both the words and the music for this elegiac gem while in the trenches of northern France during World War I. Severn Bore at Minsterworth is one of my trial pieces which is commented on in detail elsewhere, but was included partly because I think the Bore is central to the downstream Severn folklore (anyone who would consider him/herself a "Severnsider" knows all about the Bore), and partly to accompany a fine literary extract about its effect on a stranger. The last piece is called To Lavernock Point. Lavernock Point is where the river officially ends and the sea begins, and the piece represents the wide, glittering river gradually dissolving into the sea. It is peaceful, like my first, wonderful summer evening visit to Lavernock Point, and serene as the last extract - "But rivers live longer than men."

## Chapter 6 Sounding Severn.

This is the latest Severn piece. Having studied the river and the methodology for writing programme music for it for so long, I wanted to bring together all that I had learnt in one composition.

The piece consists of five sections. The first, third and fifth represent the strange soundworld under the water, and are By Bevere Lock, Under Ashleworth Quay and Diglis Weir. The shorter second and fourth sections represent sound above the water, and are Geese Flying South at Deerhurst and Lavernock. Each section is preceded by a hydrophone or ambient sound recording made on that site.

The instruments I chose are: two pianos, to the left and the right of the audience, for their great variety of sounds and effects and the modifications that can be made to them; a harp, for its deep and complex timbre; and a string section, for its range of effects but also for its use as a great single instrument. Because the harpist's and pianists' right and left hands may be at different points of the canon which forms an underlying pattern of the "underwater" sections of the piece, both hands are given separate dynamic marks.

The chief method I adopted for the internal transformation of the recordings was close listening, always with a visual aide memoir, always trying to discern any repeating rhythms, and tonal bands of noise or any atypical sounds.

## By Bevere Lock.

In the hydrophone recording made by holding the microphone under Bevere Lock, I heard three main tonal bands: a deep oscillation between a few close pitches, a medium-pitched white-noise hiss and high, intermittent trickling sounds, plus one-off noises, possibly manmade. When transformed into music, a slow three-four rhythm was implied by the musical form these trickles took in my head, though of course no real "beat" was discernible. The three-four beat is partially disguised by an ostinato played on the half-beat by the left-hand piano's left hand. Three other short cells are constantly repeated, as is shown in fig. 13 (bars 112 - 115). A five-note figure on the pianos (a), a slow trill in the harp (b) and a three-note run in the upper strings (c) interplay constantly, and the ever-changing colour is further mutated by the dynamics, which move in slow waves $p p$ to $f$, at a different rate for each instrument and each hand, hinting as before at the complex three-dimensional bathymetric map which largely determines its flow. In Hafren Forest I observed that


Fig. 13. "Sounding Severn" (1) "By Bevere Lock", bars 112-115.
the deeper the water into which water falls, the deeper the notes produced. This pitch effect is used everywhere in the music to try and recreate this effect, especially in the deep waters of the lock. Every so often, other sounds enter the churning mix, as spray bounces off the walls of the lock or the boat's stern churns round in the water - as is shown at (d) and (e): (e) also shows a variation in tone that can be obtained from the harp by plucking it with a sharp, dry staccato. There are some discernable movements from the dominant up to and down to the tonic, but only the filling of the lock and the water at last finding equilibrium brings this section to an end.

This section has a much lighter texture than the previous section representing the enclosed, turbulent lock. The harp, whose timbre is the nearest I have found to hearing sound through water, does not play, but there is a quiet base-note from the pianos with a continuous pedal. The plucked piano represents the rooks, ducks and other birds that were around the river that morning, and the short cells of the strings, col legno at first to represent the 3-D space between us, are the cries of the Canada geese.

I do not know any way of making via instruments the unique quality of birds' calls: the nearest timbre I think is the female voice, but instead of a larynx like humans a bird has a syrinx. It is a tiny Y-shaped organ and enables the bird to sing two notes simultaneously ${ }^{1}$. Ideally, the bird calls here (and in The Bore at Minsterworth and Lavernock) should be played by two instruments playing a fraction apart, or, perhaps even more effective, have one of the instruments playing, say, in the nave of a church and the other at the eastern end. I have experimented with this first solution in Lavernock.

The repeated quavers in the piano, and the pairs of crochets moving from hand to hand perhaps represent the reflections of the geese in the water as they flew south towards Wainlodes.

## Under Ashleworth Quay.

This is a more richly scored piece. It has no key-signature. It has a six/eight time signature; this should make it easier to time for the players of the upper string parts but also forms a nice rhythmical tension with one of the piano lines which plays at three crotchets to the bar and is rather unusually written in that way, purely for clarity.

Despite the key-signature there is a continuous D sharp ostinato, passed between piano, harp and lower strings to effect changes in sound quality, such as I feel you would hear underwater. When we were making the hydrophone recording we saw a fish investigating the microphone and I presume that was what the intrusive noise was.

With the other instruments I have tried to illustrate some of the myriads of underwater sounds: drops falling into the river, bubbles coming up to the surface (see fig. 14, bars 6671), echoes (sound travels at about four times its normal speed underwater) (see fig.15, bars 16-19, upper strings), the motors of distant boats, the darting of fish and the
movement of weeds in the current. The more you are familiar with the river, the more sound pictures you will hear.


Fig. 14a. "Sounding Severn" (3) "Under Ashleworth Quay", bars 66-71, part 1.

## Lavernock.

The vast area of water, gently rocking, is represented here by sustained notes, with occasional changes of octave, from the strings, as in Rain and Flow. The elusive viola plays col legno, to make the sound more unearthly. The positioning of instruments in this section is especially important to give the impression of all-encompassing space. The bell I heard over the water on my first visit to Lavernock is here too, played by the harp. It plays a repeated chord, the notes of which resemble the natural harmonics of a bell with a fundamental at G , octaves of G and a flattened 7th, which represents the 7th in the harmonic series ${ }^{2}$. Again, I can as yet find no instrument that reproduces a chime more accurately than this. These notes played separately are reminiscent of the first trumpet
theme in The Source. The third element is the bird songs, calling from different places on the Severn bank. These are played on both pianos, one playing a demi-semiquaver after


Fig. 14b. "Sounding Severn" (3) "Under Ashleworth Quay", bars 66-71, part 2.
the other as described above. This is quite a short interlude but aims to produce the air of stillness and calm I felt there that July evening.

## Diglis Weir.

Diglis Weir is just south of Worcester. This is the last section of Sounding Severn, which was written in order to sum up what I had learnt was really valid for me about writing the music of the river. The main concepts I was trying to put across in this piece of music were the behaviour of millions of sparkling drops of water, leaping up in sprays, diving down tiny waterfalls, joining to form streams and then breaking apart again, getting caught in underwater vortices, going in every direction imaginable, but always eventually going downwards. The piece is in a swinging six/four time and in a resolutely major key, and the
mood is joyful, because the river is tumbling down the weir towards its ultimate goal, the distant sea. It remains in the same key, C major (only changing momentarily to A minor), and is built without pauses - in fact, the short phrases which form it often overlap, like the twists and turns of the river. I came across the weir almost by accident, and was at first delighted by it and then mesmerised by it; the never-ending rush of water, the continuous torrent of sound, both high- and low-pitched, the blinding glitter of the sun on the spray, were quite wonderful. Diglis Weir is an attempt to reproduce this vision, and the sense of purpose it conveys.


Picture 6. Diglis Weir.

The piece is built up of about six basic phrases, each with innumerable variations, played by various instruments, solo or in various combinations, but always moving towards the tonic.

The first is a simple upward scale, as played by the cello and double bass in bars 1 and 2 and the right-hand piano in bars 5 and 6 . The second is the simple cell subdominant, dominant, tonic, as can be found in the left-hand piano in bars 12 to 14 , and in an expanded form in bars 100 to 104 , played by the right piano, left piano and harp. There is also a little two-bar phrase which is heard often, for example in the pianos in bars 105 and 106, which represents the water bubbling over the shallow stones of the weir. Little pizzicato variations of this phrase, in the upper strings from bar 39 onwards, are my idea of millions
of tiny drops of water coming together, dividing again, but always ultimately moving in the same direction. There is also the sound of tiny waterfalls going over stones and into the depths at the bottom of the weir, as can be heard in the falling arpeggios in C in the piano and harp line in bars 135 to 138, or in fig. 17, bars $41-44$. This is another version of the figure used for the waterfall representation in The Source. The spray generated is represented by the sudden upwards movement to ff such as was figured in The River Flows Through the City of Worcester. The swirling vortices underwater are represented here by harp arpeggios and pizzicato strings (fig. 18a and 18b, bars 83-88); another version of this represents water hurrying downwards, falling over itself in its hurry, and can be heard in the running up-and-down figure in the strings in bars 149 to 158 .

Given the limited orchestral palette I had decided on, I used various techniques of playing the instruments to give as varied a sound as I could. Pizzicato, sul ponte and con sordino playing of the strings, piano glissandi, coprire (immediate stopping of a note) and presso sulla tavola (playing near the soundbox, producing a sound rather like a guitar) on the harp and notes left laissez vibrer, spread chords in the piano parts, all add to the palette. Acciaccature (crushed notes) and accented notes, which occur especially on the fifth crotchet of the six in a bar, give the piece an extra jaunty swing. The rapidly changing dynamics which I have used here and throughout the suite are a re-enforcement of the idea that the river, when you observe it closely, has many intertwining strands to it, which depend on the geology, the shape of the riverbed, the weather, the wind, the state of the tides and a thousand other factors, and is never the same and never still. Sections an octave above the treble, or an octave below the base note, go some way towards showing the vast tonal range that can be heard in the river's flow, impeded as it is by the weir. Though I have tried to do justice to both the river and the instruments I have used, I am very aware that I have not always used the full range and timbre potential the instruments offered me. I hope that I will become more competent at this with time.


Fig. 15. "Sounding Severn" (3) "Under Ashleworth Quay", bars 16-19.


Fig. 16. "Sounding Severn" (4) "Lavernock", bars 66-67, harp only.


Fig. 17. "Sounding Severn" (5) "Diglis Weir", bars 41-44.


Fig. 18a. "Sounding Severn" (5) "Diglis Weir", bars 83-88, part 1.


Fig. 18b. "Sounding Severn" (5) "Diglis Weir", bars 83-88, part 2.


Fig. 19. "Sounding Severn" (5) "Diglis Weir", bars 3-4 and 13-14.

## Chapter 7 Conclusion.

This research project set out to investigate the landscape of the River Severn, in particular the sounds created by the interaction between the river and its environs, and to create a series of original compositions that chart the relationship between geographical site and composed sound.

How are the impressions of the phenomena like the river, formed in the composer's mind, then recreated as music or sound? This challenged me to open my senses to all forms of input, without filtering it in any way. It challenged me to avoid classic forms or preestablished methodologies, or indeed any artificial extra steps between the impressions of the river and the composed sound. I also believe that one should not be afraid of letting any collateral information that has been gained or personal emotions generated by the river interact with the "raw data" of long hours of fieldwork in the creation of composed sound.

What creative strategies and methodologies have composers used to engage with and represent landscape in their work? I have used a system of close listening and prolonged watching, recording of sounds both above and below the river, taking photographs and video recordings of the river, and reading widely on the cultural, industrial and social history of the river, its geology, meteorology and bathymetry; from this store of information and the emotions that the river has created in me, by internal transformation composed music comes.

What is the relationship between site, composer, and new work? I still go to the river, and listen and watch it, because I can never know or see everything; the river is continuously changing and mutating, as is the wind, the weather, the freshes, the people acting with or on it. Theoretically there is no limit to the number of compositions that can be produced from this endlessly fascinating entity, the River Severn.

## Chapter 8 Afterword

When this project comes to its close, I want to go back to where I think my love of natural sounds began - the sea. Using the methods I have evolved, and perhaps modifying them and/or adding to them, I shall try to examine in depth some of its complex soundworlds, above and below the water, and then try to construct music from it, to try to tell others how its power and majestic force affects me. I should also like, by some means, to take the music of the Severn back to the river: an outdoor performance, though difficult logistically, would be my ideal. I would also like to pursue the interest it has given me in the history and the technical aspects of bells and bellringing.

This project has definitely formed my style, for when I began it I felt I could write fluently only when I had lyrics to inspire me; I could only pass on other people's passions which came to me channelled through their poetry and their visions. However, now I know how to listen and look for a myriad ways of beginning to express my own feelings. Laid out ready for you are the almost infinite impressions and emotions you can feel when you see, hear and be with the natural world you choose.

The music I have presented here truly reflects my personality, whatever its shortcomings may be, as touched in this opus by the river. This is just the view of one person, who has been moved by the unique river Severn and its landscape - but I hope that other people can come in and share my delight.

## Endnotes

Chapter 1 Explaining the title.

1 From an article by Debussy in SIM for November 1913, translated by Roger Nichols, quoted in Roger Nichols: The Life of Debussy (C.U.P., 1998), p.144.

2 I found out later that $96 \%$ of rivers in England and Wales are on private land and inaccessible to the public. See Rivers: with Griff Rees Jones. First broadcast on BBC1, 9th August 2009.

3 Josephine Jeremiah: The River Severn: A Pictorial History: from Shrewsbury to Gloucester (Phillimore, 1998), p.ix.

Chapter 2 A brief look at the working practice of some "programmatic" composers and the

Minimalist movement.

1 Iannis Xenakis, in the 1980 preface to Iannis Zenakis: Music and Architecture: architectural projects, texts, and realizations (Pendragon Press, 2008), p.xviii.

2 Eric Taylor: The AB Guide to Music Theory (The Associated Board of the Royal Schools of Music (IPublishing) Ltd., 1991), p. 243.

3 Roger Nichols: The Life of Debussy (C.U.P., 1998), p. 85.
4 Patrick Morris: "Steve Reich and Debussy: Some Connections", Tempo, no. 160, March 1986, p.8.)

5 "Symbolism", http://www.huntfor.com/arthistory/c19th/symbolism.htm, 03/12/2010, p.1.

6 Roger Nichols: The Life of Debussy (C.U.P., 1998), p. 110.
7 Roger Nichols: The Life of Debussy, p.110.
8 Arnold Bax: Farewell, My Youth (Longmans, Green \& Co., 1943), quoted in Lewis Foreman: Bax: A Composer and his Times (The Boydell Press, 2007), pp.19-20.

9 Lewis Foreman: Bax: A Composer and his Times, pp.298-7. Lady Elgar used to draw all his staves out for him with a five-nibbed pen, which now has an honoured place in the Elgar Birthplace Museum.

10 F. G. Edwards: "Keeper of Visions", Musical Times, vol.139, no. 1860, (Feb. 1998), p. 22 .

11 Matthew Riley: Edward Elgar and the Nostalgic Imagination (C.U.P., 2007),
p.81.

Matthew Riley: Edward Elgar and the Nostalgic Imagination, p. 82.
Gerrard Northrop Moore: Creative Life, p. 41, quoted in Matthew Riley: Edward Elgar and the Nostalgic Imagination, p. 93.

Matthew Riley: Edward Elgar and the Nostalgic Imagination, p.59. Matthew Riley: Edward Elgar and the Nostalgic Imagination, p.11. Eric Blom, "Obituary", Observer, 11 Oct 1953, p.13, quoted in Lewis Foreman: Bax: A Composer and his Times (The Boydell Press, 2007), p. 402.

Lewis Foreman: Bax: A Composer and his Times, p. 357.
Lewis Foreman: Bax: A Composer and his Times, pp.309-10.
Lewis Foreman: Bax: A Composer and his Times, p.161.
Lewis Foreman: Bax: A Composer and his Times, p.161.
Robert H. Hull: A Handbook to Arnold Bax's Symphonies, (Murdoch, [1932]), quoted in Lewis Foreman: Bax: A Composer and his Time, pp.297-8. Lewis Foreman: Bax: A Composer and his Times, p. 298. From a letter from Arnold Bax to Mary Gleaves, quoted in Lewis Foreman: Bax: A Composer and his Times, p.298).

King Palmer: Teach Yourself to Compose Music (The English Universities Press, 1952), p.2, quoting Hegel.

Iannis Xenakis: Formalized Music (Pendragon Press, 1992) p.1, quoted in Iannis Xenakis: Music and Architecture: architectural projects, texts, and realizations (Pendragon Press, 2008), introduction, p.xi. Iannis Xenakis in the 1980 preface to Iannis Zenakis: Music and Architecture: architectural projects, texts, and realizations, p.xvii.
Nouritza Matossian: Xenakis (Kahn \& Averill, 1990), p.66.
David J. Lieberman in Iannis Xenakis, Music and Architecture: architectural projects, texts, and realizations (Pendragon Press, 2008), p.x.

Iannis Xenakis, in the 1980 preface to Iannis Zenakis: Music and Architecture: architectural projects, texts, and realizations, p.xvii-xviii.

Iannis Xenakis, in the 1980 preface to Iannis Zenakis: Music and Architecture: architectural projects, texts, and realizations, p.xviii. (2006), p.70; editor's footnote.

1 Listening, as opposed to hearing. Pauline Oliveros defines "deep listening" as "a practice that is intended to heighten and expand consciousness of sound in as many dimensions of awareness and attentional dynamics as possible" (Pauline Oliveros: Deep Listening: A Composer's Sound Practice (iUniverse, Inc., 2005), p.xxiii). I prefer to use the term close listening to deep listening: although I have not been involved in the complex meditation practices Oliveros has devised for optimising deep listening, I do strive to receive and process all the auditory information that comes to me when I am down by the river and actively try not to cut any of these strands out, which is a basic tenet of her philosophy.
2 Hugh Conway-Jones: Working Life on the Severn \& Canal: Reminiscences of Working Boatmen (Alan Sutton, 1990), p. 130.
3 Robert Saxton: "Where do I begin?", Musical Times, vol. cxxxv, no. 1820, (Oct 1994), pp. 623-633.

4 Robin Holloway: "Fishing in ruffled lakes", Musical Times, vol. cxxxvii, no. 1838, (April 1996), pp.5-9
5 Wapedia: Hypnopompic [sleep] http://wapedia.mobi/en/Hypnopompic, 12/09/2009. Most research on hypnopompic sleep is about the temporary paralysis that some people experience during it. After having a stroke some years ago, as I was waking I would use my left, normal arm to lift the other straight up, and hold it there. This had been recommended as therapy. I found I could let go of my right arm and it would still stay upright. However, as hypnopompic sleep faded into wakefulness, my right arm - which had no feeling and had dislocated from the shoulder-socket after the stroke - would fall down. It did this for seven months until control returned.

## Chapter 4 Severn Journey.

1 This was expanded by Brandon LaBelle during a lecture at the Richard Hamilton Building on $21^{\text {st }}$ March 2011. More details of his theory can be found in his book Acoustic Territories: Sound Culture and Everyday Life (Continuum, 2010), chapter 1; Underground: busking, acousmatics, and the echo.

2 The nearest equivalent sound in the western tradition is the Aeolian harp, a meeting of natural and man-made which fascinated Elgar. His friend Arthur Troyte Griffith made him one, and he reproduced the sound it made in several works, including Gerontius and Sea Pictures no. 1 - see Matthew Riley: Edward Elgar and the Nostalgic Imagination (C.U.P., 2007), pp.105-6.

3 Curt Sachs: A History of Musical Instruments (J. M. Dent, 1941), cited in Murray-Campbell and Clive Greated: The Musician's Guide to Acoustics (J. M. Dent, 1987), p. 187.

4 Blowing over the mouths of bottles of various sizes will also give the sort of effect I want to convey. An 18.5 litre (four gallon) bottle such as those used in water dispensers, for example, gives approximately an $\mathrm{A}_{2}$.

5 Large sail-powered Severn boats with a shallow draft, two masts and special rounded prows. For more details I recommend Grahame Farr: "Severn Navigation and the Trow", Mariner's Mirror, vol. 32, part 2, (1946), pp. 66-95 and Basil Greenhill: "Severn Trows: A Vanished Craft", Gloucester Countryside, vol. 3, (1937-40), pp.446-447. The last remaining trow, the Spry, now restored, can be seen at Blist's Hill Museum in Shropshire.

5 Gavin Pretor-Pinney: The Wave-Watcher's Companion: From Ocean Waves to Light Waves via Shock Waves, Stadium Waves, and All the Rest of Life's Undulations (Perigee, 2010), p. 241 .

## Chapter 5 Severn Words of Wisdom

1 Brian Waters: Severn Tide (J. M. Dent \& Sons Ltd., 1947), p. 25.

Chapter 6 Sounding Severn.

1 For further details about the workings of the syrinx, see David Rothenberg: Why Birds Sing: One man's quest to solve an everyday mystery (Penguin, 2005).

2 For information about the technical aspects of bells, I recommend "The Sound
of Bells - technical work on their sound generation and analysis",
http://www.hibberts.co.uk/ears.htm, 12/1/2011.

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Harrison Birtwistle: Secret Theatre, Silbury Air, Carmen Arcadiae Mechanicae Perpetuum (Etcetera, KTC 1052)

Peter Cusack: Lake Baikal Ice (ReR PC2)
Peter Cusack and Max Eastley: Day for Night (Paradigm, PD 14)
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Michael Finnissy: English Country Tunes (Etcetera, KTC 1091)
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## Appendices

Appendix 1. Notes from field trips to the Severn, 2006 - 2009.

Date 30.3.2006
Place Minsterworth (west side). Spring Tide Bore. (**)
Weather Very dark, not much moon.
Time $\quad 10 \mathrm{pm}$, chilly, windy.
Record Minidisk
Description. Sound of reeds blowing really eerie, pulsing but never stopping. But you could hear the continuous roar of the Bore approaching, although it was only a two-star, above the reeds. Continuous waves when the Bore came, unmindful of what was on the bank; it was just as good as I had always heard.

Date 02/07/2006
Place Lavernock Point - the point on the Welsh coast where the river becomes the sea.

Weather Baking hot, sunny, still.
Time $\quad 7.30 \mathrm{pm}$.
Record Stills.
Description. Went down a one-track road. Where it petered out, by a little church, we parked ... We went through a narrow entry in an iron fence and down a steep little valley you could see water ahead, and a boat going upstream ( R to L ).

Right from horizon to horizon it was mirror-calm: to the south molten, blinding silver, to the east pale silver-grey and to the north, past the entrance to the river proper lost in the heat-haze, pale silvery-blue ... You could also see a safety buoy like a little tower on the sandbanks, and two round red buoys, presumably showing a safe passage between ... The cliff was covered with wild flowers, chiefly yellow and dark red ones, full of bees and insects and a bird, which could have been a skylark. Other noises were a seagull crying, a slowly rising engine note from a distant speedboat and waves of gentle ripples as the sea broke over the little gravel spit as the tide began to come in. When line fishermen began gutting, several lesser black-back gulls and herring gulls came and wheeled about, calling. Then a single rather cracked church bell tolled eight. Silver water, subtly changing its colour and ripples ruffling it as various currents flowed, in golden evening sunlight.

Date 18.9.2006
Place Hafren Forest
Weather Sunny, balmy - cooler when the sun went in.
Time All day.
Record Video, stills, minidisk.
Description. ... There were two adjacent little waterfalls; one made a low burble, one a high chuckle. The level of the pitch depends on the depth of the water the fall falls into. Lovely sharp smell of pine ... There were dead pines on the opposite bank and they had spilled into the upper stream - this place seemed desolate by comparison to the rest of the walk. I just took a picture of the mountain where it was, and turned back. Put my hand in the river - soft water, cold and sweet.

Date 18.9.2006
Place Llanidloes
Weather Warm and sunny
Time $\quad 6 \mathrm{pm}$
Record Stills
Description Quite a different style of bridge - Georgian-looking, over a wide, mature river - unrecognisable from the young river at the last bridge. The sides have been securely concreted in and confined.

Date 17.12.2006
Place $\quad$ The Severn Bridge on the Ledbury Road at Tewkesbury.
Weather Sunny, still; warmer than usual for the middle of December.
Time 12 noon.
Record Stills, video.
Description. The river was in flood ... To the south, the sun on the water was blindingly bright. As the river touched the banks eddies were set up which created whirlpools, which travelled a long way down the river in oblique lines. Sometimes there were one or two large ones, sometimes four or more small ones in a line with lines of ripples before and after them: sometimes, in the centre of the river especially, there was a circular raft of perfectly calm water, looking like ice, with small whirlpools all round it. At the left bank of the river, where we were, all the whirlpools turned widdershins ... My first instinct is to recreate the creation and travel of whirlpools is by voice.

Date 13.1.2007
Place Upper Lode Lock
Weather Dull.
Time $\quad 11.45 \mathrm{am}$.
Record Stills, video, minidisk.
Description. Flooded - and the river still rising. Distant sound of Tewkesbury Abbey bells ... In the shallows were great pulsing rafts of scum and litter picked up by the flood. It was very quiet and it seemed timeless: the sky was almost the same colour as the water. We had come along a causeway surrounded by water to get to the river ... I felt very connected with the water - it wasn't over there, in the river channel, it was all around me, very near.

Date 10.3.2007
Place Hampton Lode, Shropshire
Weather Sunny, warm, slight wind.
Time $\quad 11 \mathrm{am}$.
Record Stills, video (from eastern side)
Description. The river was swollen, turbid, moving faster in the middle than I could. Air was really sweet, smelling faintly of fruit-wood smoke. There was also the faint sound of rippling water ...

Even with the sound of an electric saw running continuously, there was a sense of peace there.

Date 10.3.2007
Place Ironbridge (west side, then east side)
Weather Sunny, warm, slight wind
Time $\quad 1 \mathrm{pm}$.
Record Video and stills.
Description. Blue tit singing energetically ... You could hear snatches of conversations rather than traffic; lots of people and families were out for the day, because it was really the first nice weekend of the year. Ice-cream, people sitting outside the Tontine Inn almost Mediterranean ...

The river to either side of the bridge was pale brown, tugging twigs round in urgent circles, but under the bridge the water was black and glittering. Two white doves came silently to investigate the possibility of food then they flew off effortlessly over the river.

When you looked over from the west to the east side, you could still see Eustace's shed, where he made the coracles. Apparently his house, Victory House, has been "done up" by his two surviving sisters, and is up for sale.

Date 20.3.2007
Place Minsterworth, west side, by the Church: Spring Tide Bore. (****)
Weather Sunny, slight wind, icy cold.
Time $\quad 8.47 \mathrm{am}$.
Record Video, minidisk player, stills.
Description. Although it was March and a weekday, it was very crowded ... there were many stately sedges still upright from last year, brittle and dry. Several people bent them down to improve the view.

A few minutes before the Bore was due, the river, which had hardly seemed to flow at all and was very placid, began to churn round in wide circles ... Then the Bore came round the bend, a great wave about five feet high ... At the bank it crashed up in a great continuous fountain of yellow spray. One surfer, who was perhaps too near the side, got turned turtle by the wave in an instant and smashed into the bank ...
After the first wave had thundered past on its way to Gloucester, the secondary waves followed, and the very disturbed pewter-coloured water gradually settled down. The river began to flow again, flowing determinedly UPSTREAM. It was full of whirlpools and mud, gurgling where it passed through pussy-willow branches. We walked along the towpath and watched the water gradually rise. In a pool by the western bank the water looked as if it were welling up from the centre of the earth, and carrying most of the earth's mud with it. The river must have been flowing at about 8 knots and was carrying huge chunks of detritus.

Date 7.4.2007 (Easter Saturday)
Place Lavernock Point
Weather Warm, sunshine, no wind, mirror-calm water.
Time $\quad 5.10 \mathrm{pm}$.
Record Video, minidisk player, stills.
Description. There was a bell, like a buoy, not clear like a church bell, which rang out from across the water, often just three times together. Could have been a chapel bell ringing out for evensong: it was 5.30 , but it was very intermittent ... There was a chaffinch on the cliff behind me which sang beautifully: on the way back there was a robin which perched right above me. There was also the deep whining of motor cruisers, mostly coming
"home" from the sea towards the river. There were also a few silent sailing boats, and one cargo boat.

There were three fishermen right down on the point: there was also a boy who was making stones skip on the water ... The water was opalescent: you couldn't tell where the water ended and the sky began. It made Flat Holm and Steep Holm look as though they were floating. You couldn't see Weston-super-Mare because of a slight mist - downstream this mist became indistinguishable from clouds.

As the tide turned, there was the sound of gentle rippling and eventually the sound of tiny waves breaking. Seagulls started to come in too - three flew overhead, calling. A sailing boat can up the river remarkably fast - about four knots, I guess, on the incoming tide. He actually furled his sail as he came up. The fishermen packed up and walked homeward up the beach. The first one said he had had a "champion" day: he had only caught one cod but "it was lovely sitting in the sun". Terry went to test the water for me. He said it was salty, but not as salty as the sea.

It was totally calm - it even made the other people on the beach seem calm and content. The boats were transient, but the scene was timeless. I think Lavernock Point is my favourite seaside place.

Date 31.5.2007
Place Bewdley
Time 3pm
Record Video and stills.
Description Bewdley was full of people enjoying the sunshine. There the river, fuller than it had been at the last visit, was flowing about 4 knots, with tiny sparkly ripples. It was full of swans, geese, and the occasional pushy mallard. The river-water was very clear.

Date 28.6.2007.
Place Ashleworth Quay
Weather Dull, no wind.
Time $\quad 7.40 \mathrm{pm}$.
Record Stills
Description We at last got to the side of the river, thanks to the flood defences at the quay. The river was running above my feet - I was seven steps down from the top of the earth ridge, but the river was running at 3 -and-a-half steps down the other side. The water was fast, turbid, and full of whirlpools and flotsam. It was making the occasional musical
noise, too, presumably from the little waves that were being kicked up. A duck braved the fast central course of the river and was carried downstream at a terrific speed. There were black-birds singing.

Date 28.6.2007.
Place Maisemore Bridge
Weather Dull, no wind.
Time $\quad 8.00 \mathrm{pm}$.
Record Stills.
Description River running really fast, lashing at the willows that grew alongside ... On the upstream side you could see a huge upwelling of water next to the stanchion ...

Looking up the river I was struck by the fact that beyond what I could actually see there were 150 more miles of water thundering down from Plynlimon Fawr.

Date 31.8.2007
Place Blackrock
Weather Sunny, warm.
Time $\quad 3.45 \mathrm{pm}$
Record Video, stills.
Description Apparently there are only three licensed fishermen left, two of whom are brothers. The river was going down (quite terrifyingly fast) and exposing long, low stone outcrops, some covered with seaweed; eventually the only clear channel was between the two tall tower in the middle of the bridge. The only noise the water made was the babble of the water as it negotiated a little naturally made "weir" in the water channel nearest to the western shore. It grew less and less and then stopped altogether, as the tide went out. The lave fisherman waded out into the water, which was of very uneven height sometimes up above his waist, sometimes around his ankles. When he moved, he felt for the depth of water with the handle of his net first. Then he moved down the river and got in a boat (a small motor-powered boat, but he rowed it, presumably so as not to scare the fish). He went under the bridge and then got out and stood in the water - only about waistheight - and was joined by a second fisherman. They fished for nearly two hours, as the black shoals got wider and the silver lines of water got narrower, but caught nothing.

| Date | 9.9.2007. |
| :--- | :--- |
| Place | Ashleworh. |
| Weather | Warm, calm. |
| Time | 7 pm. |
| Record | Hydrophone |

The colours were lovely - grey, blue and pink and a hazy pink sun setting. The river was very calm, unruffled and only flowing at less than one knot. The patterns the slight breeze made with the reflections in the water were beautiful - water, then stripes of water and the bank reflected, then the bank itself, then stripes again, then the water - and all in these beautiful colours.

The Boat Inn and the Haw Bridge Inn were both still closed due to flood damage. The one at Ashleworth had a little skip outside, with all sorts of household items thrown into it, all ruined by river water.

| Date | 21st July 2008. |
| :--- | :--- |
| Place | Worcester |
| Weather | Sunny, breezy. |
| Time | 12.45 pm |
| Record | Video, stills. |

Description The sound was the crying of gulls and fairly distant traffic noise. The river was alive with birds - pigeons flying above it, dozens of swans and their grown-up children from last year pushing in for food, mallards dodging amongst them, and blackheaded gulls, kittiwakes and lesser blackbacks with their still grey-speckled young, calling out at the least little thing, turning and twisting in the air before landing in the water again to ride the ripples against the gentle, insistent flow of the water. It was almost as though they had an unsettling race memory that if they didn't do something the river would inexorably carry them back to the sea.

The bankside was eighteen-century in character, planted with trees and given over to quite, civilised pleasure ... but anarchic little children rather pleasingly spoiled the tone, playing in a circle of fountains and shrieking with glee every time they shot up high: one little toddler looked quite rapt at the water, perhaps her first encounter with water outside the bath.

The river water was very clear - you could see a swan's head even when its neck was plunged ring down in it - and sparkling in little ripples caused by the breeze. They made wonderful interlacing arches when the river went through the arches of the bridge. The seagulls, people and traffic made a continuous noise, but the river stayed silent.

Date 27th July 2008.
Place Sand Point.
Weather Hot and sunny, warm breeze. Low tide.
Time $\quad 1 \mathrm{pm}$.
Record Video, stills.
Description Walked up the hill, up a wooded path. It opened up at the top, with the path a fine carpet of grass, kept like a soft green mat by rabbits - there were lots of droppings and freshly-dug holes around. The river was still the river on our right side, and on the left it had metamorphosed into the sea, but the tide was low and there were sandbanks visible, both above the water and just underneath. We learnt that night that a little boy had been playing on one of these sandbanks higher up the river, had been caught on one of the fastflowing channels between them, and had been swept away and drowned.

On the banks on either side of the walk were blackberries in flower, red and white clover, pale blue stately teasels ... curiously no nettles; they only grow where people have lived, and I don't think anyone has ever lived up there. A stand of bushes on the seaward side was growing at a bizarre angle because of years of bitingly cold winter winds ... You could hear the occasional warbler, and a peewit way over on the ham, but curiously no sea-gulls. The smell was of warm grass, and the sea. The sea was very clear, and you could see seaweed through it on the bottom. The surface glittered in the sun, and the lapping of the waves could be heard even up on the ridge. On the river side, broad, gentle swells rolled silently in.

Date 15th August 2008.
Place $\quad 7.45 \mathrm{pm}$.
Weather Llanidloes, the Short Bridge (eastern side).
Time Dull, warm.
Record Video.
Description It was a very exciting sound - you could hear the river roaring before you could see it, getting louder and louder as you walked down Short Bridge Street ... A hansom black-and-white dipper chirped loudly, moving from one tiny rocky island in the foam to another, and then disappeared up the river, flying fast and low. A gentleman at the Royal Head Inn where we were staying said that when he and his pals were young they used to go to the bakery and beg a piece of raw dough and use it as bait to catch chubb in the river there.

Date 17th August 2008.
Place Hafren Forest to The Source of the Severn.
Weather Mainly dry, some sunshine, warm.
Time $\quad 9.45 \mathrm{am} .-5.45 \mathrm{pm}$.
Record Video, stills camera, hydrophone.
Description I am going to record this, as I see it, in the "wrong" order ... It's just that I remember things better in chronological order.

We began on the eastern side of the river, and did the Cascades Walk first ... the river was moving fast, being wide and shallow, perfectly clear and revealing a bed in a hundred shades of brown and gold. Where the water flowed over seams of rock, which were laid diagonally to the flow, small waterfalls and sprays of foam were created, filling the valley with its splashing and bubbling. Where the river plunged down a little waterfall into a hollow it had gouged out over thousands of years it generated a deep burbling, which you could almost make out as giving the noise a ground-base ... After we had clambered up the rocks to the right of the elegant cascade, the true Source of the Severn walk began. At first it was quite level gravel, still on the east side of the river. The banks were covered with flowers - delicate flowering grass, thistles, willow herb, eyebright, yellow vetch, purple heather, ling and blackberries. The smell of pine trees was all pervasive. We soon passed the point where we had turned back last time we visited Hafren, a wooden hut with picnic tables, and went on further into the forest ... [We] eventually came to a clearing and crossed a tiny bridge onto the western side. We found that the waterfalls were deeper here, and the noise the river made had an even deeper bass.
... There were patches of the delicate grasses which still had a rainbow of water-droplets caught amongst them from recent showers. In the sunlight they were magical.
... We approached Hafren Falls ... The falls are actually in three parts. There are a series of short waterfalls at the top, bursting with energy and foam, then a long, vertical, narrow fall, and finally a very steep smooth wall of stone down which the water fans out in a cascade like a bubbling white wedding-dress. The noise is tremendous ...

As we went further up and the valley became steeper, the river became narrower and deeper and the cascades came more and more often. This was the most difficult part of the walk, because the path was of loose rough stones, in places very steep, and it sometimes became the temporary bed of an escaped tributary ... We were out of the forest and into moorland.
... Only occasionally did the river appear, an energetic black-and-white cascade of water and foam, roaring like a little lion. The gentle forest hiss of leaves died away, and the more urgent gusts of wind shaking the reeds took over. The birds which had sung invisibly
through the forest now fell silent, though now occasionally you could hear sheep bleating high on the fells above ... The path was narrow and rather precipitous here, punctuated every few yards by stone-built open channels to help the little tributaries tumbling down the fellside join the river.

As we got nearer the top of Plynlimon the ground began to level off and become increasingly boggy ... Then, suddenly, we were there; a simple post saying, in English and Welsh, The Source of the Severn. All around were black pools of peaty water, but few yards ahead of us, beyond a small pool, a patch of sphagnum moss of an almost phosphorescent green and a little patch of cotton-grass, was a tiny waterfall, bubbling energetically. In keeping with the Severn's often secretive running, you couldn't quite see it, but you knew it was there.

The main memory I have of that day was the unstoppable, ferocious energy of the river. Even from its source, it gathers itself quickly into a purposeful stream, carving its way through peat and sheer rock, running headlong through the forest, charging furiously through the occasional human attempts at constraint, bounding joyously down cascades, utterly unstoppable in its intention to plunge itself finally into the sea ... My friend in the Royal Head said that when he was small it was the done thing to go up the mountain in the dark (guided by one of the local shepherds) and see the sun come up from the top. He went up with a group of friends from the local youth club but "I never did see him right."

Date 18th August 2008.
Place Newtown, Powis (western side).
Weather Dull, warm.
Time $\quad 11 \mathrm{am}$.
Record Video.
Description ... An elderly couple walked onto the bridge on the downstream side and stopped to look down into the water. After a long silence, the wife turned to her husband and said, in a thick Birmingham accent, "It doesn't look very clean, does it?", and they continued their walk in silence.

Date 7.3.2009
Place Between Leighton and Buildwas
Weather Dull, mild, calm.
Time $\quad 3.15 \mathrm{pm}$.
Record Video, stills.
Description We stopped at a viewing place just north of Buildwas to get a good view of the river meandering through the valley below us ... You could just see ... little beaches of sloping sand on the insides of the bends. It was a lovely, distant world - a bright silver river winding through a flat, incredibly green landscape. I would have loved to walk along the banks, in all the green.

Date 7.5.2009
Place Lydney Dock.
Weather Warm, sunny, slight breeze.
Time $\quad 3.55 \mathrm{pm}$.
Record Video, stills.
Description The river was very still today, twigs just bobbing along very gently. The colours were mainly pale blue, pale brown, pale green and silver. There were lots of people, enjoying the scene, talking quietly. There was one group of three men from Birmingham, lying of the bank drinking lager, who were talking loudly, swearing and laughing.

Extracts from a diary, February 2009.

1st Today was bitterly cold ... we didn't go out. I had a lot to do on the computer - I always work for long hours for several days when I have been to a tutorial, because I always come away with lots of ideas that I want to see put into action all together, right now.

Then I started to think about the music ... a piece of music made of words. I started to think of its structure like that of a conventional piece of music, because that's how I think perhaps it is far too conservative ("Do I dare eat a peach?"). But how do you start to construct something that's made up of something as conventional as words? Two long strands of words, the names of all the town and villages down the river and all the pubs down the river, I thought would form a sort of continuous bass strand. Then as a village name is mentioned another strand comes in, speaking or singing something particularly associated with that place. Now I am wondering about the different voices ... different pitches, different accents and so on ... this ... is necessary to make sure someone listening can follow any one strand of the words - they will overlap considerably and if they all are in the same place they will just be an indecipherable mess.

4th I was watching the news again when we got home, and the picture was suddenly of the second Severn Bridge ... The story was that both Severn bridges had had to be closed to traffic, cutting off the M4 into Wales ... The upper bridge often has to be closed because of high winds, but the lower one had to be as well because great lumps of ice had started falling the 50 feet from the rigging and had smashed the windscreens of at least five cars. Later bulletins had an amateur film which showed pieces of ice falling - one commentator said they were up to one metre square ... one driver who had come east over the bridge just before it was closed, and he said how frightening it was, hearing the ice crashing down.

5th I have been thinking about why the closing of the Severn bridge had such a strong effect on me ... every element takes against you, throwing great lumps of ice at you, breaking the last defence of the car's windscreen, and there is nothing at all left on your side. It is even more frightening that this last betrayal is perfectly mechanical and mindless.

6th The snow was melting quite fast this morning. If I don't get out and see the river every second day or so I feel undirected and waste time.

We parked outside the Anchor Inn at Epney, and set off back up the river where the Severn Way lay right along the river bank. Almost immediately we came upon a little pill, and a notice PRIVATE ELVERING - it is the elver season again, although I understood that it peaks in March and April. The houses there mostly had some sort of boat, and a small orchard of apple or pear trees in the garden - one had about 30 empty demijohns lined up outside on the kitchen wall, and several plastic buckets round the side. I suspect they had all contained cider or perry, and will be filled up again when harvest-time comes round again ....

I set up a file for Severn Rising, the piece for Okeanos I have forming very vaguely in the back of my mind. I tried several openings but nothing would gel at all ... Although I remember the sounds and effects of each instrument, and I know the kind of piece I want to write and the effect I want to produce, there needs to be one other stimulus to join the two and produce a piece of music. Whether I must actually to see the river and link the instrumental sounds I remember to the river sounds, in order to put them in order on a kind of mental grid, I'm not sure. I will take care to remember the instrumental sounds, consciously, next time I can get down there, and see whether the musical piece comes together - if it does, that will prove this theory right.

7th At last I can think about sounds of instruments, and musical phrases, which I keep going over in my head (and keep some manuscript paper by me, in case anything gels), and take one of my lovely "new" books to get lost in. The best moment for me to get a "gelling" moment is the brief second between being asleep and being awake, when the subconscious is in control - if only I could encourage such moments more.

8th [Watching the Bore at Waterend] I think what I loved most about today's Bore was the initial roar and the tiny breakage lines which looked like eels in the water from their lithe, sinuous lines. Those lines immediately connected in my mind with the koto, gradually moving up and down a semitone and the shakuhatchi doing it as well, but not in time with it. And the fact that we were completely alone to see it was amazing.

9th Mostly read my book today, but the "breakage lines" piece was going in my head the whole time.

10th We had to go out to a joint rehearsal with the Worcester contingent at the parish church in Upton-on-Severn. The power of the crescendo in Gounod's Sanctus still gives you a brief sighting of heaven. I know it is 19th century schmaltz but the power of all those various voices all singing their little hearts out and filling the church with blazing light is truly moving. Crescendo's are what Philomusica does best.

11th Got up early and did all the domestic things that have to be done every day before you can get on with anything interesting. Then we set off north ... The first [tune that came to me] was a lovely rising phrase, with Kathryn Skipp's voice singing it in my head, with the words, "And like a homesick angel fly / Into the loving arms of God". The second came when I was on my own in the kitchen making dinner. I realised that I was swaying about, with this lilting tune running over and over in my head like a looped tape. I wrote that down too, to work on later - that is, if I don't turn back to them and find they were just trite crap.

13th I was the first to get up, as usual, so ... I went to the park to feed the ducks. There was the complicated kaleidoscopic sound of a waterfall gushing down into the main park lake. The sound had a particular quality from being in a narrow valley at that point at the top end of the park, and so did the ducks' calls, although I find it hard to say what the quality is. It is as if you held a huge soap bubble in your hands, and the waterfall and the ducks were inside it. In the park proper, which is shaped like a large, shallow bowl, the sound is quite different; it sounds far away, and it has a long, eerie echo. Quite a large skein of Canada geese came flying in, with guttural, echoing calls, wheeled round in a semicircle and made an operatic mass splash-landing in the lake. The echoing of excess lake-water rushing down the culvert at the opposite side of the park was quite unlike the waterfall - it had a tinny, closed-in quality.

Then I went down Peasholme Gap to the sea and walked to the harbour on the South Side round the castle headland. I spent a long time listening to the repetitive, falling cries of the seagulls circling apparently endlessly above the Holms. The sea, unlike the river, which is silent for a most of its course, makes a continuous noise. Today it was the quiet roar of the waves coming in, the whoomf - like a hammer-blow rather than an actual noise - as they hit the sea-wall, its abrupt stop, and then the fizzing and sizzling of the foam as it runs back over the stanchions and the rocks at the base of the wall back into the water again. I would love to recreate, or represent, those noises, that sense of space, in my music.

22nd Composing the piece for Okeanos is proving really problematic. I can't correlate the music of the Severn as I can "hear" it with the pictures the Japanese instruments.

23rd I was doing housekeeping on the computer, with the typical sounds the instrument make going on at random in my head, when something made a connection: a picture of a mountain stream, sometimes obscured by rocks but then always appearing again lower down, sometimes flowing in a different form (waterfall, rushing torrent, babbling over shallow rocks and so on) depending on the underlying terrain. A piece for Okeanos based on this idea would give validity to using instruments, and styles, from different traditions, so long as they were always somehow linked - after all, although the stream may sometimes be hidden from view it still forms one continuous flow. That started me writing, at last.

24th ... It did help that I was on my own. When somebody else is in the house you can never quite concentrate, because a tiny bit of you is always on the alert for them - to hear what they say, to listen for a noise, to get up and take a cup of tea ... Of course, you can never be totally absorbed because the phone may ring. I have developed a strategy ...

25th Worked very hard on my Okeanos piece ... I was so absorbed it was hard to drag me off to choir; it had gone dark while I was working and I suddenly realised I couldn't see the keys on my computer.

28th ... I love getting the first play-through of a piece in the morning ... It is when my ideas come together, and I feel really motivated to continue. I can see the shape of it so much better, and I know where it has got to go next. For the same reason I often play a piece I am working on last thing at night, to remember it as a whole and hopefully work it out further while I am asleep - perhaps the fact that I sometimes get a creative idea in the few moments between being asleep and being awake will come into play.

I finished the Okeanos piece.

Whirlpools at the Mythe
Legato, serenissime.






































Picture of Atcham



$\%$
















Tamb. (1) $\mathbf{H}=\boldsymbol{m}$
Tub. B.
 Bull-r. (r)














$$
\text { Tamb. (1) } \mid \boldsymbol{H}=\boldsymbol{p}
$$








Tpt. (r)
Tamb (1)

$\operatorname{Timp} .4$



## Lydney Harbour 2009





Vln.

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Rain and Flow



Cymbal
with knitting needle

$\underset{\substack{\text { Timpani } \\ \text { with soft mallet } \\ \text { (tuned to e) }}}{ }$

ourine (on left
of orchestra)



































Severn Bore at Minsterworth
March 30th 2006




Timp.

Susp cym. (r)





Susp cym. (r)
























Singing Water

## Leggieramente







B.














Sounding Severn - (1) In Bevere Lock



















Pno. (r)










Hp.



$342$










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| Db. | 7) $0^{*}$ | $\%^{\circ}$ | $\bigcirc$ | S | $\underline{\square}$ |




Vln. 1
Vla.
Vln. 1



Vln. 1
Vln. 2

















## Sounding Severn (2) - Geese Flying South at Deerhurst

The pianos are opened for this movement and the strings are plucked with the fingers. The harp is not played in this section.





Sounding Severn (3) - Under Ashleworth Quay









Vla.

v. 9 :









Vc.

Db.




Vln. 2


Vla.

v. $2:$


Db.





Vln. 2

vc.










Vla.

Vc.


Db.












Vln. 1


Vla.


Vc.




Vln. 1


Vla.

Vc.






Hp.


Vln. 1


Vln. 2

fff

Vla.

fff

9:













Vln. 1

Vln. 2






Ven. 2


Vc.


Db.







Sounding Severn (4) - Lavernock


Violin 1

Violin 2

Viola





Sounding Severn - (5) - Diglis Weir
for Tiggerman






$436$



















Vln. 1






(pizz.)
Vln. 1







Vln. 2

Vla.

Vc.

Db.




$458$


$460$





Vln. 1

Vla.





The Severn Frozen Over

|  | $\begin{gathered} \text { Largo } \\ \cdot=90 \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Soprano | $\frac{3}{6}$ | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |
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| Alto / | ${ }^{2}$ | - |  | - |  |  |  |  |  |  |  |  | - | - |  |  |
| Counter-tenor | 63 |  |  |  |  | - |  | - |  |  |  | - | - | - |  |  |
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| Tenor | (0) | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |
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| Bass |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Violin 1 | 83 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Violin 1 | Q4 |  |  |  |  |  |  |  | P |  |  |  |  |  |  |  |
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| Violin 2 | $30^{3}$ | O. | O. | O. | O. | p. | $\beta^{\circ}$ | $0^{\circ}$ | ¢\%. | $\beta$ | $\beta$ | $\rho \cdot$ |  |  |  |  |
|  | ${ }^{-4}$ |  |  | - | - | , |  |  |  |  | + | , |  |  |  |  |
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| Violoncello | $6 \cdot 3$ |  |  |  |  |  |  |  | + |  |  |  |  |  |  |  |
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| Marimba |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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Ch. bells







The Severn Runs Through the City of Worcester
for Oxford Brookes University Orchestra





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$168$










































The Source





























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|  | $\bar{m} \boldsymbol{f}$ |  | $f$ | $\qquad$ | $\boldsymbol{m f}$ |  |  |
| Tpt. (1) | 0 |  |  |  |  |  | ค |
|  | $0^{\frac{b}{} b^{2}}$ | - |  | - | - | - | - |
|  | $\bigcirc$ |  |  |  |  |  |  |
|  |  |  |  |  |  |  | ค |
| Tbn. | $\sqrt[6]{:} \cdot b_{b}^{b}$ | - | - | - | - | - | - |







Through Ironbridge Gorge




Ob.

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6





















| Tpt. (r) | 18 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (0) |  |  |  |  |  |  |  |
|  | - |  |  |  |  |  |  |  |
| Tpt. (1) | $6$ |  |  |  |  |  |  |  |
|  |  | - | - | - | - | - | - | - |
|  | $\bigcirc$ |  |  |  |  |  |  |  |
| Tbn. | 7: = | - | - | - | - | - | - | - |
















































for MKS and BS.











Tub. B.

B. r.






Seagull
calls












$\operatorname{Timp.}\left[\begin{array}{l}\text { 6 : } \\ \hline\end{array}\right.$










Top of Plynlimon

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